IN YOUR BACK YARD

A guide to the pollinators and plants you might find in your backyard, neighborhood, or local park.

PLANTS & POLLINATORS OF THE MIDWEST

SWCA

Spring and summer are great seasons to learn about the different pollinators and plants in your backyard vegetable patch, local park, or community garden.

Pollinators are all around us, and many of them are easy to identify. SWCA's natural resources experts compiled this booklet to help you learn more about pollinators, their habitats, and the important roles they play in all our lives. We've included several common pollinators, such as bees and butterflies, and even some that might surprise you, such as flies and beetles!

Look closely at your backyard during the warmer months and keep this guide handy as you learn all about pollinators and the plants they visit.

CHECK IF SPOTTED!

SO, WHAT'S THE BIG DEAL WITH POLLINATORS?

Pollinators play a key role in the production of more than 150 food crops in the United States, such as apples, alfalfa, almonds, blueberries, cranberries, kiwis, melons, pears, plums, and squash.

Many pollinators are becoming increasingly scarce because their habitats are shrinking and they lack a steady supply of food, access to good shelter, and freedom from disturbance and pesticides. The best action you can take to support pollinators is to provide food (flowers), shelter, and protection.

COMMON SPECIES

MOST LIKELY FOUND IN YOUR BACKYARD AND NEIGHBORHOOD

HUMMINGBIRDS

Most hummingbirds are tropical and live in South America. In the U.S., 27 different kinds of hummingbirds have been seen and only a dozen or so regularly live here.

Only one is normally found in the Midwest. Because their natural food is the nectar and insects found in deep tubular (usually red) flowers, hummingbirds may be important pollinators for some or our most appreciated garden and wild flowers.

CARDINAL FLOWER

RUBY-THROATED HUMMINGBIRD

The default hummingbird throughout eastern North America, the Ruby-throated Hummingbird graces our backyard nectar feeders and flower gardens from late April to October. Although it subsists on nectar, the species also eats mosquitos, gnats, aphids, and spiders. Males are brilliant emerald green above with an iridescent red throat, while the females are duller green and have a white throat.

HABITAT:
Deciduous woodlands, orchards, and forest edges

BEES (ORDER HYMENOPTERA)

Bees tend to be attracted to brightly colored day-blooming flowers with lots of pollen. Individual bees feed mostly on the nectar of flowers but feed their babies the pollen, which is rich in protein and other nutrients.

Most bees are solitary. Each female makes her own nest, usually in a hole in the ground or in wood. She may make more than a dozen nests. She provisions her offspring with pollen, sometimes mixed with nectar, and usually seals the nest. Then she dies.

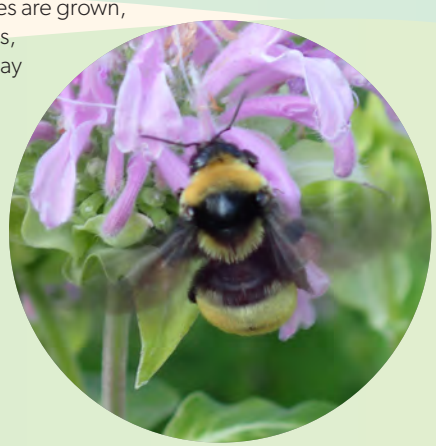
Many species of bees are active for only a very short period, for example, just the hour before sunrise for a couple weeks each year. The adults may live short lives, but the babies (larvae) continue to grow in the security of the nest created by their mothers.

Between **400** and **500** species of bees have been found in Illinois.

BUMBLE BEES (FAMILY APIDAE)

North America supports approximately 55 species of Bumble Bees, most of which share the same basic appearance and lifestyle. A thick fur coat keeps the Bumble Bee warm on chilly nights and gives it a head start on cool mornings. Bumble Bees are efficient pollinators of complex flowers, like the lupines, bergamot, and tomatoes.

Expectant mother Bumble Bees spend the winter alone in abandoned rodent burrows or other places where they can survive the cold. When Spring comes, they emerge, feed at the first available flowers, and find a new burrow that they remodel to make a nest. Each solitary female makes a wax pot in which she stores nectar and pollen to feed the first of her babies. When the first young ones are grown, they take over the housekeeping and foraging duties, leaving the mother to the task of laying eggs. She may lay several hundred during her lifetime. As Winter approaches, some of her eggs grow up to be females ready to mate, and males ready to search for mates. After mating, the males die, the females do their best to fill up on nectar from Fall flowers so that they can survive the winter. All the worker and male Bumble Bees perish with the frost, but the females, if they find enough food and a good burrow, survive the Winter to continue the cycle.



DID YOU KNOW?

More than 4,000 different kinds of bees live in North America.

About a dozen species of Bumble Bees are known from the Midwest.

