

LIVING IN THE DUNES

A HOMEOWNER'S GUIDE TO
POLLINATOR GARDEN LANDSCAPING IN
INDIANA'S COASTAL COMMUNITIES

 Save the Dunes

VOLUME 2

Acknowledgments

*This project would not have been possible without our supportive staff, expert advisory committee, skilled project team, and generous funding partners. **Save the Dunes** greatly appreciates those who dedicated their time, knowledge and energy to complete this guide.*

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This publication was made possible by a grant from the National Oceanic and Atmospheric Administration and the Indiana Department of Natural Resources Lake Michigan Coastal Program. Matching support was generously provided by BP, the McDougal Family Foundation, NIPSCO and the Unity Foundation. Printing and outreach support was provided in part by a grant from the Great Lakes Restoration Initiative.



Introduction

"Knowing that you love the earth changes you, activates you to defend and protect and celebrate. But when you feel that the earth loves you in return, that feeling transforms the relationship from a one-way street into a sacred bond."

– Robin Wall Kimmerer, *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teachings of Plants*

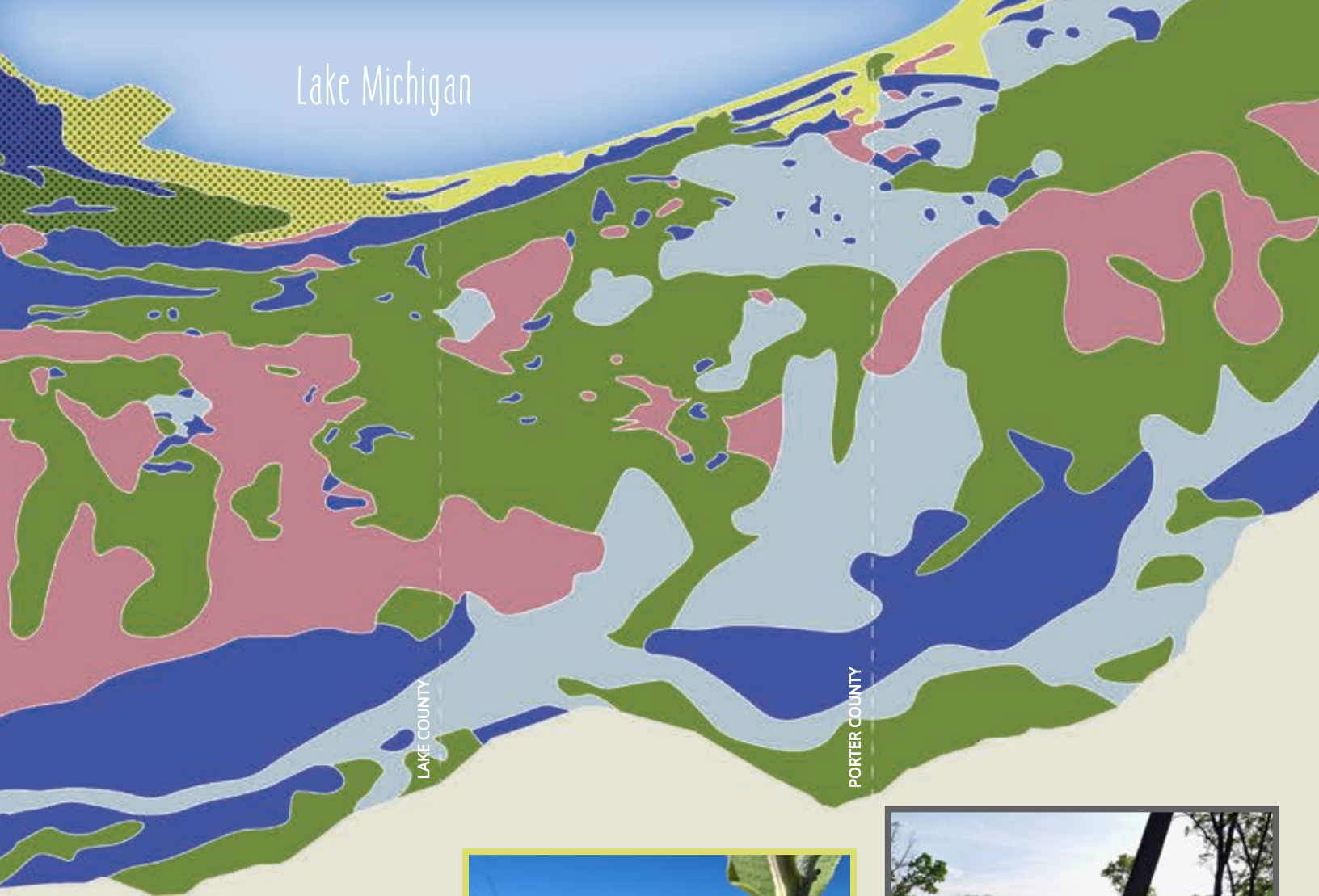
Save the Dunes has long been a champion for defending, protecting and celebrating the rich diversity of life, or *biodiversity*, found in the Indiana dunes. This *Guide* endeavors to empower residents of the Indiana coastal region with tools and inspiration to transform home gardens with beautiful native plants that support an incredible diversity of native pollinators.

Moving south from the sandy Lake Michigan shoreline, successional changes take shape through marram grass-covered coastal dunes that soon give way to towering woodland-covered dunes and a myriad of wetlands. Dune and swale remnants outline the historic Lake Michigan shoreline, while rare oak savannas, riparian woodlands and sun-filled prairies form a mosaic across the region. Each ecosystem boasts an impressive assemblage of plants and wildlife that collectively support one of the most biodiverse regions in the country – the Indiana Dunes – significance embodied by the Indiana Dunes National Park, the Indiana Dunes State Park, countless nature preserves and conservation organizations like Save the Dunes that are working to preserve and protect these areas in perpetuity.

Pollinators are hard-working creatures that enable flowering plants to complete their life-cycle in a rhythmic symbiosis that evolved through the ages. In this way, native pollinators are an intricate, irreplaceable member of the region's ecosystems. Habitat loss and fragmentation, climate change, and chemical pesticides are driving alarming declines in pollinator populations worldwide – including right here at home. Owing to its natural biodiversity, a garden in the Indiana coastal region has nearly endless possibilities for helping pollinators not only survive - *but thrive* - when they feature native plants linked to *pollinator* life cycles. A native gardening approach transforms gardeners into powerful protectors of native plants and their pollinators by increasing ecosystem connectivity across the region's fragmented landscape and building plant and pollinator populations resilient to climate change impacts and other stresses.

This *Guide* provides rich content on six ecosystems, seven groups of pollinators and dozens of native plants found throughout the region. It builds on this information by offering six ecosystem-themed template garden designs suitable for regional landscaping. Gorgeous illustrations of seasonal changes in a pollinator garden will fill any gardener with inspiration for the possibilities that await. Stunning photographs showcase the majesty of each species and their close associations. Finally, cultivated resources provide the tools and information needed to develop, maintain and enjoy the bounties of your native pollinator garden for years to come.

Lake Michigan



© Susan Kirt

Prairie

Prairies are dominated by grasses and flowering plants with little to no tree cover. Prairies once covered large areas of the Midwest including areas of the Indiana coastal region. There are several distinct types - sand prairies, tallgrass prairies, and mesic prairies - characterized by soil type and moisture regimes. Prairie plants thrive in full sun, have deep roots, and support a large number of pollinators. Intermittent, prescribed fire management prevents encroachment by woody plants.



© Susan Kirt

Coastal Dunes

Coastal dunes occur between the shoreline of Lake Michigan and the older more established dunes further south. This system is ever changing as the wind pushes the dunes further away from the beach, and new dunes form as sand is deposited from wave and wind activity of the lake. The most actively moving dunes are often dominated by marram grass, a highly rhizomatous grass species adapted to the disturbance of the shifting sands. These grasses form some stability that allows other plants to find a place to establish themselves. These other plants include milkweeds, flowering spurge, sand cress, creeping juniper, St John's wort, little bluestem, starry false Solomon's seal, sand cherry, and goldenrods.



