SPAWN RESTORATION NURSERY

GARDENING FOR WESTERN MONARCHS & OTHER BUTTERFLIES

Along with plants, insects form the base of the food web and provide food to fish, birds, reptiles, and amphibians. Plants and insects have co-evolved. Native insects require a diverse set of native plants to thrive and generally cannot penetrate the chemical defenses of non-native species of plants. Caterpillars are an important source of food for birds, especially songbird nestlings, and transfer more energy from plants to animals than any other insect. Native pollinators help to create and sustain a biodiverse set of plants, providing better habitat for the native insects and arachnids which are food for juvenile salmon. **Reclaiming habitat for native plants benefits the many species of butterflies, moths, native bees, and other beneficial insects while also supporting fish, birds and other wildlife.**

Monarch butterflies are one of the most recognizable species of pollinators in the world, famous for their seasonal migration. The population of the Western monarch has plummeted in recent decades; in 1989 there were 4.5 million Western monarchs, while today the population of the Western monarch is around 233,000 butterflies. The population of Western monarchs has slightly increased in recent years after reaching a low of about 2,000 butterflies in 2020. One of the most important and direct ways that we can benefit monarchs and other pollinators is to improve habitat by providing drifts of milkweed and large clusters of nectar plants.

Among many factors that have contributed to the decline of the Western monarch population, including habitat loss, pesticide use, and increased wildfires, one major issue is that milkweed has been largely removed from land due to development, agriculture, and other alterations to the landscape. Monarch butterflies have four distinct stages in their life cycle in which they go through a process of complete metamorphosis – egg, caterpillar (larva), pupa (chrysalis), and adult butterfly (imago). During the egg and larval stages there is only one plant, milkweed (*Asclepias sp.*), which caterpillars can use a food source. Milkweed is an obligate host plant to the monarch butterfly, meaning that this plant is required food at one or more phase of the monarch life cycle

Monarch butterflies provide an example of what happens to an insect when the host plant which supports the larval phase of the insect is removed from the wild. Dozens of other species of butterflies are also threatened or endangered in the state of California and insect populations are in decline world-wide. Many insects are dependent on their host plants at critical life cycle times. While host plants fulfill an essential role in the life cycle of our local insects, nectar plants are essential for the adult phase of the insect life cycle. **Gardeners can fulfill the needs of both larval and adult insect life cycle phases of native pollinators by a planting a diverse set of locally native nectar-rich plants.**



ALICE CASON

Tips On Planting Milkweed

Do not plant milkweed within 1 mile of the coast; it may interfere with the reproductive diapause the monarchs are in while overwintering

Do plant native milkweeds in inland breeding areas

Do not plant tropical milkweed in California; it does not go dormant and holds higher levels of the OE parasite than native milkweeds, alters the migration pattern, and can encourage monarchs to reproduce at the wrong time of year

Expect California native milkweeds to go dormant in the winter

Plant native milkweeds in similar conditions to where they are found in nature, in areas with plenty of groundwater and sun

Plant native grasses with milkweed to provide protection from sun, wind, and predators

Plant narrow-leaf milkweed (*A. fascicularis*) or showy milkweed (*A. speciosa*) in gardens in Marin County

FIVE PLANTS THAT ARE UTILIZED BY MONARCHS FOR NECTAR

Healthy ecological systems contain a diverse set of native plants and pollinators play a critical role in plant reproduction. Monarch butterflies require plants which contain large clusters of flowers for nectar. Five plants that are utilized by monarchs for nectar and are native to Marin County and most other coastal counties in Northern California are described below. Each of these plants is a host plant for the larval stage of a particular species of butterflies and/or moths in addition to being a source of nectar for monarchs and other pollinators. A brief description is given of each plant along with a list of species of butterflies the plant supports as a host plant. These plant species generally do best with sun and well-draining soil, can grow in sandy, clay, and rocky soils, and require summer dry soils after they are established. Establishment of root systems takes one to two years. The plants grow well together and are naturally found in many plant communities including riparian, mixed forest, oak woodland, coastal scrub, and chaparral.



California Goldenrod (*Solidago velutina ssp. californica*)
Bloom color: Golden yellow
Bloom Time: August to October
Size: 2'-3'H x 2'-3'W
Note: California goldenrod is adaptable to moderately wet conditions.
Host plant to: Northern Checkerspot and Field Crescent butterflies and dozens of species of moths including the White-lined Sphinx. Many beneficial insects are attracted to the flowers.



California Aster (*Symphyotrichum chilense*)
Bloom color: Purple and yellow
Bloom Time: July to September
Size: 2'-3'H x 2'-3'W
Note: Flowers are sometimes eaten by deer but the roots generally persist even when the plant has been browsed. Interplanting asters with deer-resistant plants, such as narrow-leaf milkweed or goldenrod, may help to preserve the flowers.
Host plant to: Northern Checkerspot butterfly and White-lined Sphinx moth and many other moths. Many beneficial insects are attracted to the nectar in the flowers.



Hairy Gumplant (*Grindelia hirsutula*)
Bloom color: Yellow
Bloom Time: June to September
Size: 2'-3'H x 2-3'W
Note: This plant does well on dry, well-drained slopes and also tolerates poorly drained soils.
Host plant to: the White-lined Sphinx moth. Nectar supports many species of beneficial insects.



California Lilac (*Ceanothus thyrsiflorus*)
Bloom color: Varies from purple to blue
Bloom Time: February to May
Size: 8'-12'H x 8'-12'W
Note: It is necessary to cage this plant to protect from deer for two years, until the roots are established. This plant appreciates afternoon shade in hot areas.
Host plant to: Spring Azure, Echo Blue, Pacuvius Duskywing, California Tortoiseshell, Pale Swallowtail, and Hedgerow Hairstreak butterflies, and dozens of species of moths. Insects, especially bees and butterflies, are attracted to the flowers. Nectar supports many insects. A favorite of California native bumble bees in early spring.



Pink-flowering Currant (*Ribes sanguineum var. glutinosum*)
Bloom color: Deep pink
Bloom Time: February to April
Size: 6'-8'H x 4'-6'W
Note: This plant appreciates afternoon shade when growing in hot areas.
Host plant to: Dozens of species of moths. Butterflies and hummingbirds are especially attracted to the flowers.

Additional companion plants include: sages (*Salvia sp.*), yarrow (*Achillea millefolium*), CA sage (*Artemisia californica*), beeplant (*Scrophularia californica*), verbena (*Verbena lasiostachys*), coyote mint (*Monardella villosa*), California fuchsia (*Epilobium canum*), mallows like Checker Bloom (*Sidalcea malviflora*), monkeyflowers (*Diplacus sp.*), pipevine (*Aristolochia californica*), Phacelia (*Phacelia sp.*), penstemons (*Penstemon sp.*), lupines (*Lupinus sp.*), coffeeberry (*Frangula californica*), and coyote brush (*Baccharis pilularis*). Add native grasses or sedges to provide protection from sun, wind, and predators.

Locally Native Nectar Plants

- Support pollinators, which helps to create and sustain a biodiverse set of plants
- Enhance habitat for fish, birds, amphibians, reptiles, and other wildlife through increased food supply
- Restore natural functions of ecological systems
- Provide for the needs of both larval and adult life cycle phase of butterflies and other beneficial insects
- Require little to no summer water, fertilizer, or other amendments
- Supply host plants which support caterpillars; caterpillars transfer more energy from plants to animals than any other insect