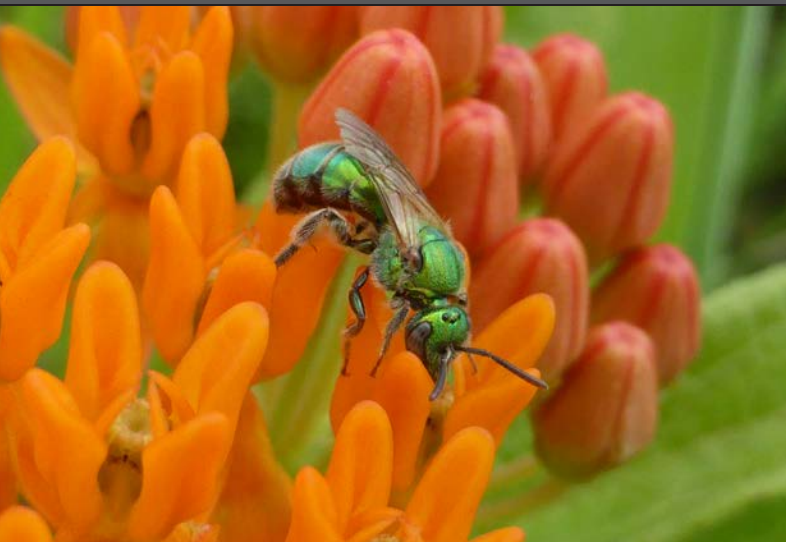


Great Lakes Region



Butterfly milkweed, purple giant hyssop, and purple prairie clover

The Great Lakes region includes an incredibly diverse range of plant communities from wild blueberry barrens and northern boreal forest in Ontario and northern Minnesota, to tallgrass prairie in Wisconsin and Ohio, and mixed broadleaf forests in Ohio, Michigan, Pennsylvania, and New York.

Corresponding to this striking diversity of plant communities is an equally remarkable range of pollinators including the endangered Karner blue butterfly (*Lycaeides melissa samuelis*), more than 20 species of bumble bees (*Bombus* spp.)—including the federally endangered rusty-patched bumble bee (*B. affinis*)—and the northernmost population of migrating monarch butterflies (*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. Female bees also 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. Additional advantages of native plants are that they often require less water than non-natives, do not require

fertilizers, and are less likely to become weedy.

This guide features regional native plants that are highly attractive to pollinators and are well-suited for small-scale plantings in gardens, on business and school campuses, in urban greenspaces, and in farm field borders. In addition to supporting native bees and honey bees, many of these plants attract nectar-seeking butterflies, moths, and hummingbirds, and some are host plants for butterfly and moth caterpillars. With few exceptions, these species occur broadly across the region and can be purchased as seed or transplants. Please consult regional Floras, 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:

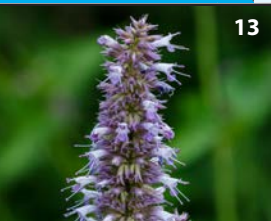
1. **Grow** a variety of pollinator-friendly flowers;
2. **Protect and provide** bee nest sites and caterpillar host plants;
3. **Avoid** using pesticides, especially insecticides; *and*
4. **Spread** the word!

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
		Forbs				(Feet)	L: low; M: medium; H: high
Early	1	Lanceleaf coreopsis	<i>Coreopsis lanceolata</i>	P	yellow	2	L
	2	Smooth penstemon	<i>Penstemon digitalis</i>	P	white	2	M
	3	Wild lupine	<i>Lupinus perennis</i>	P	blue	2	L
Mid	4	Butterfly milkweed	<i>Asclepias tuberosa</i>	P	orange	3	L
	5	Dotted mint	<i>Monarda punctata</i>	A, B, P	purple	3	M
	6	Great blue lobelia	<i>Lobelia siphilitica</i>	P	blue	3	H
	7	Purple coneflower	<i>Echinacea purpurea</i>	P	purple	4	M
	8	Purple prairie clover	<i>Dalea purpurea</i>	P	purple	2	L
	9	Virginia mountain mint	<i>Pycnanthemum virginianum</i>	P	white	3	M
	10	Wild bergamot	<i>Monarda fistulosa</i>	P	purple	4	M
	11	Cup plant	<i>Silphium perfoliatum</i>	P	yellow	8	M
Mid-Late	12	Prairie blazing star	<i>Liatris pycnostachya</i>	P	purple	5	M
	13	Purple giant hyssop	<i>Agastache scrophulariifolia</i>	P	purple	6	M
	14	Rattlesnake master	<i>Eryngium yuccifolium</i>	P	white	5	M
	15	Joe Pye weed	<i>Eutrochium fistulosum</i>	P	pink	7	H
	16	Wingstem	<i>Verbesina alternifolia</i>	P	yellow	6	H
Late	17	Bottle gentian	<i>Gentiana andrewsii</i>	P	blue	2	M
	18	Calico aster	<i>Symphotrichum lateriflorum</i>	P	white	3	M
	19	Field thistle	<i>Cirsium discolor</i>	B, P	purple	6	M
	20	New England aster	<i>Symphotrichum novae-angliae</i>	P	purple	6	M
	21	Showy goldenrod	<i>Solidago speciosa</i>	P	yellow	5	M
		Shrubs and Trees					
Early-Mid	22	Cockspur hawthorn	<i>Crataegus crus-galli</i>	P	white	35	L
Mid	23	Leadplant	<i>Amorpha canescens</i>	P	purple	3	L
	24	New Jersey tea	<i>Ceanothus americanus</i>	P	white	4	M





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Notes

This list of pollinator plants for the Great Lakes Region 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.