ENDANGERED SPECIES

MINNESOTA'S STATE BEE

The Rusty-patched Bumble Bee was once common but is now endangered and found in only a few places in the Midwest. It needs protection and safe habitat with lots of wildflowers from Spring through Fall. Learn more: https://www.fws.gov/endangered/

Many bees are very specific about the plants they feed in and pollinate, others may select a wider variety of flowers. Those that are very specific tend to have short adult lives. Those that are more general in food selection tend to have longer adult lives.

Most bees do not sting unless very provoked, for example, by being captured.

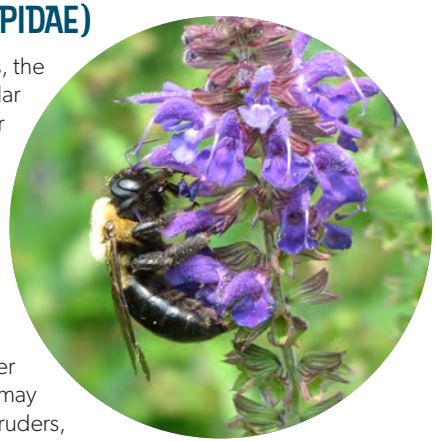
SWEAT BEES (FAMILY HALICTIDAE)

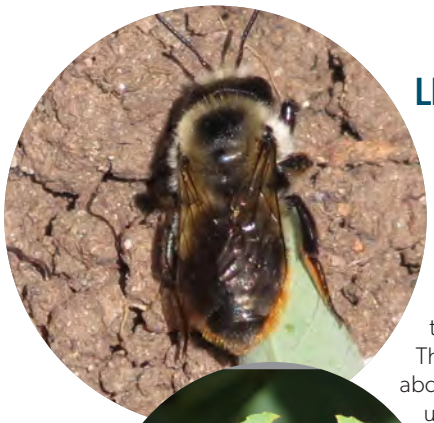
Sweat Bees approach people to harvest the water and salt of their sweat. They can sting if you swat them, so don't swat the sweat bees. There are more than 500 species in this family in the United States. Most of them are small and not colorful, but a few look like brilliant little jewels. They carry pollen on their hairy hind legs back to their underground nests to feed their larvae.

LARGE CARPENTER BEES (FAMILY APIDAE)

One of our biggest bees, the Large Carpenter Bee prefers large tubular flowers they can crawl into to harvest nectar and pollen. For smaller flowers that they cannot crawl into, these bees will bite holes in the base to suck out the nectar.

Large Carpenter Bees are approximately an inch long. They look a lot like Bumble Bees, but lack dense fur on the abdomen. They excavate nest holes in wood, sometimes in buildings but usually prefer dead branches. Male Carpenter Bees may guard nests made by females against intruders, including other males and sometimes people. They can't sting but are big and ferocious looking.





LEAFCUTTER, MASON, AND RESIN BEES (FAMILY MEGACHILIDAE)

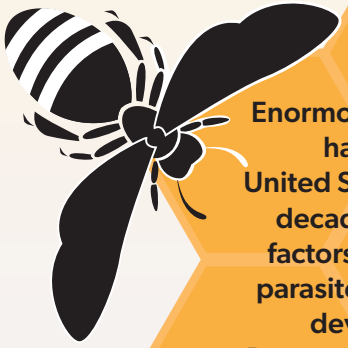
More than 600 different kinds of leafcutter bees have been found in the United States. These bees make the semicircular cuts you see in the leaves of your rosebushes. The cutting usually does not really harm the plant, and the bees use the pieces they remove to make cozy nests for their offspring. The mother bee carries pollen on the underside of her abdomen to feed to her offspring. Leafcutters are likely to use bee hotels (man-made nests or houses).

DID YOU KNOW?

Some bee species have declined dramatically over the past two decades, with some formerly common species disappearing entirely from some areas and others becoming endangered. Causes include introduced diseases, climate change, seasonal lack of available flowers, and other unknown reasons.

HONEY BEES (FAMILY APIDAE)

Spanish settlers introduced the Honey Bee *(Apis mellifera)* as a domestic animal to the Western world in the 1500s. Wild descendants of domestic Honey Bee colonies became established throughout the Western world and can be found almost anywhere flowers grow.



DID YOU KNOW?

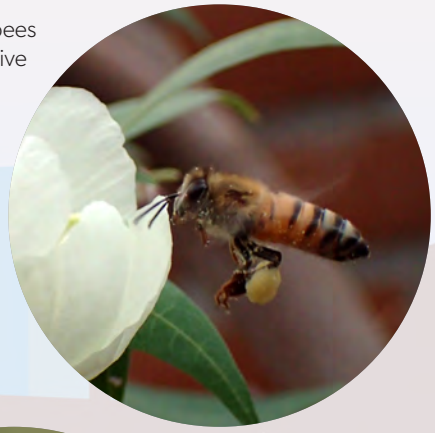
Enormous losses of Honey Bees have occurred in the United States over the past three decades because of various factors, including introduced parasites, diseases, and newly developed pesticides. Domestic bees have declined by an average of 30% per year, and many wild Honey Bee colonies have died.

