POLLINATOR PLANTS

California

Pollinator meadow, common sunflower, and baby blue eyes

California is one of the most floristically diverse regions in the world, with a high number of endemic species and many unique plant communities such as coastal prairie and scrub, valley grasslands, chaparral, oak woodlands, and giant sequoia groves. California's native plants support a corresponding diversity of pollinators, with an estimated 1,200–1,500 native bee species, including the imperiled Franklin's bumble bee (*Bombus franklini*) and the vulnerable western bumble bee (*B. occidentalis*), and over 200 butterfly species, including the iconic monarch butterfly (*Danaus plexippus*). As a group, these and other pollinators maintain healthy, productive plant communities, provide food that sustains wildlife, and play an essential role in crop production.

Providing wildflower-rich habitat is the most significant action you can take to support pollinators. Adult bees, butterflies, and other pollinators require nectar as their primary food source, and female bees collect pollen as food for their offspring. Native plants, which are adapted to local soils and climates, are usually the best sources of nectar and pollen for native pollinators. Incorporating native wildflowers, shrubs, and trees into any landscape promotes local biological diversity and provides shelter and food for a diversity of wildlife. Most natives require minimal irrigation, flourish without fertilizers, and are unlikely to become weedy.

This guide features California natives that are highly attractive to pollinators and are well-suited for small-scale plantings in gardens, urban greenspaces, and farm field borders, and on business and school campuses. Beyond supporting native bees and honey bees, many of these plants attract nectar-seeking butterflies, moths, and hummingbirds, and some are hosts for butterfly and moth caterpillars. For example, California is an important breeding area for monarch butterflies, and planting milkweeds, their required host plants, will help sustain the declining western monarch population. With few exceptions, the listed species can be purchased as seed or transplants. They will be adaptable to growing conditions across most of the state, but may be less suitable for planting in the High Sierras, Modoc Plateau, and Eastern Interior Desert regions. Please consult Calflora (www.calflora.org), the Biota of North America's North American Plant Atlas (http://bonap.net/napa), or the USDA's PLANTS database (http://plants.usda.gov) for details on species's distributions in your area.

Our **Bring Back the Pollinators** campaign is based on four principles:

1. **Grow** a variety of pollinator-friendly flowers;
2. **Protect and provide** bee nest sites and caterpillar host plants;
3. **Avoid** using pesticides, especially insecticides; *and*
4. **Spread** the word!

You can participate by taking the **Pollinator Protection Pledge** and registering your habitat on our nationwide map at: www.bringbackthepollinators.org.

BRING BACK THE POLLINATORS
A Xerces Society Conservation Campaign

XERCES SOCIETY
for Invertebrate Conservation


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Bloom Period		Common Name	Scientific Name	Life Cycle*	Flower Color	Max. Height†	Water Needs
		Forbs				(Feet)	L: low; M: medium; H: high
Early	1	Baby blue eyes	*Nemophila menziesii*	A	blue	0.25	L
	2	Common tidytips	*Layia platyglossa*	A	yellow	0.25	L
	3	Lacy phacelia	*Phacelia tanacetifolia*	A	purple	3	L
Early–Mid	4	California poppy	*Eschscholzia californica*	A, P	orange	0.5	L
	5	Elegant clarkia	*Clarkia unguiculata*	A	pink	0.5	L
	6	Globe gilia	*Gilia capitata*	A, P	blue	1	M
Mid	7	California phacelia	*Phacelia californica*	P	purple	1	L
	8	Cleveland sage	*Salvia clevelandii*	P	purple	3	L
	9	Foothill penstemon	*Penstemon heterophyllus*	P	blue	3	L
	10	Narrowleaf milkweed	*Asclepias fascicularis*	P	pink/ white	1.5	M
	11	Summer lupine	*Lupinus formosus*	P	purple	1.5	L
Mid–Late	12	Common sunflower	*Helianthus annuus*	A	yellow	5	M
	13	Gumplant	*Grindelia camporum*	P	yellow	4	L
Late	14	California aster	*Symphyotrichum chilense*	P	purple	5	L
	15	California fuchsia	*Epilobium canum*	P	orange/ red	3	L
	16	California goldenrod	*Solidago velutina* ssp. *califonica*	P	yellow	3	M
		Shrubs and Trees					
Early	21	California lilac	*Ceanothus* 'Concha'	P	purple	4	L
	22	McMinn manzanita	*Arctostaphylos* 'McMinn'	P	white	5	L
	23	Oregon grape	*Berberis aquifolium*	P	yellow	5	L
		Redbud	*Cercis occidentalis*	P	pink/red	15	M
		California buckthorn	*Rhamnus californica*	P	white	5	L
Early–Mid		California flannelbush	*Fremontodendron californicum*	P	yellow	15	L
		Silver bush lupine	*Lupinus albifrons*	P	purple	3	L
Mid	24	California buckwheat	*Eriogonum fasciculatum*	P	white	2.5	L


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This list of pollinator plants for California was produced by the Xerces® Society.
For more information about pollinator conservation, please visit www.xerces.org.

*Life Cycle abbreviations: A: annual; P: perennial; B: biennial. †Max. Height is an average, individual plants may vary.

