

CONSENT CALENDAR

April 12, 2022

To: Honorable Mayor and Members of the City Council

From: Councilmember Terry Taplin

Subject: Native and Drought Resistant Plants and Landscaping Policy Update

RECOMMENDATION

Adopt a Resolution amending the Native Species/Bay-Friendly Landscaping Policy to require, when appropriate, the prioritization of native, non-invasive, and pollinator friendly plantings on City property.

POLICY COMMITTEE RECOMMENDATION

On March 9, 2022, the Facilities, Infrastructure, Transportation, Environment & Sustainability Policy Committee adopted the following action: M/S/C (Robinson/Taplin) to forward the item to Council with a positive recommendation. Vote: Ayes – Taplin, Robinson; Noes – None; Abstain – None; Absent – Harrison.

BACKGROUND

As of the summer of 2021, the City of Berkeley and most of California are facing exceptional drought conditions.¹ The region's drought conditions have varied annually in the past decade, but the projects for our future under climate change are clear: California's drought will as much as triple in severity by 2050.² Drought conditions have escalated so radically that the East Bay Municipal Utility District asked residents to cut back on their water consumption.³ The City must plan for a future in which it operates successfully with significantly reduced water use and should begin using water more efficiently as soon as possible.

To plan for a long-term urban infrastructure that consumes water in a manner that reflects the drought conditions that we are certain to face in the next century, Berkeley can pursue a policy of only using native and drought-resistant plant materials in all City landscaping and public areas. While a relatively less significant consumer of water than residential and commercial buildings, the opportunity to save water by switching all City

¹ <https://www.drought.gov/states/california/county/Alameda>

² <https://statesatrisk.org/california/all>

³ <https://www.berkeleyside.org/2021/04/27/east-bay-area-water-officials-declare-drought-ask-residents-to-conserve-water>

landscaping to native and drought resistant plants is immense. In addition to requiring less watering, native plant landscaping has been shown to have higher infiltration rates of water runoff, taking in water that would otherwise be discharged into sewers and filtering toxic materials before they reach the waterfront. Native plants also provide critical food and habitat for local birds and pollinators.⁴ While the use of native plants would already be helpful for supporting pollinators, special consideration should also be given to the most pollinator-friendly plants. Supporting pollinators has shown to result in stronger local biodiversity.⁵ Furthermore, native plants that are already adapted to our local environment are more resistant to extreme weather and often do not require pesticide and fertilizer use.⁶

In 2008 and 2009, the City Council partnered with the Parks and Recreation Commission to develop the “Bee Habitats and Pollinator-Friendly Vegetation Policy” by way of Resolution No. 64,376-N.S. as well as the “Bay-Friendly Landscaping Policy for City Projects” policy in Resolution No. 64,507-N.S. These policies encouraged the use of native, pollinator-friendly vegetation in city projects and plantings that reduce waste and maintenance costs, respectively. While these policies have been useful in the decade-plus that they’ve been in effect, it is time for Berkeley to update its planting policies to renew our commitment to creating a drought-resistant and pollinator-friendly urban ecology that uses native plants as much as reasonably possible.

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS

Increased use of native, drought resistant, and pollinator-friendly plants on City property will make major strides towards increased urban biodiversity, reduced water usage in the maintenance of public lands, and increased resiliency of plantings on City property to extreme weather conditions.⁷

FINANCIAL IMPLICATIONS

Staff time and cost differences related to the exclusive use of native and drought-resistant plantings in City landscaping work. Increased use of native and drought resistant plants may lead to reduced landscaping maintenance work related to a reduced need for pesticides, fertilizers, and extra watering that non-native plants often require.⁸ Furthermore, the overall reduced maintenance requirements of native plantings will save the City on landscaping labor costs.