© Nathanael Pilla

Dune and Swale

Dune and swale is a unique landscape feature formed thousands of years ago during the retreat of glaciers and the subsequent retreat of the Lake Michigan coastline. It is characterized by alternating low-dune ridges alternating with wetland swales. Several dune and swale remnants are found in northern Lake County, Indiana. Dune ridges are often black oak savanna systems, while swale wetlands can be submergent and emergent wetlands. Depending on distance from the lake, swales may be wet year-round or ephemeral wetlands with high water levels in the spring and fall and low water in the summer. Plant communities found here are fire-adapted and depend on regular disturbance to maintain open savannas on dune ridges. Many of the same plants found in savanna and wetland ecosystems can be found here.

Ecosystems of the Indiana Coastal Region

An ecosystem is defined as all of the plants and wildlife that coexist in an area characterized by similar abiotic, or non-living environmental conditions. This includes annual and seasonal precipitation, temperatures, soil types and solar exposure. The Indiana coastal region boasts one of the most diverse assemblages of ecosystems in the United States with coastal dunes, dune-and-swale remnants, woodlands, wetlands, oak savannas, and prairies woven across the landscape.



Wetland

Wetlands are often described by their water depth, acidity and associated plant species. There is a great diversity of wetland types in the Indiana coastal region. Interdunal wetlands are connected to the water levels of Lake Michigan; riparian wetlands are in floodplains associated with streams and rivers; fens are wetlands that have a high pH; bogs are wetlands with a low pH; sedge meadows are shallow wetlands dominated by sedges; swamps are wetlands with trees. More generally, wetland plant communities can be divided into submergent (underwater plants in deep water) and emergent plant communities (plants that grow above the water line). While some wetlands contain water year-round, ephemeral wetlands tend to be wet in the spring and/or fall and dry in the summer. Wetlands support an astonishing diversity of plants and animals, help prevent flooding, and store large quantities of carbon, thereby mitigating climate change.



Oak Savanna

Savannas are rare ecosystems that are part prairie and part woodland. Savannas are described by the dominant tree species that occur, even though the trees never form a complete canopy cover. Black oak savannas are the most prominent in the Indiana coastal region. Large-crowned, open-grown black oaks dot the savanna landscape and are interspersed with swaths of sunny areas. This solar exposure is maintained through the regular fire disturbance that prevents open areas from becoming overgrown with trees and shrubs. Historically this was a disturbance regime maintained by indigenous people. Now, land managers replicate this disturbance in spring and fall seasons with the application of prescribed fires. The wet, dry, sunny, and shady habitat found throughout savanna systems allows for a great amount of plant diversity. Characteristic plants of savanna systems include sundial lupine, tickseed, blazing stars, asters, goldenrods, indigo, and more. A variety of grasses, both sun- and shade-loving, also dominate the herbaceous layer of savannas and provide much of the fuel needed for regular fire disturbance.



Woodland

Woodlands are dominated by trees that form high canopies and promote a proliferation of shade-loving plants in the understory. Canopy gaps and edges enable partial-sun-loving plants to take root. Woodlands are further described by the type of trees that dominate the canopy. In the Indiana coastal region, black oak woodlands dominate mature dune systems further inland from the shoreline. Some black oak woodlands are thought to be savannas that transitioned to woodlands due to a lack of fire disturbance which allowed trees to mature and fill in canopy gaps. Woodlands dominated by a variety of oaks, hickories, maples, and beeches also occur in ravines and other low wet areas throughout the region. Understory plants tend to be shade-loving with an abundance of spring ephemerals that bloom early in the year before the trees have leafed out. Ferns, trilliums, violets, bloodroot, wild ginger, hepatica, and other flowering spring ephemeral plants provide an important source of nectar for early-emerging pollinator species that may reproduce and/or hibernate in the trees and shrubs of the woodland ecosystems.

Native Pollinators

Introducing seven groups of native pollinators: bees, butterflies, moths, birds, beetles, flies, and wasps. In addition to ensuring native plants complete their life cycles - their fascinating ecology, diversity, host plant requirements, floral associations and more are sure to captivate the native gardener.



Andrena species Mining Bees

- **Sociality & diversity:** Solitary; ~30 species in Northwest Indiana (NWI)
- **Active period:** One of earliest bees to emerge in spring
- **Nesting habits:** Ground nesting bee
- **Floral preferences:** Many species are floral specialists
- **Pollen collection:** On upper part of hind legs



Bombus species Bumble Bees

- **Sociality & diversity:** Colony forming; 6 species in NWI
- **Active period:** Early spring-October; Queens require early blooming flowers
- **Nesting habits:** Colonies nest in ground and leaf litter; queen overwinters underground
- **Floral preferences:** Floral generalists
- **Pollen collection:** On hind legs

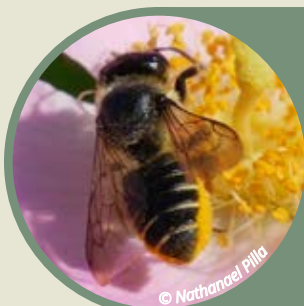
European Honey Bee

European honey bees (*Apis mellifera*) have received a lot of attention due to significant declines from colony-collapse disorder. This species is not however native to North America; it was imported from Europe for large-scale agriculture and honey production. While these honey bees have become naturalized in some places (i.e. they have established populations within natural settings), in actuality they are more akin to agricultural livestock managed by humans for crop production. European honey bees can provide important pollination services for agricultural crops, but their role in pollination is far less important than that of local, native pollinators. Native bees do not just supplement honey bee pollination within agricultural landscapes, they provide significantly greater pollination efficiency in natural areas.



Halictidae family Sweat Bees

- **Sociality & diversity:** Solitary; ~70 species in NWI
- **Active period:** April-October; varies among species
- **Nesting habits:** Ground nesting bee; often nests near other sweat bees
- **Floral preferences:** Most species are floral generalists
- **Pollen collection:** On hind legs



Megachile species Leafcutter Bees

- **Sociality & diversity:** Solitary; ~12 species in NWI
- **Active period:** May-October
- **Nesting habits:** Hollow cavities of stems and logs; cut leaves to line nest
- **Floral preferences:** Some are aster specialists
- **Pollen collection:** Under abdomen



Osmia species Mason Bees

- **Sociality & diversity:** Solitary; 8 species in NWI, some species dark metallic blue-green
- **Active period:** May-June
- **Nesting habits:** Nests in hollow cavities of plant stems and logs; leaf tissue and mud to divide nest cells
- **Floral preferences:** Some species are *Penstemon* specialists
- **Pollen collection:** Under abdomen

Increasingly, evidence shows that a large presence of European honey bees can overwhelm local pollinators, including native bees, by consuming pollen resources in high quantities. This depletes available pollen for and reproductive success of native species. Honey bees do not share the mutualistic pollinator-plant relationships our native pollinators have. This results in cascading impacts, including less successful pollination of native plants and more successful pollination of invasive species that are then able to continue their spread. As the number of hobby beekeepers grows, it is important to ensure there are sufficient habitat and plant resources available for native species, so they are not unintentionally out-competed by populations of non-native honey bees.

The native bee groups and associated native plants featured in this guide showcase the wonderful possibilities for supporting them so they may continue their important work pollinating plants in our natural areas.



Euphydryas phaeton
Baltimore Checkerspot

- **Flight time:** June–August
- **Habitat:** Wetlands—bogs, fens and marshes; wet prairies
- **Life stages:** 1 generation per year; caterpillars overwinter in rolled leaves
- **Caterpillar host plant:** Turtlehead (*Chelone glabra*)
- **Floral preferences:** Nectars on milkweeds and a variety of other flowers

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Monarch Butterfly

Monarchs (*Danaus plexippus*) are one of the most recognizable and celebrated butterflies across the nation. Their striking beauty, impressive long-distance migration—up to 3,000 miles spanning three countries—and large winter gatherings in Mexico and California, coupled with their cultural connection for many people, make them icons of transformation and resilience. But monarch populations are plummeting—they have declined more than **80%** in just two decades—largely due to habitat loss. Once widespread across North America, milkweeds (*Asclepias* spp.) that provide critical food for monarch caterpillars and nectar-rich native plants that provide nourishment for adult butterflies, have been replaced by monoculture stands of crops treated with chemical pesticides harmful to insects. Increased stress from climate-change-related events such as severe storms, droughts and wildfires make this untenable situation much worse.

