

Presidio Insects and their plant hosts

National Park Service
U.S. Department of the Interior

Presidio of San Francisco
Golden Gate
National Recreation Area



Take a little time to slow down and take a closer look at the plants in the natural areas of the Presidio. Not only will you better appreciate the intricate beauty and variety of the native plants that grow here, but you also will become aware that they host a whole other microcosm, a myriad of insects for which the Presidio is their world. And the wide variety of habitats found here—from open water and protected

bay, to rocky and sandy shoreline, to tidal marshes, coastal scrub, grasslands, mixed woodlands and ornamental areas—provide vital food and shelter to a great diversity of insects. In particular, bee diversity is very high at the Presidio, with 60 species identified in a recent study. These bees, as well as the many types of flies found here provide a critical role in pollinating our native plants.

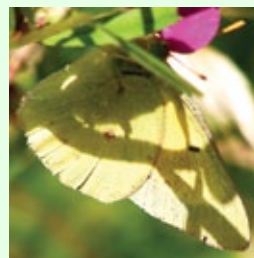
Butterflies

Butterflies are a favorite of the insect world for their beauty and lively grace. The adults may collect nectar and pollinate a wide variety of plants, whereas the larval caterpillars tend to feed on specific kinds host plants. Habitat reduction and eradication of host plants can

mean extinction of species. In 1942, the world's last Xerces blue butterfly flew at the Presidio. This was the first documented butterfly extinction due to human impact in North America, and it inspired the founding of the Xerces Society to promote insect conservation.



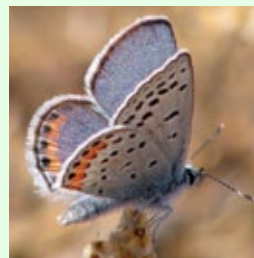
Cabbage White
(*Pieris rapae*)
Introduced to eastern Canada in the 1860s, this species is now found across the U. S. Host plants are members of the mustard family.



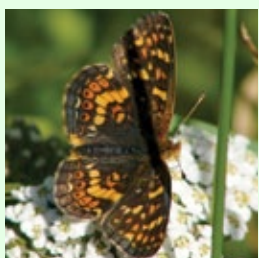
Orange Sulphur
(*Colias eurytheme*)
This widespread species prefers open habitats. Members of the pea family, such as the vetch it is sitting on here, are its hosts.



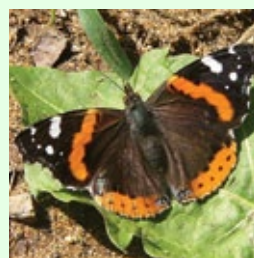
Gray Hairstreak
(*Strymon melinus*)
This widespread species is often found in sunny scrub areas. Host plants it prefers are members of the pea and mallow families.



Acmon Blue
(*Icaricia acmon*)
This West Coast blue has orange on both the top and bottom of its wings. Its caterpillars eat the leaves of buckwheats and lupines.



Field Crescent
(*Phycoides ptratensis*)
This western species frequents open areas, often near streams. Its main host plants are asters and tansy asters.



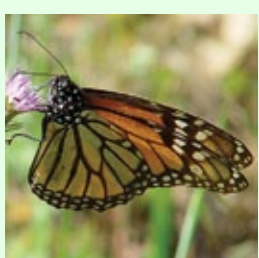
Red Admiral
(*Vanessa atalanta*)
This widespread species frequents riparian areas near streams and marshes. Its preferred host is nettle.



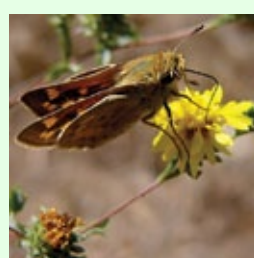
West Coast Lady
(*Vanessa annabella*)
This western species likes open areas and is very common in lowland areas of California. Its main host is mallow.