Notes
Stunning sky blue flowers attract native bees, including mason bees (*Osmia* spp.); tolerates moderate shade and moisture
Sunny yellow and white flowers are very attractive to butterflies and native bees; tolerates clay soils
Easy to establish, with prolific, showy blooms; tolerates clay soils
Easy to establish and long blooming; attracts a diversity of bees, bumble bees in particular
Strikingly unique flowers attract bees and butterflies; larval host for Clark's sphinx moth
Globe-shaped, periwinkle-blue flower clusters attract a diversity of bees and butterflies
Tightly coiled flower heads are very attractive to bumble bees and other native bees; tolerates clay soils
Showy flowers attract bees, butterflies, and hummingbirds; extremely fragrant foliage; requires good drainage
Iridescent violet flowers attract bees, butterflies, and hummingbirds; requires good drainage; heat and drought tolerant
Monarch butterfly host plant; high-quality nectar source for many bees; easier to establish from transplants than from seed
This and other lupines are highly attractive to bumble bees and visited by many other native bees
Sunflowers are a favorite of many bee species; easy to establish and tolerant of clay soils
Long-lasting flowers; attracts small, native bees; tolerates clay soils and wet or dry conditions
One of the latest fall blooming plants; important for pre-hibernation bumble bee queens; tolerates clay soils
Abundant scarlet-colored flowers; critical late-season nectar source for hummingbirds and bees
Important late-season forage for bees, butterflies, beneficial solitary wasps, pollen-eating soldier beetles, and more
Attracts bees and butterflies with a profusion of bright violet-blue flowers; tolerates clay soils
Clusters of small, bell-shaped flowers provide early season forage for bumble bees and other spring bees; tolerates clay soils
Attracts honey bees and native bees, including mason bees (*Osmia* spp.); tolerates shade and wet or dry conditions
Rose-colored blooms clustered on bare branches; tolerates some shade and moisture; can be pruned to a shrub or small tree
Attractive, evergreen shrub that attracts small, native bees; its berries are a favorite of birds; tolerates some shade
Prolific bloomer with large, bell-shaped yellow flowers; does not need summer water
Showy, deep purple flowers with contrasting silver foliage; attracts numerous bee species; requires good drainage
Favored nectar source of many blue and hairstreak butterflies, also very attractive to native bees; drought tolerant


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Planting for Success

Sun Exposure

Most pollinator-friendly plants prefer sites that receive full sun throughout most of the day and are mostly open, with few large trees. A southern exposure can provide the warmest habitat, but is not required.

Plant Diversity

Choosing a variety of plants with overlapping and sequential bloom periods will provide food for pollinators throughout the seasons.

Habitat Size and Shape

Habitat patches that are bigger and closer to other patches are generally better than those that are smaller and more isolated from one another. However, even a small container garden can attract and support pollinators!

Planting Layout

Flowers clustered into clumps of one species will attract more pollinators than individual plants scattered through a habitat patch. Where space allows, plant clumps of the same species within a few feet of one another.

Seeds or Transplants

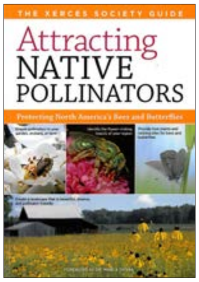
It is usually cheaper to establish large habitat areas from seed; however, seeding native wildflowers on a large-scale is an art unto itself. For step-by-step instructions, see *Establishing Pollinator Meadows from Seed* and the Pollinator Habitat Installation Guides listed in the Additional Resources section. For smaller areas like gardens, transplants are usually easier to use and will bloom faster than plants started from seed.

Protect Pollinators from Insecticides

Although dependent on timing, rate, and method of application, all insecticides have the potential to poison or kill pollinators. Systemic insecticides in particular 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 plant tissues and are sometimes present in pollen and nectar. You can help protect pollinators 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 insecticides. To read more about threats to pollinators from pesticides, please visit: www.xerces.org/pesticides.

Additional Resources

Attracting Native Pollinators



Our best-selling book highlights the role of native pollinators in natural ecosystems, gardens, and farms. This comprehensive guide includes information about pollinator ecology, detailed profiles of over 30 common bee genera, and habitat designs for multiple landscapes with over 50 pages of fully illustrated regional plant lists. Available in bookstores everywhere, and through www.xerces.org/books.

The Xerces Pollinator Conservation Resource Center

Our Pollinator Conservation Resource Center includes regional information on pollinator plants, habitat conservation guides, nest management instructions, bee identification and monitoring resources, and directories of native pollinator plant nurseries.
www.xerces.org/pollinator-resource-center

Lady Bird Johnson Wildflower Center

The Xerces Society has collaborated with the Lady Bird Johnson Wildflower Center to create lists of plants that are attractive to native bees, bumble bees, honey bees, and other beneficial insects, as well as plant lists with value as nesting materials for native bees. These lists can be narrowed down with additional criteria such as state, soil moisture, bloom time, and sunlight requirements. The Center's website also features image galleries, how-to articles on native plant gardening, and more.
www.wildflower.org/conservation_pollinators

Establishing Pollinator Meadows from Seed

These guidelines provide step-by-step instructions for establishing pollinator meadows from seed in areas that range in size from a small backyard garden up to an acre. Topics include: site selection, site preparation, plant selection, planting techniques, and ongoing management.
www.xerces.org/establishing-pollinator-meadows-from-seed

Pollinator Habitat Installation Guides

These regional guidelines, developed in collaboration with the USDA's Natural Resources Conservation Service, provide in-depth practical guidance on how to install nectar and pollen habitat for bees in the form of wildflower meadow plantings or linear rows of native flowering shrubs. Region-specific seed mixes and plant recommendations are included in the appendices of each guide.
www.xerces.org/pollinator-habitat-installation-guides

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