CONTACT

Terry Taplin, Councilmember, District 2, (510) 981-7120

ATTACHMENTS

1. Resolution
2. Resolution No. 64,376-N.S.

⁴ <https://law.pace.edu/sites/default/files/Team%20%233%20Brief.pdf>

⁵ https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/plantsanimals/pollinate/?cid=NRCS143_022326

⁶ <https://perma.cc/FK54-B7L7>

⁷ <https://sustainablecitycode.org/brief/require-use-of-native-plants/>

⁸ <https://sustainablecitycode.org/brief/require-use-of-native-plants/>

3. Resolution No. 64,507-N.S
4. Easy to Grow East Bay Native Plant List
5. California Pollinator Plants

RESOLUTION NO. ##,###-N.S.

REQUIRING NATIVE & DROUGHT RESISTANT PLANTS IN ALL CITY
LANDSCAPING

WHEREAS, the City of Berkeley and the State of California are facing historic drought conditions that are projected to worsen over the course of the next half century or more, and

WHEREAS, the City of Berkeley must adapt its operations to future climate conditions characterized by excessive dryness, extreme weather, and declining populations of pollinators and other local wildlife, and

WHEREAS, the use of native plants in City landscaping offers an opportunity for less water-intensive landscaping throughout Berkeley, and

WHEREAS, native plants intake and filter toxic water runoff more easily than non-native landscaping, and

WHEREAS, native plants provide critical food and habitat for native animals and pollinators that are at risk under future climate conditions, and

WHEREAS, pollinator-friendly plants provide a natural boost to local biodiversity, and

WHEREAS, the costs of native plant landscaping may reduce overall landscaping costs due to a decreased need for pesticides and fertilizers, and

WHEREAS, Resolution No. 64,376-N.S. can be updated with biodiversity goals.

NOW THEREFORE, BE IT RESOLVED that the guidelines for Native Species/Bay-Friendly Landscaping Policy For Enhanced Biodiversity on City Property described in Exhibit A are hereby be adopted, and Resolution No. 64,376-N.S. is rescinded.

EXHIBIT A

GUIDELINES FOR NATIVE SPECIES/BAY-FRIENDLY
LANDSCAPING POLICY FOR ENHANCED BIODIVERSITY ON CITY PROPERTY

Policy Statement: To combat the critical loss of biodiversity in Berkeley and globally due to modern development and climate change, the City shall use the following guidelines for planning and implementing native plant and Bay-Friendly landscape maintenance and vegetation planting improvements on City property (City parks, open spaces, and Right-of-Way planting strips) in order to enhance biodiversity.

1. Use of native plant species that support bees and other lifeforms and are appropriate to our environment when possible; use a diversity of the flowering shrubs, perennials, herbs, grasses, and small trees that bloom successively to produce the leaves, pollens and nectars that attract bees, other pollinators, insects, birds, and leaf-chewing creatures with an emphasis on those that support local species and ecosystem; and to the greatest extent possible, use plants and trees that are low to moderate in their allergenic properties, low water use and drought-tolerant, and higher in insect and bird habitat potential. No species that are invasive in the Berkeley climate shall be used.
1. Control non-native plants and weeds that crowd out native plants that provide higher habitat value for biodiversity.
2. Strive to plant pollinator-friendly vegetation in areas of lower user density away from children's play area, restrooms, picnic tables, barbeques, refuse containers, and other park facilities where bee sting risk is greater due to normal visitor use patterns.
3. For street trees, the City seeks to plant Bay Area and California native tree species that support other life forms where available growing space and/or native conditions exist, including streets, open space, parks, and Right-of-Way planting areas. In both dense urban areas and park spaces with irrigated turf, where very little native soil and water conditions remain, a diverse range of appropriate tree species shall be used that meet the following requirements: that perform successfully in small planting sites with poor soils and above and below ground constraints; that attain appropriate sizes at maturity; that exhibit safe and manageable growth patterns; that enhance biodiversity; that are drought tolerant; that build climate resilience into the urban forest; and that contribute to the City's Climate Action Goals.

RESOLUTION NO. 64,376-N.S.