This early bloomer can hold its own among grasses and taller species; bees and syrphid flies are common visitors

Semi-evergreen; prolific nectar producer; visited by a huge diversity of butterflies, moths, and bees, including honey bees

Larval host plant for the endangered Karner blue butterfly (*Lycaeides melissa samuelis*; shown), and various other blue butterflies

Milkweeds (*Asclepias* spp.) are host plants for the monarch butterfly (*Danaus plexippus*), and nectar sources for many bees

Tolerates dry, sandy soils; blooms prolifically; highly attractive to beneficial wasps and bees, including honey bees

Great blue lobelia is an exceptional bumble bee plant, and is excellent for rain gardens

Visitors include bees in the genera *Bombus*, *Melissodes*, and *Svastra*, and the leafcutter bee (*Megachile pugnata*)

Honey bees and bumble bees are voracious visitors, as well as several specialist polyester bees (*Colletes* spp.)

This and related species have fragrant foliage, and are visited by blue and copper butterflies, honey bees, and more

Hawk moths, hummingbirds, and long-tongued bumble bees (such as *Bombus pensylvanicus*) are common visitors

Attracts many bees and butterflies; thick hollow stems make excellent nests for leafcutter bees and small carpenter bees (*Ceratina* spp.)

Blazingstars (*Liatris* spp.) support a broad community of butterflies including monarchs, swallowtails, skippers, and sulfurs

This and other wild hyssops (*Agastache* spp.) provide long-lasting, nectar-rich flowers and mint-like foliage

Attracts incredible insect diversity and is the host plant for the rattlesnake master borer moth (*Papaipema eryngii*)

Primarily known as a butterfly plant, Joe Pye weed also attracts bees; tolerant of partial shade and wet soils

A major honey producer; great as a shade-tolerant rain garden or wetland edge plant; may be hard to find in nurseries

Its flower petals never open; almost exclusively pollinated by bumble bees, which pry the petals apart to climb inside

Its shallow nectaries attract more insect diversity than some related species; is also tolerant of partial shade

Not to be confused with non-native thistles; a now uncommon but important plant for butterflies and bumble bees

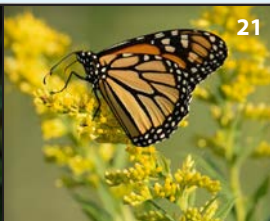
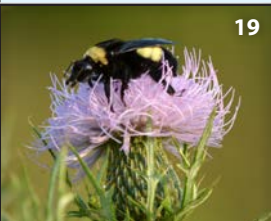
One of the latest fall-blooming plants; frequented by honey bees and pre-hibernation bumble bee queens

Goldenrods (*Solidago* spp.) are frequented by beneficial solitary wasps, pollen-eating soldier beetles, honey bees, and much more

Tough native tree that attracts bumble bees, honey bees, species of mining bees (*Andrena* spp.), as well as songbirds

Leadplant is generally tolerant of disturbed soils; readily visited by leafcutter bees, honey bees, and other beneficial insects

Pollinator magnet that attracts species of flies, wasps, bees, and butterflies; slow growing and prone to deer browsing



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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.

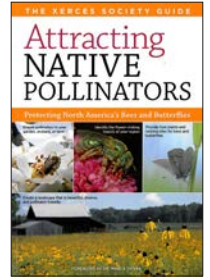
Protect Pollinators from Insecticides

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. http://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

Acknowledgments

Support, background information, and other contributions to this publication were generously provided by Rufus Isaacs's lab at Michigan State University, The Ceres Foundation, CS Fund, Disney Worldwide Conservation Fund, Irwin Andrew Porter Foundation, Turner Foundation, Inc., North Central Sustainable Agriculture Research and Education, and the USDA's Natural Resources Conservation Service.

Written by Nancy Lee Adamson, Brianna Borders, Jessa Cruz, Sarah Foltz Jordan, Kelly Gill, Jennifer Hopwood, Eric Lee-Mäder, Ashley Minnerath, and Mace Vaughan. Designed by Kaitlyn Rich. Formatted by Sara Morris. **PHOTO CREDITS:** The Xerces Society/Nancy Lee Adamson: 1; *Aecole**: 3; Jim Hudgins/USFWS*: 7; The Xerces Society/Sarah Foltz Jordan: 4 (inside and cover), 8 (inside and cover), 10; Peter Gorman (*pchgorman*)*: 17, 20, 24; The Xerces Society/Rich Hatfield: 14, 15; The Xerces Society/Jennifer Hopwood: 5; *JanetandPhil**: 21; The Xerces Society/Eric Lee-Mäder: 9; Dan Mullen (*milesizz*)*: 18, 22; Tom Potterfield (*tpotterfield*)*: 2, 6, 11, 13 (inside and cover), 16; Scott Seigfreid: 12, 19, 23. *Via flickr.com. Photographs remain under the copyright of the photographer.

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