Home gardens and green spaces in neighborhoods and communities can play an important role in helping monarch populations to recover. Some butterflies are specialists – meaning they will only lay their eggs on specific “host plants” that provide food for their hungry caterpillars. The monarch is a wonderful example; it only lays eggs on milkweed, or *Asclepias* species. Caterpillars that eat milkweed obtain a chemical defense that persists in adult monarchs to ward off predators who simply cannot stand the taste! This strategy is so effective that the viceroy butterfly evolved similar patterns and coloration so predators will avoid it too.

Slightly smaller and with distinct lines across the middle of the hindwings, viceroys are easily mistaken for monarchs by even seasoned butterfly enthusiasts.

You can join the effort to save the monarch butterfly by planting milkweed species such as prairie, common or butterfly milkweed (*Asclepias sullivantii*, *A. syriaca*, *A. tuberosa*). You can go further by creating high-quality pollinator habitat with the native plants and practices featured in this guide. To learn more about monarch conservation in the region, visit: www.Fieldmuseum.org/monarchs.



Limenitis artemis
Red-Spotted Purple

- **Flight time:** April–October
- **Habitat:** Woodlands and woodland edges
- **Life stages:** ~2 generations per year; overwinters as caterpillars
- **Caterpillar host plant:** Willows, poplars and birch trees
- **Floral preferences:** Nectars on white flowers; spoiled fruit
- **Mimicry:** Pipevine swallowtail mimic

© Susan Kirt



Papilio glaucus
Eastern Tiger Swallowtail

- **Flight time:** April–September
- **Habitat:** Woodlands, prairies and wetlands
- **Life stages:** ~2 generations per year; overwinters in chrysalis
- **Caterpillar host plant:** Trees such as tulip tree (*Liriodendron tulipifera*), and black cherry (*Prunus serotina*)
- **Floral preferences:** Nectars on a wide variety of flowers

© Susan Kirt



Papilio troilus
Spicebush Swallowtail

- **Flight time:** April–October
- **Habitat:** Woodlands, savannas, prairies and wetlands
- **Life stages:** ~3 generations per year; overwinters in chrysalis; late instar caterpillars are snake mimics
- **Caterpillar host plant:** Spicebush (*Lindera benzoin*) and sassafras (*Sassafras albidum*)
- **Floral preferences:** Nectars on a wide variety of flowers

© Susan Kirt



Speyeria cybele
Great Spangled Fritillary

- **Flight time:** June–September
- **Habitat:** Woodlands, savannas, prairies and dunes
- **Life stages:** 1 generation per year; overwinters as newly hatched caterpillars
- **Caterpillar host plant:** Violets (*Viola* spp.)
- **Floral preferences:** Nectars on a wide variety of flowers

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Vanessa cardui
Painted Lady

- **Flight time:** April–November
- **Habitat:** Woodland edges, savannas, prairies and dunes
- **Life stages:** Number of generations varies; migrates north from warmer climates
- **Caterpillar host plant:** Primary host plant are thistles (*Cirsium* spp.)
- **Floral preferences:** Nectars on a wide variety of flowers

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© Jeffrey Belth



Ctenucha virginica Virginia Ctenucha

- **Flight time:** May-July
- **Habitat:** Prairies
- **Life stages:** 2 generations per year; overwinters as caterpillars in leaf litter
- **Larval host:** Sedges, grasses and iris species
- **Floral preferences:** Nectars on many flowers like goldenrods (*Solidago* spp.)

© Jeffrey Belth



Eumorpha pandorus Pandora Sphinx

- **Flight time:** May-October
- **Habitat:** Prairies
- **Life stages:** Night-flying moth
- **Larval host:** Grape (*Vitis* spp.) and Virginia creeper (*Parthenocissus* spp.)
- **Plants associated:** Nectars on campions (*Silene* spp.) and the eastern prairie fringed orchid (*Platanthera leucophaea*)

© Jeffrey Belth



Haematupis grataria Chickweed Geometer

- **Flight time:** May-October
- **Habitat:** Prairies
- **Larval host:** Low-growing plants like chickweeds and smartweeds
- **Floral preferences:** Nectar on goldenrods, milkweeds, and Joe-Pye-weed

© Amanda Smith



Hemaris species Hummingbird Moths

- **Flight time:** April-August
- **Habitat:** Prairies
- **Life stages:** Caterpillars spin cocoons at the soil surface
- **Larval host:** Cherries, honeysuckles and others
- **Floral preferences:** Preference for bee balm (*Monarda fistulosa*)
- **Mimicry:** Hummingbird mimic

© Ron Trigg



Hyles lineata White-lined Sphinx

- **Flight time:** March-November
- **Habitat:** Dunes and prairies
- **Life stages:** Caterpillars pupate in soil for 2-3 weeks; overwinters in soil
- **Larval host:** Primrose and rose families
- **Floral preferences:** Preference for bee balm
- **Mimicry:** Hummingbird mimic

© Jeffrey Belth



Archilochus colubris Ruby-Throated Hummingbird

- **Flight time:** Active in the region from April-September
- **Life stages:** Overwinters in Mexico and Central America
- **Floral preferences:** Tubular flowers; drawn to red/orange flowers such as red columbine and cardinal flower; also nectars on bee balm
- **Coevolution:** Flowers shapes and colors designed to attract hummingbirds

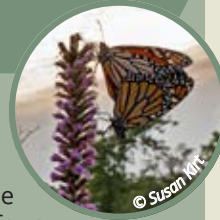
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Metamorphosis

Metamorphosis is one of the most magnificent transformations in nature. Performed by members of the order of *Lepidoptera* – the butterflies and moths – it features four distinct stages: egg, larva, pupa, and adult.



© Susan Kirt

Egg: Butterflies “oviposit” (lay) eggs on the surfaces of “host plants” edible to their caterpillars. The eggs are small and depending on species may be laid singly or in clusters. They are often found protected from the elements on the underside of leaves.



© Jeffrey Belth

Larva: After about a week, a tiny, voraciously hungry “larva” or caterpillar, eats its way out of its egg and continues eating the host plant until nearly bursting. It then sheds its outer skin and resumes eating as a new “instar.” Caterpillar species vary in the number of instars, come in many colors and shapes, sometimes with armor, are often camouflaged to match their host plant, or mimic snakes to avoid being eaten by hungry birds!



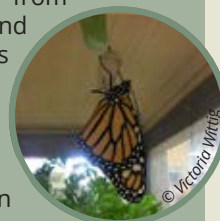
© Ron Trigg

Pupa: A caterpillar ready to transform will search for a secure place to attach before shedding its final skin to reveal a jewel-like chrysalis. Several weeks pass before the caterpillar’s organs transform into a butterfly.



© Jeffrey Belth

Adult: As the butterfly emerges from its chrysalis, it unfurls its wings and hangs from the chrysalis until its wings are fully extended and dry. The butterfly then takes flight in search of flowers to drink energy-rich nectar to find a mate. Fertilized females lay their eggs on host plants to begin the cycle anew.



© Victoria Wirtig

Butterflies may have multiple generations each year - each species is different. Some overwinter as an egg, caterpillar, adult or like the monarch, migrate to warmer climates.



Chauliognathus pennsylvanicus
Goldenrod Soldier Beetle

- **Activity time:** July-September
- **Habitat:** Open habitats including old-fields and meadows
- **Life stages:** Pupation occurs in spring when larva feeds on eggs of locusts, cucumber beetles, and other insect larvae
- **Floral preferences:** Adults eat pollen of goldenrods (*Solidago* spp.), milkweeds (*Asclepias* spp.) and many others



Oncopeltus fasciatus
Large Milkweed Bug

- **Activity time:** June-October
- **Habitat:** Open habitats with milkweed (*Asclepias* spp.)
- **Life stages:** Like monarch caterpillars, they eat milkweed for chemical defenses that keep predators away
- **Larval host:** Milkweed (*Asclepias* spp.)
- **Floral preferences:** Milkweed (*Asclepias* spp.)



