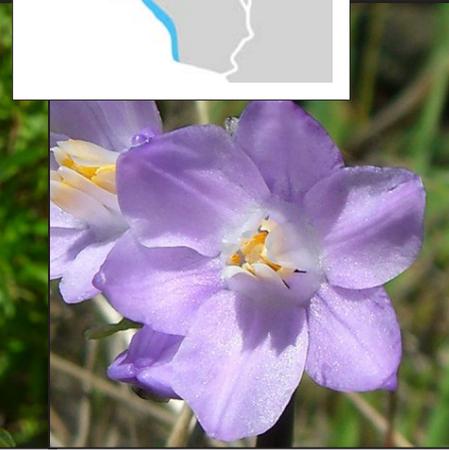


MONARCH NECTAR PLANTS

California Coast



Left to right: Monarch on western goldentop, black sage, and bluebirds.

Stretching over 800 miles along the Pacific Ocean, the California coast is home to a diverse array of habitats, including shifting sand dunes, coastal prairies, oak woodlands, towering redwood forests, and estuarine wetlands. The winter homes of monarch butterflies can also be found in this region, in the form of hundreds of small eucalyptus and conifer groves. During spring and summer, monarchs leave these overwintering sites and fan out across the western landscape to breed and lay eggs on milkweed, the monarch's host plant. Several generations are likely produced during this time. In the fall, adults from throughout the western U.S. migrate back to overwintering sites in California and central Mexico, where they generally remain in reproductive diapause until the spring, when the cycle begins again.

Monarchs at overwintering sites in California and Mexico have declined dramatically since monitoring began in the late 1990s. The Xerces Society's Western Monarch Thanksgiving Count, a volunteer driven effort, has documented a 74% decline in monarchs that overwinter in California since 1997. Across their range in North America, monarchs are threatened by a variety of factors. Loss of milkweed from extensive herbicide use has been a major contributing factor, and habitat loss and degradation from other causes, natural disease and predation, climate change, and widespread insecticide use are probably also contributing to declines. Because of the monarch's migratory life cycle, it is important to protect and restore habitat across their entire range. Adult monarchs depend on diverse nectar sources for

food during all stages of the year, from spring and summer breeding to fall migration and overwintering. Caterpillars are completely dependent on their milkweed host plants. Inadequate milkweed or nectar plant food sources at any point may impact the number of monarchs that successfully arrive at overwintering sites in the fall.

Providing nectar-rich flowers that bloom from fall through early spring is one of the most significant actions you can take to support monarch butterfly populations along the California coast. This guide features coastal California native plants that have documented monarch visitation, bloom during the times of year when monarchs are present, are commercially available as seeds or transplants, and are known to be hardy. The list also includes moisture requirements, so that you can choose plants to create a drought-tolerant monarch garden, if needed. These species are well-suited for wildflower gardens, urban greenspaces, and farm field borders. Beyond supporting monarchs, many of these plants attract other nectar- and/or pollen-seeking butterflies, bees, moths, and hummingbirds, and some are host plants for other butterfly and moth caterpillars. For a list of native plants that host butterflies and moths specific to your zip code see www.nwf.org/nativeplantfinder.

The species in this guide will be adaptable to growing conditions across most of coastal California, although a few species have limited distributions. Please consult Calflora (www.calflora.org) for details on species' distributions in your specific area.