POLICY: BEE HABITATS AND POLLINATOR-FRIENDLY VEGETATION

WHEREAS, on July 22, 2008, the Berkeley City Council referred to the Parks and Recreation Commission the research and development of policies and practices that promote bee habitats and pollinator-friendly vegetation in appropriate parks and open spaces and requested that they return with specific recommendations; and

WHEREAS, on February 23, 2009 at the Parks and Recreation Commission meeting, it was motioned, seconded, and carried (Huang/Chavez/unanimous) to recommend that Berkeley City Council adopt the attached Bee Habitats and Pollinator-friendly Vegetation Policy for use in planning and implementing landscape improvements in City parks and open spaces. Ayes: Becker, Gross, Gray, Huang, Chavez, Collier; Abstain: 0; Absent: Stephens; and

WHEREAS, planning and implementing landscape improvements in City parks and open spaces should also include parks that do not include Bee Habitats; and

WHEREAS, there are no fiscal impacts related to the proposed policy.

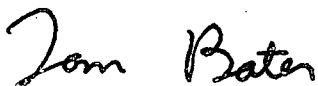
NOW THEREFORE, BE IT RESOLVED that the Council of the City of Berkeley adopts the attached Bee Habitats and Pollinator-friendly Vegetation Policy for use in planning and implementing landscape improvements in City parks and open spaces.

The foregoing Resolution was adopted by the Berkeley City Council on March 24, 2009 by the following vote:


Ayes: Anderson, Arreguin, Capitelli, Maio, Moore, Wengraf, Worthington, Wozniak and Bates.

Noes: None.

Absent: None.



Tom Bates, Mayor

Attest: 

Deanna Despain, Acting City Clerk

BEE HABITATS AND POLLINATOR-FRIENDLY VEGETATION POLICY

Policy Statement: for Use In Planning and Implementing Landscape Improvements at City Parks and Open Spaces

To support habitat preservation and development for bees and other pollinators, the Parks & Recreation Commission recommends the following guidelines in planning and implementing landscape maintenance and vegetation planting improvements in City parks and open spaces.

1. Use native plants where appropriate; use a diversity of the flowering shrubs, herbs, grasses, and small trees that bloom successively to produce the pollens and nectars that attract bees and other pollinators; and to the greatest extent possible, use plants and trees that are low to moderate in their allergenic properties.
2. Control the non-native plants and weeds that crowd out the native plants that provide habitat for bees and other pollinators.
3. Focus the planting of pollinator-friendly vegetation in lower density usage areas at least 30' away from children's play areas, restrooms, picnic tables, barbecues, refuse containers, and other park facilities where bee sting risk is greater due to normal visitor use patterns.
4. Use the Parks, Recreation & Waterfront webpage on the City of Berkeley website and temporary signage in parks to explain to the public how landscape maintenance and vegetation improvements in City parks and open spaces are planned to support habitat preservation and development for bees and other pollinators.
5. Consider the following park and open space sites for pollinator-friendly vegetation improvements due to existing native plantings and larger areas available for new plantings of flowering native plants. This is a suggested list only.

Cesar Chavez Park
 Live Oak Park
 Codornices Park/Rose Garden
 Ohlone Park

Aquatic Park
 Indian Rock Park
 John Hinkel Park
 Grotto Rock Park

RESOLUTION NO. 64,507-N.S.