Trichiotinus species
Hairy Flower Beetle

- **Activity time:** May-August
- **Habitat:** Prairies, woodlands, savannas
- **Larval food:** Dead hardwood
- **Floral preferences:** Adults feed on pollen, transporting excess pollen on their hairy backs to the next flower; their little hairy backs transporting it to the next flower
- **Mimicry:** Bee mimic



Helophilus species
Hoverfly

- **Activity time:** April-October
- **Habitat:** Wetlands
- **Life stages:** Eggs laid on vegetation overhanging water; larvae falls into water where they feed on submerged plant material
- **Floral preferences:** Adults nectar on asters (*Asteraceae*)
- **Mimicry:** Common yellow jacket mimic



Bombylius major
Great Bee Fly

- **Flight time:** March-June
- **Habitat:** Woodlands
- **Life stages:** Bumble bee mimicry enables it to lay eggs near wasp and bee nests; its larva parasitizes wasp and bee larvae; non-aggressive
- **Larval host:** Tulip tree, black cherry and others
- **Mimicry:** Bumble bee mimic



Spheg ichneumoneus
Great Golden Digger Wasp

- **Flight time:** June-September
- **Habitat:** Open habitats including dunes and prairies
- **Life stages:** Solitary species; nests in the ground
- **Floral preferences:** Milkweed (*Asclepias* spp.), rattlesnake master (*Eryngium yuccifolium*), and others
- **Beneficial insect:** Preys on garden pests; non-aggressive; only stings if harassed



Where Do Pollinators Live?

Pollinators live in different places depending on the stage of their life cycle and the time of year. Butterflies for example, live on host plants while they are caterpillars, rely on stable structures to transform inside a chrysalis and need sheltered spaces to survive as adults during periods of high wind, rain or severe storms. Adult butterflies can be found sheltering under leaves, using them like umbrellas in the rain! Winter presents many challenges for butterflies, which may weather the season as an egg, caterpillar, chrysalis or adult. Eggs and caterpillars need snug spaces in leaf litter near host plants so that when they emerge in the spring they have food ready and waiting. An overwintering chrysalis is often formed under a sturdy branch or under the awning of a house. Adult butterflies may overwinter in leaf litter or are camouflaged on the bark of trees.

Native bees have wonderfully complex lives; the majority are solitary while a few species live in colonies. In fact, 90% of native bees are solitary, meaning that a single female builds her own nest, lays eggs, and feeds her own young. About 70% of solitary bees nest underground, excavating vast tunnel systems. The other 30% of solitary bees nest above ground, in holes of old logs, crevices between stones, or in the hollow or pithy stems of flower stalks or shrubby branches.

Bumble bees are the only native example of the social colony lifestyle that includes a division of labor and cooperative care of young. Bumble bee colonies begin with a single queen female that mated near the end of the previous summer. She overwinters in a sheltered spot a few inches underground. In the early spring, she emerges, builds her nest, and begins provisioning it with pollen, which she shapes into a ball. She lays her eggs on the pollen ball, and larvae hatch a few days later. They feed on the pollen ball, growing and molting several times until they are ready to spin a silken cocoon in which they pupate for about two weeks. The first adult bees to emerge are all female workers and forage to feed the developing larvae as the colony grows. The queen continues to lay eggs; some will become males, workers, and some new queens. Toward the end of the summer, the new queens and males mate. The old queen, workers, and males then die; only the new queens survive to begin the next colony in the spring. If you would like to learn more, *Pollinators of Native Plants* by Heather Holm provides exquisite details and information.

Seasonal Features of Pollinator Gardens



Spring

View of Shade Garden: Early blooming native flowers provide critical food for hungry pollinators emerging from hibernation, such as this queen bumblebee. Don't be too quick to clean up leaves and stems. This tiny great spangled fritillary caterpillar has overwintered in the leaf litter to feed only on the leaves of violets. Spring is a good time to divide and transplant your native plants.



Fall

View of Rain Garden and Partial Sun Garden: Fall-blooming native flowers provide critical nourishment for monarch butterflies on their annual migration south. This final brood of butterflies travels all the way to Mexico! Leave the leaves and hollow plant stems in your flower beds as shelter and nesting sites for bees and other overwintering pollinators.

Native pollinator gardens change through the seasons in extraordinary ways. These illustrations showcase beautiful plantings that serve as food and shelter as pollinators move through their life cycles. Pollinator-friendly tips highlight activities to enjoy as your garden grows.



Summer

View of Sun Garden: Pollinators are in full swing during the summer. Sit back and enjoy the show as busy bees, beautiful butterflies, and other pollinators visit your garden buffet of nectar and pollen. Observe the life cycle of the monarch butterfly on milkweed plants.

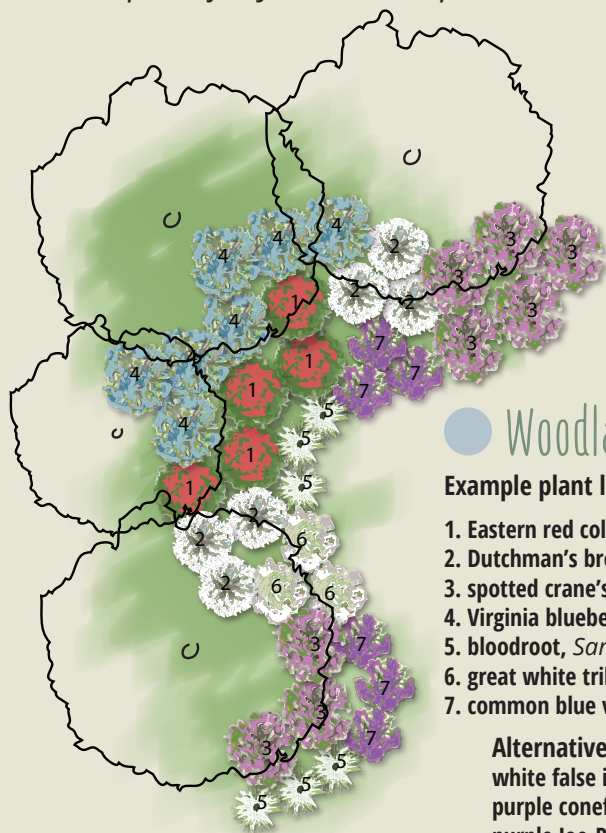


Winter

View of Sun, Partial Sun, and Shade Gardens: Winter is a time of rest for gardeners and insects, but not for hungry birds! Dried standing seed heads leftover from the fall become food for birds. Enjoy the view of your snow-covered landscape knowing you have provided good habitat for the next year's pollinators.

Template Garden Designs

As you use these garden designs to help you arrange your native plantings make sure to review each native plant's ideal conditions, height, and bloom season to help you choose the best plant for your landscape.



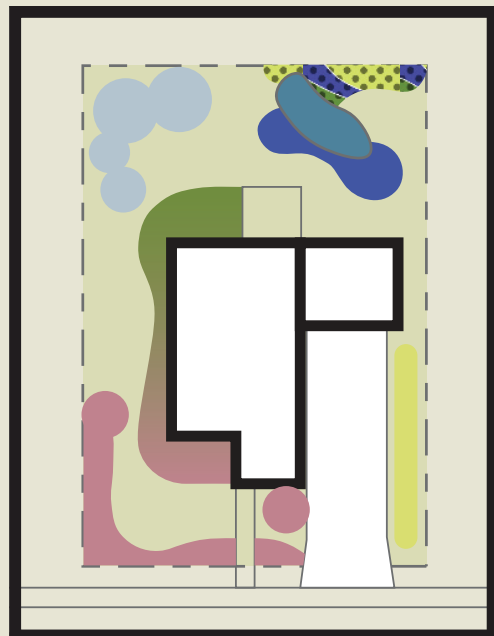
Woodland

Example plant list for Shade Garden

1. Eastern red columbine, *Aquilegia canadensis*
2. Dutchman's breeches, *Dicentra cucullaria*
3. spotted crane's-bill, *Geranium maculatum*
4. Virginia bluebells, *Mertensia virginica*
5. bloodroot, *Sanguinaria canadensis*
6. great white trillium, *Trillium grandiflorum*
7. common blue violet, *Viola sororia*