Bloom	Common Name	Scientific Name	Flower Color	Max. Height	Water Needs	Notes
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	Forbs			(Feet)	Low, Medium, or High	All species are perennials. Monarchs are typically present in coastal California from September through March, but can be found year-round in some parts of the region.
Spring to Fall	1 Coastal sand verbena	<i>Abronia latifolia</i>	Yellow	1	L/M	Tolerates salt spray and prefers sandy soils. Can bloom year-round.
	2 California goldenrod	<i>Solidago velutina</i> ssp. <i>californica</i>	Yellow	3	L	Important late-season forage for bees, butterflies, wasps, beetles, and more.
Summer to Fall	3 Common sandaster	<i>Corethrogyne filaginifolia</i>	Yellow/purple	3	L/M	Host plant for Gabb's checkerspot (<i>Chlosyne gabbii</i>).
	4 Dunn's lobelia	<i>Lobelia dunnii</i> var. <i>serrata</i>	Purple	2	H	Excellent butterfly plant.
	5 Roughleaf aster	<i>Eurybia radulina</i>	Purple	2	M	High drought tolerance once established.
	6 Sweetscent	<i>Pluchea odorata</i>	Pink/purple	3	L	Mostly coastal, brackish plant. Can tolerate saline sites.
	7 Western goldentop	<i>Euthamia occidentalis</i>	Yellow	6	M/H	Wetland-riparian.
Winter to Spring	8 Bluedicks	<i>Dichelostemma capitatum</i>	Purple	3	L	Attracts other bees, butterflies, and hummingbirds. An early spring bloomer.
Winter to Summer	9 Seaside fleabane	<i>Erigeron glaucus</i>	Purple	2	L/M	A great butterfly plant.

Shrubs and Trees

Spring to Summer	10 Black sage	<i>Salvia mellifera</i>	Blue/purple	6	L	Important butterfly and hummingbird plant. Quail eat the seeds.
	11 Blueblossom	<i>Ceanothus thyrsiflorus</i>	Blue	15	L	Amazing pollinator plant. Host plant to many butterfly species. Birds will eat the seeds.
Spring to Fall	12 Dune ragwort	<i>Senecio blochmaniae</i>	Yellow	3	L/M	Limited distribution.
Summer to Fall	13 California broomsage	<i>Lepidospartum squamatum</i>	Yellow	6	L/M	Can be used in restoration and stream stabilization projects.
	14 Saltmarsh baccharis	<i>Baccharis douglasii</i>	White	3	M/H	Important nectar source for many species of wasps, butterflies, and flies.
Fall	15 California goldenbush	<i>Ericameria ericoides</i>	Yellow	3	L/M	Great late season nectar source for bees and butterflies.
Fall to Winter	16 Coyotebrush	<i>Baccharis pilularis</i>	Yellow/white	8	L	Easy to grow and extremely drought-tolerant. Attractive to many insects.
Fall to Summer	17 Bladderpod spiderflower	<i>Cleome isomeris</i>	Yellow	4	L	Tolerates salt spray. Also attracts bees.
Winter	18 Desertbroom	<i>Baccharis sarothroides</i>	Pink/white	10	L	Can be used for streambank stabilization.
Winter to Spring	19 Arroyo willow	<i>Salix lasiolepis</i>	Yellow/white	20	H	Tolerates sand and seasonal flooding; good for erosion control. Important wildlife plant.
	20 Hollyleaf cherry	<i>Prunus ilicifolia</i>	Yellow/white	14	L	Fruits eaten by many birds and small mammals.
	21 Morro manzanita	<i>Arctostaphylos morroensis</i>	Pink/white	20	L	Limited distribution. On CA rare/threatened/endangered list.
	22 Refugio manzanita	<i>Arctostaphylos refugioensis</i>	White	7	L	Limited distribution. On CA rare/threatened/endangered list.
	23 Sugar sumac	<i>Rhus integrifolia</i>	Pink	8	L/M	Good for erosion control on coastal bluffs. Fruits are eaten by birds and other wildlife.
Winter to Summer	24 California brittlebush	<i>Encelia californica</i>	Yellow	4	L/M	Tolerates salt spray. Can be used to stabilize slopes. Good bee and butterfly plant.



Planting for Success

Monarch nectar plants often do best in open, sunny sites. You can attract more monarchs by planting flowers in single species clumps and choosing a variety of plants that have overlapping and sequential bloom periods. Monarchs are typically present from September through March in coastal California, but can be present year-round. Providing nectar plants that bloom from fall through early spring will be important for overwintering monarchs in the region.

Why Plant Native?