Common Buckeye
(*Junonia coenia*)
This widespread species is found in sunny open areas. It has many plant hosts including plantain, owl's clover, monkey flower, and toadflax.



Monarch
(*Danaus plexippus*)
This widespread species is known for long migrations. West Coast members overwinter in coastal California, including at the Presidio. Milkweeds are its hosts.



Fiery Skipper
(*Hylephila phyleus*)
This widespread species likes open, sunny areas. Its hosts are grasses. This one is nectaring on endangered San Francisco lessingia, providing pollination for this rare plant.

Bees and Wasps

Bees and wasps get a bad reputation because of their sting, but they can actually be quite beautiful if one takes a closer look. They also are critical to the success and survival of many plants by carrying pollen from

plant to plant as they feed. The Presidio's native plants and bees thus live in close harmony. Our sand dunes and sandy soils also provide important nesting sites for many of these species adapted to burrowing in soft ground.



Thread-wasted Wasp
(*Ammophila* sp.)

Adults of this solitary wasp like flower pollen. Females dig nests in the sand where they provision their larvae with caterpillars to eat.



Sand Wasp
(*Bembix* sp.)

The adults of this wasp feed on nectar. Females dig nests in the sand and provision them with flies that they paralyze with their sting.



Burrowing Wasp
(*Philanthus* sp.)

Females of this brightly striped wasp provision their nests in the sand with other wasps and bees.



Green Sweat Bee
(*Agapostemon texana*)

Females of this species are metallic green, while males have metallic green thoraxes and yellow and black striped abdomens.



Wool Carder Bee
(*Anthidium palliventre*)

This species gathers plant hairs from coast buckwheat to line its nests. Females provision the nests with pollen and nectar from phacelia (shown in photo) and lupine.



Digger Bee
(*Anthophora urbana*)

These flower-loving bees nest in colonies in the ground and provision their nests with a mixture of pollen and nectar.



Bumble Bee
(*Bombus vosnesenskii*)

This native social bee is the Presidio's most common bumble bee. Queens build nests in the ground, where they lay eggs in wax pots and fill them with pollen and nectar.



Honey Bee
(*Apis mellifera*)

This social species was imported from Europe. It is important in the pollination of crops and the production of honey. Wild swarms may occur near "domesticated" hives.

Flies and More

The Presidio is home to a variety of flies and other insects. Many of the flies are hoverflies that imitate bees and act as pollinators as well. Other common insects include several kinds dragonflies that frequent riparian and lawn

areas. Both the adults and young are fierce carnivores of other insects. You also may encounter a number of beetles on the Presidio. Some of these were introduced to North America to control pest plants and insects.



Drone Fly
(Family Syrphidae)

This hoverfly mimics the honey bee (both imported from Europe) in appearance and action. It prefers to nectar on flowers of the daisy family.



Bee Fly
(Family Bombylidae)

Not a true hoverfly, the shape of this fly also mimics bees. Adults feed on nectar and pollen, but its larvae parasitize other insect larvae.



Darner
(*Aeshna* sp.)

Adults of this dragonfly feed on flying insects. The young eat aquatic invertebrates and even small fish. This female is laying her eggs into water plants.



Vivid Dancer
(*Argia vivida*)

This type of damselfly is found at Lobos Creek, where its young feed on invertebrates, and adults feed on aphids, leafhoppers and other small insects.



7-Spotted Lady Beetle
(*Coccinella septempunctata*)

This species of lady beetle was introduced from Europe to control aphids, which are its preferred diet. There also are native species here.



Leaf Beetle
(*Chrysolina* sp.)

This group of beetles has evolved a preference to eat specific types of plants. This European species was introduced to control weeds.

Thanks to John Hafernik (SFSU) for identifications, facts and review

All photos taken at the Presidio by Will Elder

Visit one of the Presidio's many restored habitat areas to see the greatest variety of insects. Please stay on the established trails. Call 415-561-4323 for more information on places to go.