Alternatives

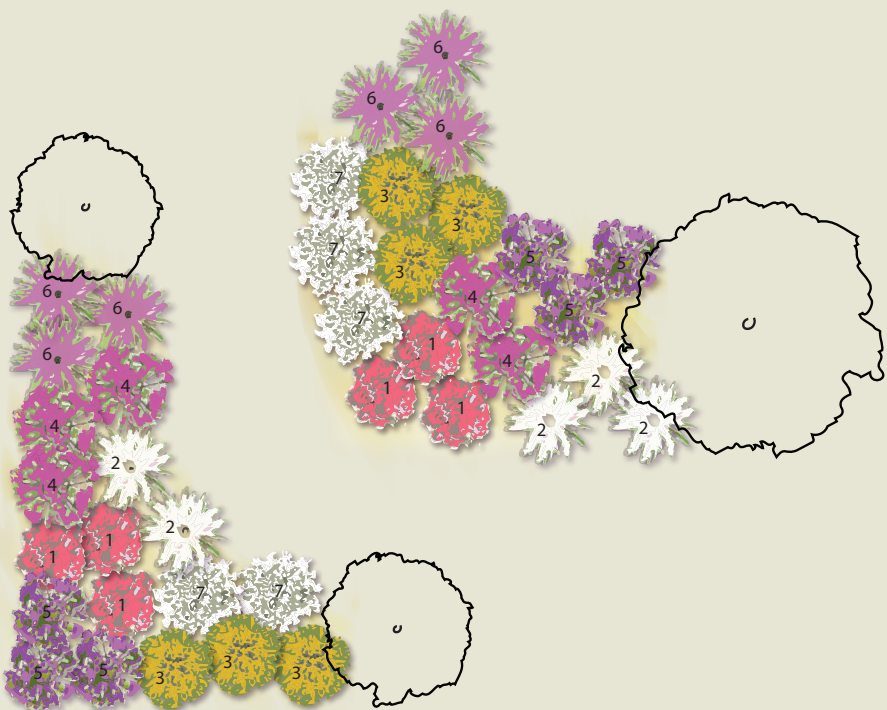
white false indigo, *Baptisia alba*
 purple coneflower, *Echinacea purpurea*
 purple Joe-Pye weed, *Eutrochium purpureum*
 false sunflower, *Heliopsis helianthoides*
 cardinal flower, *Lobelia cardinalis*
 black-eyed Susan, *Rudbeckia hirta*
 showy goldenrod, *Solidago speciosa*



Understanding the Guide:

The following garden template designs feature plant lists specific to one of the six ecosystems described on pages 2 and 3.

- Woodland - Shade Garden
- Prairie - Sun Garden
- Wetland - Rain Garden
- Dune & Swale - Sloped Garden
- Oak Savanna - Partial Sun Garden
- Coastal Dune - Buffer



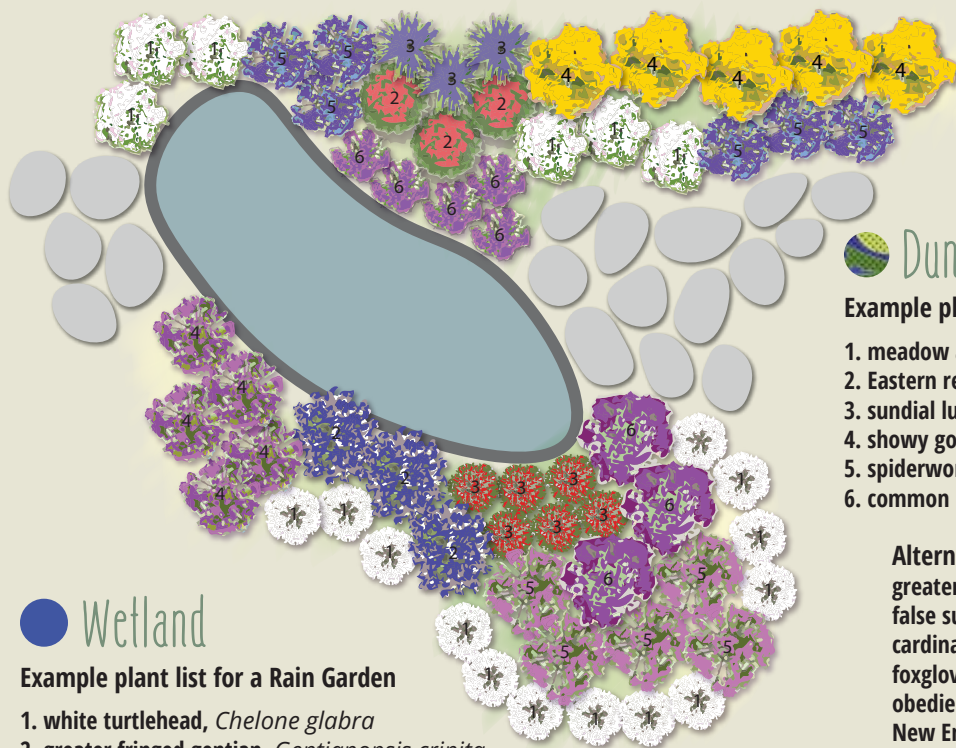
Prairie

Example plant list for Sun Garden

1. prairie milkweed, *Asclepias sullivantii*
2. white false indigo, *Baptisia alba*
3. lanceleaf tickseed, *Coreopsis lanceolata*
4. purple coneflower, *Echinacea purpurea*
5. purple Joe-Pye weed, *Eutrochium purpureum*
6. dense blazing star, *Liatris spicata*
7. foxglove beardtongue, *Penstemon digitalis*

Alternatives

false sunflower, *Heliopsis helianthoides*
 cardinal flower, *Lobelia cardinalis*
 obedient plant, *Physostegia virginiana*
 black-eyed Susan, *Rudbeckia hirta*
 showy goldenrod, *Solidago speciosa*
 New England American aster, *Symphyotrichum novae-angliae*
 spiderwort, *Tradescantia ohiensis*
 common blue violet, *Viola sororia*



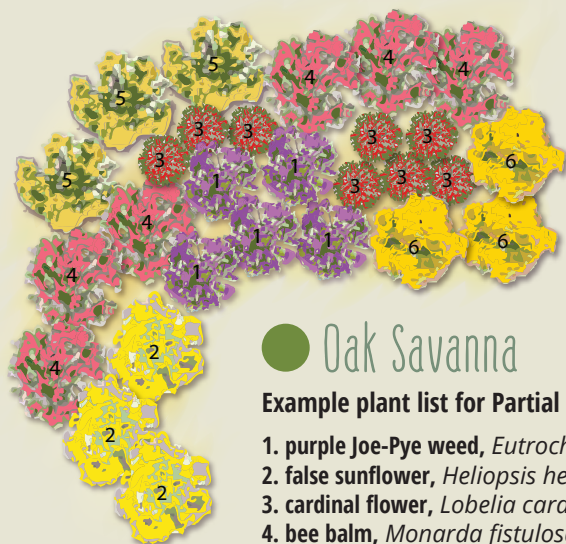
Wetland

Example plant list for a Rain Garden

1. white turtlehead, *Chelone glabra*
2. greater fringed gentian, *Gentianopsis crinita*
3. cardinal flower, *Lobelia cardinalis*
4. bee balm, *Monarda fistulosa*
5. obedient plant, *Physostegia virginiana*
6. New England American aster, *Symphyotrichum novae-angliae*

Alternatives

meadow anemone, *Anemone canadensis*
 Eastern red columbine, *Aquilegia canadensis*
 false sunflower, *Heliopsis helianthoides*
 dense blazing star, *Liatris spicata*
 foxglove beardtongue, *Penstemon digitalis*
 common blue violet, *Viola sororia*



Oak Savanna

Example plant list for Partial Sun Garden

1. purple Joe-Pye weed, *Eutrochium purpureum*
2. false sunflower, *Heliopsis helianthoides*
3. cardinal flower, *Lobelia cardinalis*
4. bee balm, *Monarda fistulosa*
5. black-eyed Susan, *Rudbeckia hirta*
6. showy goldenrod, *Solidago speciosa*

Alternatives

meadow anemone, *Anemone canadensis*
 lanceleaf tickseed, *Coreopsis lanceolata*
 spotted crane's-bill, *Geranium maculatum*
 sundial lupine, *Lupinus perennis*
 spiderwort, *Tradescantia ohiensis*
 common blue violet, *Viola sororia*

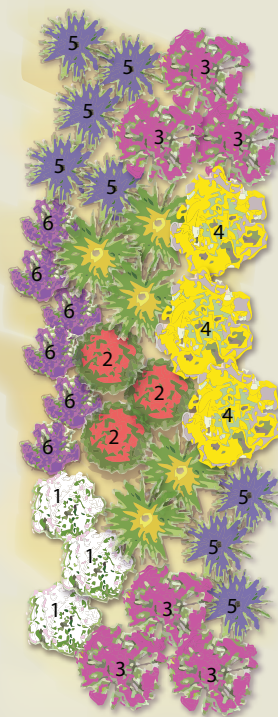
Dune and Swale

Example plant list for a Sloped Garden

1. meadow anemone, *Anemone canadensis*
2. Eastern red columbine, *Aquilegia canadensis*
3. sundial lupine, *Lupinus perennis*
4. showy goldenrod, *Solidago speciosa*
5. spiderwort, *Tradescantia ohiensis*
6. common blue violet, *Viola sororia*

Alternatives

greater fringed gentian, *Gentianopsis crinita*
 false sunflower, *Heliopsis helianthoides*
 cardinal flower, *Lobelia cardinalis*
 foxglove beardtongue, *Penstemon digitalis*
 obedient plant, *Physostegia virginiana*
 New England American aster, *Symphyotrichum novae-angliae*



Coastal Dunes

Example plant list for a Buffer

1. meadow anemone, *Anemone canadensis*
2. Eastern red columbine, *Aquilegia canadensis*
3. purple coneflower, *Echinacea purpurea*
4. false sunflower, *Heliopsis helianthoides*
5. sundial lupine, *Lupinus perennis*
6. common blue violet, *Viola sororia*

Native Plants for Native Pollinators

The following native plants support native pollinators. They are listed according to bloom time to enable gardeners to select plants that will provide pollen and nectar for pollinators that are active from early spring through late fall.