BAY-FRIENDLY LANDSCAPING POLICY FOR CITY PROJECTS

WHEREAS, the City finds that conventional landscaping within the City can contribute to environmental degradation, excessive consumption of fossil fuels, landfill waste and pollution; and

WHEREAS, the City finds that green landscaping is a whole-systems approach that seeks to conserve natural resources, reduce waste, minimize water and pesticide use, storm water runoff and watershed pollution; and

WHEREAS, the City finds that the benefit of green landscaping include minimized maintenance, the creation of wildlife habitat, protection of local ecosystems though the use of native plant species, and the protection of the San Francisco Bay watershed; and

WHEREAS, in Alameda County, the organization StopWaste.Org has taken the lead in defining and promoting environmentally friendly landscaping for the commercial, institutional and residential sectors and has developed Bay-Friendly Landscape Guidelines for professional landscapers and the Bay-Friendly Gardening Guide for residents that promotes green landscaping; and

WHEREAS, the City finds that requiring new City landscapes and City projects to incorporate Bay-Friendly Landscape Guidelines is necessary and appropriate to achieving the benefits of green landscaping in the City; and

WHEREAS, the Alameda County Waste Management Authority requires cities to adopt a Bay-Friendly Landscape Policy for new municipal landscape and major landscape renovations as a condition of receiving grants and services valuable to the City.

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Berkeley that the City Manager is authorized to implement a Bay-Friendly Landscaping (BFL) Policy (Exhibit A) for City Projects, and for the Director of Public Works to designate a BFL Compliance Official.

The foregoing Resolution was adopted by the Berkeley City Council on June 23, 2009 by the following vote:


Ayes: Anderson, Arreguin, Capitelli, Maio, Moore, Wengraf, Worthington, Wozniak and Bates.

Noes: None.

Absent: None.



Tom Bates, Mayor

Attest: 

Deanna Despain, CMC, City Clerk

EXHIBIT A

BAY-FRIENDLY LANDSCAPING POLICY

PURPOSE AND INTENT

To promote economic and environmental health in the City, it is essential that the City itself, through the design, construction, and maintenance of its own projects, provide leadership to both the private and public sectors by incorporating Bay-Friendly landscaping practices. One immediate and meaningful way to do this is to require the integration of Bay-Friendly landscaping strategies in City projects.

DEFINITIONS

"Bay-Friendly Landscape Guidelines" means the most recent version of guidelines developed by StopWaste.Org for use in the professional design, construction and maintenance of Landscapes. City staff shall maintain the most recent version of the Bay-Friendly Guidelines at all times.

"Bay-Friendly Landscaping Scorecard" means the most recent version of the Bay-Friendly Landscaping points system developed by StopWaste.Org. City staff shall maintain the most recent version of the Bay-Friendly Landscaping Scorecard at all times.

"City Landscape Project" means any new construction or renovation of a Landscape owned or maintained by a City Department or Agency.

"Covered Project" means all new or redevelopment or Renovation projects that include Landscapes that equal or exceed 10,000 square feet, and are owned or maintained by a City Department or Agency

"Bay-Friendly Landscaping Compliance Official" means the designated staff person(s) authorized and responsible for implementing this Policy.

"Initiated" means officially identified and substantially funded to offset the costs associated with the project.

"Landscape" means the parcel area less the building pad and includes all planted areas and hardscapes (i.e. driveway, parking, paths and other paved areas).

"Renovation" means any change, addition, or modification to an existing Landscape.

Traditional Public Works Projects" means heavy construction projects such as pump stations, flood control improvements, roads, and bridges, as well as traffic lights, sidewalks, bike paths, bus stops, and associated infrastructure on City owned and maintained property.

STANDARD FOR COMPLIANCE

1. All Covered Projects with landscapes initiated on or after August 1, 2009 shall meet the most recent minimum Bay Friendly Landscape Scorecard points as recommended and verified by StopWaste.Org or its designee.