Although monarchs use a variety of nectar plant species, including exotic invasives such as ice plant and cape ivy, we recommend planting native species. Native plants are often more beneficial to ecosystems, are adapted to local soils and climates, and help promote biological diversity. They can also be easier to maintain in the landscape, once established.

Tropical milkweed is a non-native plant that is widely available in nurseries. This milkweed can persist year-round in mild climates, allowing monarchs to breed throughout the winter rather than going into diapause. Tropical milkweed may foster higher loads of a monarch parasite called *Oe* (*Ophryocystis elektroscirrha*), which negatively impacts monarch health. Because of these implications, the Xerces Society does not recommend planting milkweed adjacent to overwintering sites or in areas where the plant did not historically occur. You can read more about *Oe* in a fact sheet by the Monarch Joint Venture: http://monarchjointventure.org/images/uploads/documents/Oe_fact_sheet.pdf.

Protect Monarchs from Pesticides

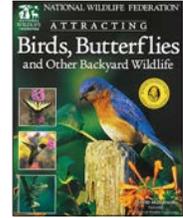
Both insecticides and herbicides can be harmful to monarchs. Herbicides can reduce floral resources and host plants. Although dependent on timing, rate, and method of application, most insecticides have the potential to poison or kill monarchs and other pollinators. Systemic insecticides, including neonicotinoids, have received significant attention for their potential role in pollinator declines (imidacloprid, dinotefuran, clothianidin, and thiamethoxam are examples of systemic insecticides now found in various farm and garden products). Because plants absorb systemic insecticides as they grow, the chemicals become distributed throughout all plant tissues, including the leaves and nectar. New research has shown that some neonicotinoids are toxic to monarch caterpillars that are poisoned as they feed on leaf tissue of treated plants. You can help protect monarchs by avoiding the use of these and other insecticides. Before purchasing plants from nurseries and garden centers, be sure to ask whether they have been treated with systemic insecticides. To read more about threats to pollinators from pesticides, please visit: www.xerces.org/pesticides.

Additional Resources

Gardening for Butterflies



Attracting Birds, Butterflies, and Other Backyard Wildlife



Available through www.xerces.org/books and <http://bit.ly/1Xhxfgu>.

Conservation Status and Ecology of the Monarch Butterfly in the U.S. Report

www.xerces.org/us-monarch-consv-report

Guide to Milkweeds and Monarchs in the Western U.S.

www.xerces.org/western-us-monarch-guide

Review of Laws and Regulations Affecting California Monarch Habitat

www.xerces.org/ca-monarch-legal-status

Milkweed Seed Finder

www.xerces.org/milkweed-seed-finder

Websites

The Xerces Society www.xerces.org/monarchs

Monarch Joint Venture

www.monarchjointventure.org/resources

Natural Resources Conservation Service

www.nrcs.usda.gov/monarchs

National Wildlife Federation www.nwf.org/butterflies

Citizen Science Efforts in California

Xerces Society Western Monarch Thanksgiving Count

www.westernmonarchcount.org

Xerces Society & USFWS Milkweed and Monarch Survey

www.xerces.org/milkweedsurvey

Journey North www.learner.org/jnorth/monarch

Monarch Larva Monitoring Project www.mlmp.org

Project Monarch Health www.monarchparasites.org

Acknowledgements

Nectaring data and observations, background information, and other contributions to this publication were taken from the published literature and generously provided by multiple researchers, gardeners, partners, and biologists. For the full list of data sources, please visit our website: www.xerces.org/monarch-nectar-plants. Funding provided by the Monarch Joint Venture and USDA Natural Resources Conservation Service. Additional support comes from Cascadian Farm, Ceres Trust, Cheerios, CS Fund, Disney Conservation Fund, The Dudley Foundation, The Edward Gorey Charitable Trust, Gaia Fund, General Mills, Hind Foundation, National Co-op Grocers, Nature Valley, Turner Foundation, Inc., Whole Foods Market and its vendors, and Xerces Society Members.

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This material is based upon work supported by the Natural Resources Conservation Service, U.S. Department of Agriculture, under number 65-7482-15-118. Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the views of the U.S. Department of Agriculture.