© Ron Trigg

Dicentra cucullaria Dutchman's-Breeches

Ecosystem: Woodland

Pollinator host plant: Moths

Pollinated by: Bees, butterflies, flies

Tips: Compliment's sister species, bleeding hearts, and native squirrel corn; loamy, rich soil; goes dormant in summer - plant within garden bed instead of borders

Bloom Time J F M A M J J A S O N D



© Susan Kirt



© Victoria Wittig

Mertensia virginica Virginia Bluebells

Ecosystem: Woodland

Pollinated by: Bees, hummingbirds, butterflies, moths, flies

Tips: Shade tolerant; rich soil; deer resistant

Bloom Time J F M A M J J A S O N D



© John Balaban



© Ron Trigg

Sanguinaria canadensis Bloodroot

Ecosystem: Woodland

Pollinated by: Bees, butterflies, hummingbirds, ants

Tips: Rich soil; shady location

Bloom Time J F M A M J J A S O N D



© Susan Kirt



© Myra Cseke

Trillium grandiflorum Great White Trillium

Ecosystem: Woodland

Pollinated by: Bees, flies

Tips: Needs rich soil

Related natives: Drooping trillium (*Trillium flexipes*), red trillium (*Trillium erectum*)

Bloom Time J F M A M J J A S O N D



© John Balaban



© Victoria Wittig

Viola sororia Common Blue Violets

Ecosystem: Coastal dunes, savannas, prairies, woodlands, wetlands, dune and swale

Host plant for: Fritillaries (*Speyeria* spp.)

Tips: Tolerant of disturbance

Interesting feature: *Viola* spp. occur in purple, white and yellow; shades vary

Bloom Time J F M A M J J A S O N D



© Susan Kirt

What is Pollination?

Over the ages, flowering plants - the angiosperms - developed sophisticated strategies to attract pollinators to move pollen, containing the male genetic material, to the carpel, the female reproductive portion of the flower to ignite fertilization and produce fruits and seeds that ensure their future generations. Their strategies not only attract pollinators, they attract us to glorious floral displays, aromatic scents and shapely expressions treasured in our gardens. Plants increase the chance of fertilization, resulting in seeds and fruits that ensure their next generation, when they work in harmony with pollinators.

Native plants live in a symbiotic, give-and-take, relationship with pollinators. For the plant, there is an increased chance of pollination; for the pollinators, there is a source of nutritious food in the form of sweet nectar or protein-rich pollen grains for their nourishment and the nourishment of their young.

Why are native plant flowers so important to our native pollinators? Often, pollinators are specialists, feeding on only one or a few closely-related flower relatives. This includes some of our favorite pollinators, the bees. While some bees visit multiple plant species, others, like the distant miner bee (*Andrena distans*), will only feed on spotted crane's bill (*Geranium maculatum*). Many native plant species have these specialist pollinators and would be lost without them.

To learn more visit:

www.fs.fed.us/wildflowers/pollinators/



© Ron Trigg

Aquilegia canadensis

Eastern Red Columbine

Ecosystem: Woodland, wetland, dune and swale, coastal dunes

Host plant for: Columbine Duskywing (*Erynnis lucilus*)

Pollinated by: Bees, hummingbirds

Tips: Many colors available in garden centers

Bloom Time J F M A M J J A S O N D



© Susan Kirt



© Ron Trigg

Geranium maculatum

Spotted Crane's-Bill

Ecosystem: Woodland edges, savanna

Host plant for: White-marked Tussock Moth (*Orgyia leucostigma*)

Tips: Long-blooming flowers that grow in clumps; ideal for borders

Bloom Time J F M A M J J A S O N D



© Susan Kirt



© Ron Trigg

Lupinus perennis

Sundial Lupine

Ecosystem: Savanna, dune and swale, coastal dunes

Host plant for: Karner Blue Butterfly (*Lycaeides melissa samuelis*)

Pollinated by: Bees, wasps, butterflies, flies

Interesting feature: Fixes nitrogen; increases soil fertility

Bloom Time J F M A M J J A S O N D



© Susan Kirt



© Susan Kirt

Coreopsis lanceolata

Lanceleaf Tickseed

Ecosystem: Prairie, savanna

Host plant for: Silvery Checkerspot (*Chlosyne nycteis*)

Pollinated by: Bees, butterflies, beetles, wasps, ants

Related natives: Prairie coreopsis (*Coreopsis palmata*), tall coreopsis (*Coreopsis tripteris*)

Bloom Time J F M A M J J A S O N D



© Erin Bartels



© Barb Labus

Baptisia alba

White False Indigo

Ecosystem: Woodland, prairie, savanna

Host plant for: Wild Indigo Duskywing (*Erynnis baptisiae*)

Pollinated by: Bees, butterflies, flies

Related natives: false blue indigo (*B. australis*), yellow indigo (*B. tinctoria*)

Bloom Time J F M A M J J A S O N D



© Ron Trigg



© Victoria White

Anemone canadensis

Meadow Anemone

Ecosystem: Savanna, wetland, dune and swale, coastal dunes

Pollinated by: Bees, flies, beetles

Tips: Divide plant in fall; ideal for borders and corners

Related natives: Wood anemone (*Anemone quinquefolia*), eastern tall anemone (*Anemone virginiana*)

Bloom Time J F M A M J J A S O N D



© John Balaban

Common Misconceptions

For many people, the word "pollinator" is synonymous with bees, and the two words most associated with bees are "honey" and "sting." While it is true that many insect pollinators have defense mechanisms capable of rendering painful stings, most are non-aggressive, many are docile, and others merely look intimidating. We can minimize our chances of having unpleasant interactions with insect pollinators by learning more about them. Most bees and wasps are non-aggressive, but they will defend themselves and their colonies if provoked. The rule of thumb is: if in doubt, stay away and call an expert.

A recurring trait among many bees and wasps is the black-orange/yellow-black color pattern. Entomologists believe that this is a warning coloration or "aposematism" meant to alert predators of a potentially painful interaction. Amazingly, many other unrelated, completely harmless insects such as great bee flies (*Bombyliidae*), hairy flower beetles (*Syrphidae*), and exquisite moths have developed similar colorations to fool would-be predators into thinking that they are dangerous. Ecologists describe this as *mimicry*.

Let's also consider the purpose of an insect's stinging mechanism. The stinger itself is a modified segment of the abdomen that contains venom. Both bees and wasps use their stingers as a means of defending themselves or their colonies, only used in desperate situations. Wasp stingers also have an offensive purpose. Wasps play an important role in ecology as predators and parasitoids of other insects, many of which are garden and agricultural pests. Some dunes-area wasps such as the great golden digger wasps (*Sphex ichneumoneus*), are also pollinators.

By better understanding these beneficial insects and their roles in the ecosystem, not only can we coexist with them, but we can also take advantage of the ecosystem services they provide.