2. For the purposes of reducing operation and maintenance costs in all City facilities, Covered Projects that do not meet the threshold that triggers compliance with the requirements of this Policy are required to meet as many Bay-Friendly Landscaping Scorecard points as practicable and are required to complete and submit the Bay-Friendly Landscaping Scorecard to StopWaste.Org as a way of documenting the green building practices that have been incorporated into the project.
3. The Public Works Department shall regularly review the project specifications used in bidding Traditional Public Works Projects and building or facilities projects to include environmentally friendly practices and Bay-Friendly landscape practices applicable.
4. Bay-Friendly landscaping requirements will be incorporated into the appropriate design, construction, maintenance and development agreement documents prepared for the applicable Covered Projects
5. The Director of Public Works shall designate an appropriate Bay-Friendly Landscaping Compliance Official(s) who shall have the responsibility to administer and monitor compliance with the Bay-Friendly landscaping requirements set forth in this Policy, and to grant waivers or exemptions from the requirements.
6. The Bay-Friendly Landscaping Compliance Official will coordinate activities with the person(s) responsible for implementation of the City's Environmental Purchasing Policy

UNUSUAL CIRCUMSTANCES

Compliance with the provisions of this Policy may be waived in unusual circumstances where the City Council has, by resolution, found and determined that the public interest would not be served by complying with such provisions.

Easy to Grow East Bay Native Plant List (by Habitat)

Developed by Glen Schneider and Lyn Talkovsky
Permission to use provided by The Watershed Project

Grassland Plants (plants for sunny sites with clay or silty soils)

Trees and Shrubs

Baccharis pilularis
Quercus agrifolia

Coyote Bush
Coast Live Oak

Perennials, Bulbs and Grasses

Achillea millefolium
Artemisia douglasiana
Aster sp.
Astragalus sp.
Bromus carinatus
Camissonia ovata
Chloragalum pomeridianum
Dichelostemma capitatum
Epilobium canum
Festuca idahoensis
Deschampsia caespitosa
Danthonia californica
Elymus glaucus
Grindelia hirsutula
Iris douglasiana
Melica californica
Nassella lepida
Nassella pulchra
Phacelia californica
Perideridia kelloggii
Ranunculus californicus
Sisyrinchium bellum
Triteleia laxa
Wyethia augustifolia

Yarrow
Mugwort
Native Aster
Native Vetch(es)
California Brome
Sun Cups
Soap Lily
Blue Dicks
California Fuschia
Idaho Fescue
Coastal Hair Grass
Wild Oat Grass
Blue Wild Rye
Gum Plant
Douglas Iris
Melic Grass
Foothill Needlegrass
Purple Needlegrass
California Coast Phacelia
Kellogg's Yampah
Buttercup
Blue-eyed Grass
Ithuriel's Spear
Mule's Ears

Annuals

Clarkia amoena
Eschscholzia californica
Hemizonia sp.

Farewell to Spring
California Poppy
Tarweed(s)

Scrubland Plants (plants for sites with hot sun and well-drained soils)Trees and Shrubs

<i>Adenostema fascicularis</i>	Greasewood or Chamise
<i>Arctostaphylos glandulosa</i> ssp. <i>glandulosa</i>	Eastwood Manzanita
<i>Arctostaphylos manzanita</i> ssp. <i>manzanita</i>	Manzanita
<i>Arctostaphylos tomentosa</i> ssp. <i>crustacea</i>	Manzanita
<i>Artemisia californica</i>	Coastal Sagebrush
<i>Baccharis pilularis</i>	Coyote Bush
<i>Ceanothus thyrsiflorus</i>	California Lilac/Blue Blossom
<i>Heteromeles arbutifolia</i>	Toyon
<i>Rhamnus californica</i>	Coffeeberry

Perennials and Grasses

<i>Epilobium canum</i>	California Fuchsia
<i>Eriogonum roseum</i>	Rosy Buckwheat
<i>Eriogonum nudum</i>	Buckwheat
<i>Eriophyllum confertiflorum</i>	Golden Yarrow
<i>Festuca idahoensis</i>	Idaho Fescue
<i>Mimulus aurantiacus</i>	Sticky Monkeyflower

Woodland Plants (plants for sites with part sun to full shade)Trees

<i>Acer macrophyllum</i>	Big Leaf Maple
<i>Aesculus californica</i>	California Buckeye
<i>Quercus kelloggii</i>	Black Oak
<i>Quercus lobata</i>	Valley Oak
<i>Umbellularis californica</i>	California Bay