© Ron Trigg

Tradescantia ohiensis

Spiderwort

Ecosystem: Prairie, savanna, dune and swale

Pollinated by: Bees, butterflies, beetles, moths, flies

Interesting feature: Long, narrow leaves with angular arrangement resemble crouching spiders; flowers open in the morning

Bloom Time J F M A M J J A S O N D



© Susan Kirt



© Heather Holm



© Ron Trigg

Penstemon digitalis

Foxglove Beardtongue

Ecosystem: Prairie, wetland, dune and swale

Pollinated by: Bees, hummingbirds, butterflies, moths, flies, wasps, beetles

Similar natives: Long-sepaed beardtongue (*Penstemon calycosus*)

Interesting feature: Flower ideal for bees

Bloom Time J F M A M J J A S O N D



© John Balaban



© Ron Trigg

Asclepias sullvanii

Prairie Milkweed

Ecosystem: Prairie; other *Asclepias* spp. found in every ecosystem

Host plant for: Monarch (*Danaus plexippus*)

Related species: Swamp, common & butterfly milkweed

Bloom Time J F M A M J J A S O N D



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Echinacea purpurea

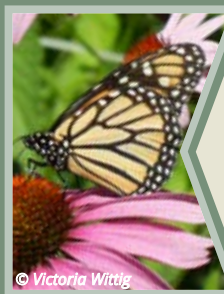
Purple Coneflower

Ecosystem: Woodland, prairie, coastal dunes

Host plant for: Silvery Checkerspot (*Chlosyne nycteis*)

Pollinated by: Bees, butterflies, wasps, beetles, moths

Bloom Time J F M A M J J A S O N D



© Victoria Wittig



© Victoria Wittig

Liatris spicata

Dense Blazing Star

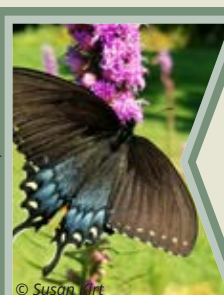
Ecosystem: Wetland, prairie

Host Plant for: Glorious Flower Moth (*Schinia gloriosa*)

Related species: Prairie blazing star, rough blazing star

Tips: Increases the number of flower shoots each year; can divide and share

Bloom Time J F M A M J J A S O N D



© Susan Kirt



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Physostegia virginiana

Obedient Plant

Ecosystem: Prairie, wetland, dune and swale

Pollinated by: Bees, hummingbirds, butterflies, beetles

Interesting feature: Bees take late afternoon naps inside the tubular flowers

Bloom Time J F M A M J J A S O N D



© Susan Kirt

Rusty Patched Bumble Bee

Once common across its range in over 31 states and provinces, in 2017 the rusty patched bumble bee (*Bombus affinis*) became the first bumble bee to be listed as endangered by the United States Fish and Wildlife Service. Loss of habitat, disease, pesticides, and climate change have led to a 90% decline in the population.

The rusty patched bumble bee begins each season in the woods, where the solitary queen emerges from overwintering cavities and forages on early wildflowers and blooming trees. In late spring, the queen moves into open meadows and prairie areas to create a colony underground. The hive persists through the summer by drawing on the nectar and pollen available from local, preferably nutrient-rich native flowers. New queens are produced at the end of the season, when they leave the colony, mate, and then head into hibernation in wooded areas for the winter.

Help conserve the rusty patched bumble bee by planting native vegetation, including early blooming shrubs, reducing tillage and soil disturbance, and keeping brushy, unmown areas available for nest construction. To avoid poisoning these sensitive pollinators, minimize pesticide usage whenever possible. In the spring, reduce mulch layers over garden soil to provide access to the soil nesting sites.

The dunes region recently suffered the loss of a butterfly, the Karner blue from habitat loss and climate change. We hope this guide provides the inspiration and encouragement needed to sustain dwindling rusty patched bumble bee populations so we don't end up losing them too.



© Jeffrey Beith

To learn more visit:
www.fws.gov/midwest/endangered/insects/rpbb/



© Victoria Wittig

Rudbeckia hirta Black-Eyed Susan

Ecosystem: Prairie, woodland, savanna
Host plant for: Silvery Checkerspot (*Chlosyne nycteis*)
Pollinated by: Bees, butterflies, beetles
Similar natives: Yellow coneflower (*Ratibida pinnata*), brown-eyed Susan (*Coreopsis triloba*)

Bloom Time J F M A M J J A S O N D



© Ron Trigg



© Ron Trigg

Eutrochium purpureum Purple Joe-Pye Weed

Ecosystem: Prairie, woodland, savanna
Host plant for: Moths - *Haploa clymene*, *Carmenta bassiformis*, *Eupithecia miserulata*
Pollinated by: Bees,
Tips: Spreads vigorously unless seed heads are cut

Bloom Time J F M A M J J A S O N D



© Ron Trigg



© Ron Trigg

Lobelia cardinalis Cardinal Flower

Ecosystem: Coastal dunes, prairies, woodland, savanna, wetlands, dune and swale
Pollinated by: Bees, hummingbirds, butterflies
Related species: Great Blue Lobelia (*Lobelia siphilitica*)
Tips: Keep roots a little wet, especially during droughts

Bloom Time J F M A M J J A S O N D



© Susan Kirt



© Ron Trigg

Monarda fistulosa Bee Balm

Ecosystem: Savanna, wetland savanna, wetlands, dune and swale
Host plant for: Hermit Sphinx (*Lintneria eremita*), Orange Mint Moth (*Pyrausta orphialis*)
Pollinated by: Bees, hummingbirds, butterflies, moths, flies, wasps, beetles

Bloom Time J F M A M J J A S O N D



© Susan Kirt



© Victoria Wittig

Heliopsis helianthoides False Sunflower

Ecosystem: Prairie, woodland, savanna, wetland, dune and swale, coastal dunes
Host plant for: Painted Lady (*Vanessa cardui*)
Tips: Spreads; grows up to 5' tall; abundant display of daisy-like yellow flowers

Bloom Time J F M A M J J A S O N D



© Victoria Wittig

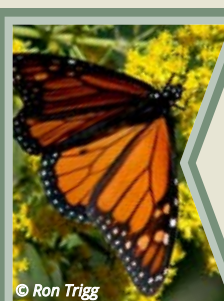


© Ron Trigg

Solidago speciosa Showy Goldenrod

Ecosystem: Prairie, woodland, savanna
Pollinated by: Bees, butterflies, beetles, flies, wasps
Related species: Many *Solidago* species
Interesting feature: Pollinator magnet

Bloom Time J F M A M J J A S O N D



© Ron Trigg



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Fireflies

In our region, a signature summertime experience definitely includes the magical flashing of fireflies. It also beckons one to remember a childhood filled with laughter while chasing brief flashes of light through the yard to showcase prized fireflies in a jar before releasing them back to the summer breeze. Also known as "lightning bugs," fireflies are neither flies nor bugs, they are beetles in the *Lampyridae* family. Their flashing light show is a summertime courtship display, designed to dazzle and attract a mate.

For most of the past century, scientists believed that adult fireflies were only interested in romance and had no need for nourishment. Evidence is now accumulating that fireflies are drinking nectar from milkweed flowers - possibly to gain protection from the same chemical defenses that monarchs enjoy when their caterpillars eat milkweed leaves. There is increasing evidence that when nectaring on milkweed flowers, fireflies are also pollinating them! Although this is new science with many more discoveries yet to be made, fireflies are a welcome addition to the pantheon of milkweed-associated pollinators. This precious milkweed connection may also help reverse the alarming declines in firefly populations; efforts to protect the monarch butterfly by planting milkweed species will also protect fireflies.



© Susan Kirt

Like all pollinators, fireflies are vulnerable to habitat loss and climate change, but they seem to be particularly sensitive to chemical pesticides. If your garden is rich in native plants and protected from chemical pesticides, fireflies will reward you with one of nature's most charming summertime light-shows sure to create lasting memories and a new generation of admirers. Learn more about the magic and science of fireflies from the Xerces Society, visit: www.xerces.org.

Chelone glabra
White Turtlehead

Ecosystem: Wetland

Host plant for: Baltimore Checkerspot (*Euphydryas phaeton*)

Pollinated by: Long-tongued bees

Tips: Needs moist soils to thrive

Bloom Time J F M A M J J A S O N D

© Ron Trigg

Gentianopsis crinita
Greater Fringed Gentian

Ecosystem: Wetland, dune and swale

Similar Natives: Bottle gentian (*Gentiana andrewsii*)

Interesting Feature: Flower shape ideal for bumble bee bodies

Tips: Flowers form clumps of oblong balloon shapes at the end of stems; varieties in pink and white.