Shrubs

<i>Corylus cornuta californica</i>	California Hazelnut
<i>Heteromeles arbutifolia</i>	Toyon
<i>Holodiscus discolor</i>	Ocean Spray
<i>Physocarpus capitatus</i>	Ninebark
<i>Ribes sanguineum</i> var. <i>glutinsum</i>	Pink Flowering Currant
<i>Rhamnus californica</i>	Coffeeberry
<i>Rosa gymnocarpa</i>	Wood Rose
<i>Symphoricarpos albus</i>	Snowberry

<i>Symphoricarpos mollis</i>	Creeping Snowberry
<i>Sambucus mexicana</i>	Blue Elderberry
<u>Perennials and Grasses</u>	
<i>Aquilegia formosa</i>	Red Columbine
<i>Aristolochia californica</i>	Dutchman's Pipe
<i>Artemisia douglasiana</i>	Mugwort
<i>Aster</i> sp.	Native Aster
<i>Bromus carinatus</i>	California Brome
<i>Chlorogalum pomeridianum</i>	Soap Lily
<i>Clematis lasiantha</i>	Pipestems
<i>Cynoglossum grande</i>	Hound's Tongue
<i>Dryopteris arguta</i>	Coastal Wood Fern (deep shade)
<i>Iris douglasiana</i>	Douglas Iris
<i>Festuca californica</i>	California Fescue
<i>Fragaria vesca</i>	Woodland Strawberry
<i>Heracleum lanatum</i>	Western Lace Plant
<i>Lonicera hispidula</i>	Honeysuckle
<i>Melica torreyana</i>	Torrey Melic Grass
<i>Polystichum munitum</i>	Western Sword Fern
<i>Polypodium glycyrrhiza</i>	Licorice Fern
<i>Rubus ursinus</i>	Western Blackberry
<i>Sanicula crassicaulis</i>	Pacific Sanicle
<i>Scrophularia californica</i>	Bee Plant
<i>Stachys</i> sp.	Hedge Nettle
<i>Urtica urens</i>	Dwarf Nettle

Riparian Plants (plants for sites with year-round moisture in the soil):

Trees

<i>Acer macrophyllum</i>	Big Leaf Maple
<i>Aesculus californica</i>	California Buckeye
<i>Alnus rhombifolia</i>	White Alder
<i>Platanus racemosa</i>	Western Sycamore
<i>Sequoia sempervirens</i>	Coastal Redwood
<i>Umbellularium californica</i>	California Bay

Shrubs

<i>Cornus stolonifera</i>	Creek Dogwood
<i>Rosa californica</i>	California Rose
<i>Salix lasiolepis</i>	Arroyo Willow
<i>Symphoricarpos albus</i>	Snowberry

Perennials, Rushes, Sedges and Ferns

Aralia californica
Athyrium felix-femina
Carex tumulicola
(Perennials... cont'd)

Elk Clover
Lady Fern
Berkeley Sedge

Equisetum sp.
Helenium puberulum
Juncus effusus
Mimulus guttatus
Rubus parviflorus
Rubus ursinus
Vitis californica
Woodwardia fimbriata

Horsetail
Sneezeweed
Rush
Creek Monkeyflower
Thimble Berry
California Blackberry
California Grape
Giant Chain Fern

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.





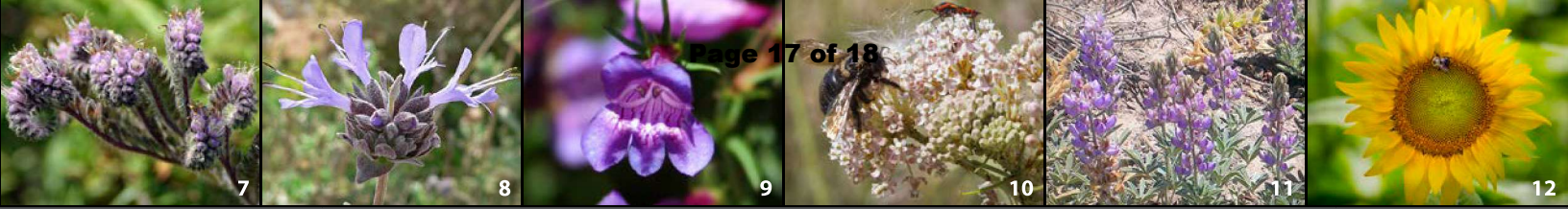
Bloom Period	Common Name	Scientific Name	Life Cycle*	Flower Color	Max. Height†	Water Needs
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		Forbs			(Feet)	L: low; M: medium; H: high	
Early	1	Baby blue eyes	<i>Nemophila menziesii</i>	A	blue	0.25	L
	2	Common tidytips	<i>Layia platyglossa</i>	A	yellow	0.25	L
	3	Lacy phacelia	<i>Phacelia tanacetifolia</i>	A	purple	3	L
Early–Mid	4	California poppy	<i>Eschscholzia californica</i>	A, P	orange	0.5	L
	5	Elegant clarkia	<i>Clarkia unguiculata</i>	A	pink	0.5	L
	6	Globe gilia	<i>Gilia capitata</i>	A, P	blue	1	M
Mid	7	California phacelia	<i>Phacelia californica</i>	P	purple	1	L
	8	Cleveland sage	<i>Salvia clevelandii</i>	P	purple	3	L
	9	Foothill penstemon	<i>Penstemon heterophyllus</i>	P	blue	3	L
	10	Narrowleaf milkweed	<i>Asclepias fascicularis</i>	P	pink/ white	1.5	M
	11	Summer lupine	<i>Lupinus formosus</i>	P	purple	1.5	L
Mid–Late	12	Common sunflower	<i>Helianthus annuus</i>	A	yellow	5	M
	13	Gumplant	<i>Grindelia camporum</i>	P	yellow	4	L
Late	14	California aster	<i>Symphyotrichum chilense</i>	P	purple	5	L
	15	California fuchsia	<i>Epilobium canum</i>	P	orange/ red	3	L
	16	California goldenrod	<i>Solidago velutina</i> ssp. <i>californica</i>	P	yellow	3	M

Shrubs and Trees

Early	21	California lilac	<i>Ceanothus</i> ‘Concha’	P	purple	4	L
	22	McMinn manzanita	<i>Arctostaphylos</i> ‘McMinn’	P	white	5	L
	23	Oregon grape	<i>Berberis aquifolium</i>	P	yellow	5	L
		Redbud	<i>Cercis occidentalis</i>	P	pink/red	15	M
		California buckthorn	<i>Rhamnus californica</i>	P	white	5	L
Early–Mid		California flannelbush	<i>Fremontodendron californicum</i>	P	yellow	15	L
		Silver bush lupine	<i>Lupinus albifrons</i>	P	purple	3	L
Mid	24	California buckwheat	<i>Eriogonum fasciculatum</i>	P	white	2.5	L





Notes

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.

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

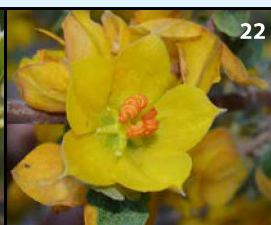
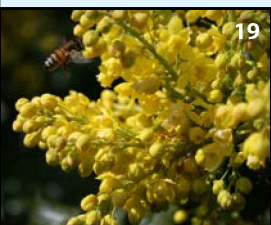
Rose-colored blooms clustered on bare branches; tolerates some shade and moisture; can be pruned to a shrub or small tree

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



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.

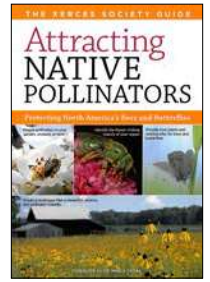
Protect Pollinators from Insecticides

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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