Bloom Time J F M A M J J A S O N D

© Josh Fecteau

Symphotrichum novae-angliae
New England American Aster

Ecosystem: Prairie, wetland, dune and swale

Host plant for: Pearl Crescent (*Phycodes tharos*)

Similar Natives: Heart-leaved aster (*Symphotrichum cordifolium*), smooth aster (*S. laeve*), swamp aster (*S. puniceum*)

Bloom Time J F M A M J J A S O N D

© Susan Kirt

Garden Maintenance:

Pesticide:

Pesticides are deadly to pollinators and are strongly discouraged in native plantings. Mechanical weed removal is encouraged and is easier if timed shortly after the rain.

Plant Spread:

Divide plants in the spring or fall; choose areas with ample space for spreading species to serve as color-beacons for pollinators.

Spring Clean Up:

Wait until temperatures are consistently above 50° (F) to protect pollinators that haven't emerged from hibernation in plant stems, leaf litter and soil.

Fall Clean Up:

Leave the leaves to provide essential habitat for pollinators that overwinter in leaf litter. Standing flower stalks are nesting sites for bees; seed heads are food for birds.

Native Trees, Shrubs, and Vines for Pollinators

Woody perennials are host plants, food sources and shelter for pollinators. Timing is everything! Spring blooms support early-emerging pollinators; fall blooms offer food late in the year.

Amelanchier arborea
Downy Serviceberry

Bloom time: Spring

Host plant for: Viceroy, Red-spotted Purple

© Jeffrey Beith

Hamamelis virginiana
Witch-hazel

Bloom time: Fall

Important late pollen and nectar source for bees

© Steve Soss

Cephalanthus occidentalis
Buttonbush

Bloom time: Spring

Host plant for: Titan Sphinx (*Aellopos titan*), Hydrangea Sphinx (*Darapsa versicolor*)

© Susan Kirt

Asimina triloba
Pawpaw

Bloom time: Spring

Host plant for: Zebra Swallowtail

© Susan Kirt

Liriodendron tulipifera
Tuliptree

Bloom time: Spring

Host plant for: Tiger Swallowtail

© Jeffrey Beith

Hypericum kalmianum
St. John's Wort

Bloom time: Summer

Host plant for: Gray Half-Spot Moth

© Ron Trigg

Cornus florida
Flowering Dogwood

Bloom time: Spring

Host plant for:

Spring Azure Butterfly

Related species: red-osier dogwood

© Jeffrey Beith

Prunus serotina
Black Cherry

Bloom time: Spring

Host plant for: Tiger Swallowtail, Red-spotted Purple, Summer Azure, Coral Hairstreak

© Susan Kirt

Lindera benzoin
Northern Spicebush

Bloom time: Spring

Host plant for:

Spicebush Swallowtail

© Susan Kirt

Cercis canadensis
Redbud

Bloom time: Spring

Host plant for: Henry's Elfin, Io Moth, Redbud Leafroller Beetle, Redbud Leafminer Beetle

© Susan Kirt

***Quercus* spp.**
Oak Species

Bloom time: Spring

Host plant for: Hairstreaks and Duskywing Butterflies, Moths

© Susan Kirt

Clematis virginiana
Virgin's Bower Clematis

Bloom time: Fall

Pollinator magnet; fragrant blooms

© M. Free, MFW.org

How to Start Your Pollinator Garden:

Plant Preferences:

Familiarize yourself with the plants in this guide by their color and bloom time. Do you need more flowers in the spring? If so, focus on spring blooming plants that have colors that speak to your gardening palette. You may enjoy the complementary nature of purple asters and yellow goldenrods in the fall. You may want to incorporate every red flower you can find! Knowing what you like is important so that you enjoy your garden as it grows.

Solar Exposure:

Assess your landscape to determine the length of direct sunshine or full shade in areas you would like to plant. Review optimal solar exposure times for plants you like. This will help you select plants suited for your spaces.

Essential Features of Pollinator Gardens:

Pollinator gardens require four essential features for habitat; food, water, shelter, and a place to rear young. Providing all four of these elements will create habitat for the pollinators and they will be able to complete their life cycle in your garden. This will help ensure they return to your garden year after year

Food:

To attract a wide variety of pollinators, have a variety of food sources available. This includes pollen and nectar sources from trees, shrubs, and forbs and host plants for caterpillars. To provide a consistent source of pollen and nectar, feature plants that bloom from early spring through late fall.

Water:

A water source is important for pollinators and birds alike! Maintaining a clean birdbath is a great start. Pollinators also drink water from rain puddles and morning dew.

Shelter:

Shelter is required for resting and quiet areas are required for nesting. This can be near trees, shrubs, logs on the ground, and plants with varying heights and textures that are tucked away.

Soil Conditions:

Determine if the soil has good drainage or experiences ponding. Areas that easily saturate are great candidates for wetland-style rain gardens. Dry areas in full sun are ideal candidates for prairie-style sun gardens. Use compost to enrich nutrient-poor soil.

Growing with Your Garden:

Exercise patience to learn how well the plants you've selected do in your garden. If the native plant is doing exceedingly well, you'll likely need to divide it or thin it out during the spring or fall. If you like the spreading nature of your plant and have the space for it, then you can let it go. If it's popping up in unexpected places, maybe you gently dig it up and trade with a friend for a plant you have had your eye on. If there is a plant you do not like, it's a good idea to replace and/or remove it. Protecting your enjoyment of your space will keep you coming back for more.

A Place to Rear Young:

To complete the pollinator's life cycle and have them return to your yard, the garden should provide a place for the pollinators to rear their young. The garden should be free of pesticides. There should be spots of bare ground in the yard where pollinators can burrow to raise their young. Some pollinators will also use the stems of plants. Because many pollinators are specialists, they require a host plant for their young to feed at certain stages of their life cycle -as demonstrated by the relationship between the monarch and milkweeds (*Asclepias* spp.).

BONUS!

Providing a habitat with a great variety of plants will provide year-round interest for the gardener as well. This includes annual flowering plants that you can add in to provide pops of color, interest and a consistent source of nourishment for pollinators throughout the growing season.

Native Plant Sales, Resources, and More:

Annual Native Plant Sales:

- Friends of Indiana Dunes - April
- Wild Ones Gibson Woods Chapter - May
- Indiana Wildlife Federation - Seasonal
- Openlands - Seasonal

Garden Centers & Nurseries that Stock Native Plants:

- Cardno Nursery - Walkerton, Indiana
- Chesterton Feed and Garden - Chesterton, Indiana
- Native Plants Unlimited - Fishers, Indiana
- Naturally Native Plant Nursery - LaPorte, Indiana
- Possibility Place - Monee, Illinois
- Prairie Moon Nursery - Winona, Minnesota

Plant & Pollinator Resources:

- Fish and Wildlife Service (State and Federal)
- Natural Resource Conservation Service - USDA
- Pollinator Partnership
- Save Our Monarchs
- Wild Ones
- Xerces Society

Native Garden Certification & Award Opportunities:

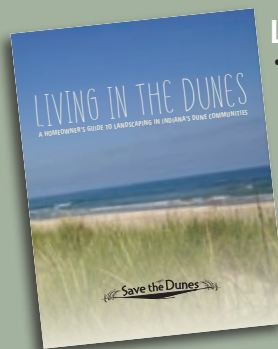
- Indiana Native Plant Society
- Indiana and National Wildlife Federation
- Monarch Watch
- Shirley Heinze Land Trust's Bringing Nature Home Award

Recommended Reading:

- *Butterflies of Indiana: A Field Guide* by Jeffrey Belth
- *Bringing Nature Home: How You Can Sustain Wildlife with Native Plants* by Douglas Tallamy
- *The Midwestern Native Garden: Native Alternatives to Nonnative Plants* by Charlotte Adelman & Bernard Schwartz
- *Nature's Best Hope: A New Approach to Conservation That Starts in Your Yard* by Douglas Tallamy
- *Pollinators of Native Plants* by Heather Holm

Living in the Dunes:

- *A Homeowner's Guide to Landscaping in Indiana's Dune Communities*
- Volume 1 of *Living in the Dunes* features essential information on problematic invasive species, native plant identification, template garden designs, resources and more!
- Visit savedunes.org to download your copy of our *Living in the Dunes* Guides.





Save the Dunes

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www.savedunes.org

Summer 2021

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