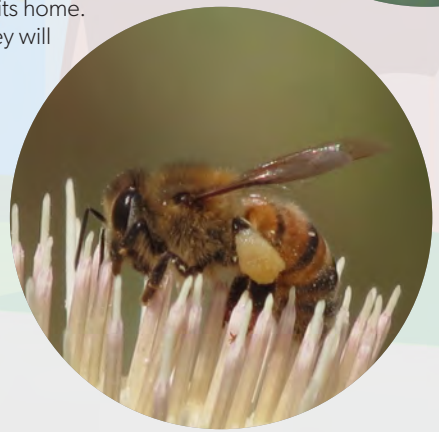
Honey Bees are well adapted to urban life, with some domestic bees living in backyard or rooftop bee hives, and some wild residents live in building walls, attics, hollows in trees, or holes in the ground.

Honey Bees are considered important pollinators of thousands of species of plants and are among the world's most valuable domestic animals. Unfortunately, we don't yet have a clear understanding of how Honey Bees have affected populations of native bees and other pollinators or what their impact has been on native plants and other animals.

When a Honey Bee colony becomes crowded, some of the residents choose a new queen and take off in search of a new home. During this search, the swarm of bees may rest on trees or buildings temporarily. This may look scary, but the swarm will likely be docile because it is not defending its home. Once these bees establish a new home, they will defend it.

Honey Bees defend their homes and stores of honey against predators as a group, with each individual giving its life by stinging and leaving its stinger embedded in the attacker. Honey Bees can be dangerous to people and are statistically the most dangerous animals in the United States, having directly killed more people than any other creature except human beings.





THE EUROPEAN HONEY BEE IS THE STATE INSECT OF

BUTTERFLIES (ORDER LEPIDOPTERA)

It may seem almost impossible to identify every species of butterfly you see, but butterflies fit neatly into a few different families that are easy to recognize, and representatives of each family are found throughout the United States.

Butterflies play an important role in pollination, even though they do not pick up as much pollen as bees do. Plant species such as milkweed and other wildflowers depend on butterflies to transfer pollen. Butterflies typically visit flowers that grow in clusters, are brightly colored, and are open during the day when butterflies are most active. A butterfly will land on a flower and use its long mouthpart, called a proboscis, like a straw to reach deep into the flower and suck out the nectar. The butterfly will collect pollen on its body, fly to another flower to feed, and deposit the pollen there. Butterflies have good vision and a keen sense of smell, and they taste with their feet as well as the end of the tongue!

Here are some examples of each family that you may see in your backyard, neighborhood, or local park.

DID YOU KNOW?

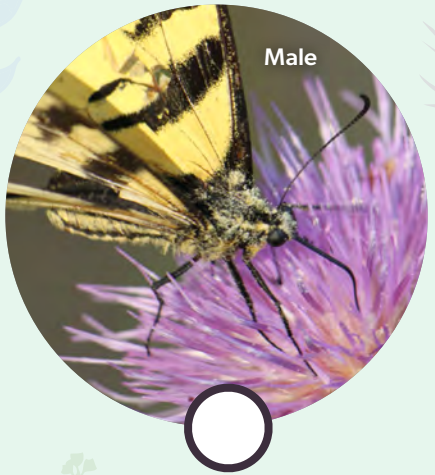
There are about 20,000 species of butterflies in the world.

Giant Swallowtail caterpillars eat leaves of citrus, prickly ash, and hop tree. The adults drink nectar from many kinds of flowers and are common in cities and suburbs.

SWALLOWTAILS (FAMILY PAPILIONIDAE)

Swallowtails are the largest butterflies in North America and are quite conspicuous with their vivid yellow and black markings. The wings of most Swallowtail species have tails, although some of these tails are small. Many species in this family feed on the leaves of trees or shrubs as caterpillars, whereas others feed on wildflowers or vines during that life stage.

Eastern Tiger Swallowtail A common and conspicuous butterfly in town and country, the adults feed on many kinds of flowers. Caterpillars eat leaves of trees and shrubs of many kinds. Females may be yellow or black.



A male Eastern Tiger Swallowtail, its head covered with pollen, takes a sip of thistle nectar

WHITES AND SULPHURS (FAMILY PIERIDAE)

Members of this butterfly family are usually associated with plants of the mustard family, which they feed on as larvae and adults. A few may even be garden and farm pests. With dozens of species in this family, you must get a very good look to identify them.

Cabbage White

Checkered White

Orange Sulphur

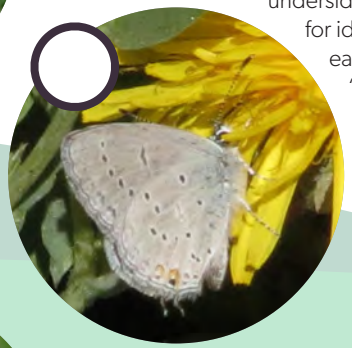
Clouded Sulphur

Southern Dogface

GOSSAMER-WINGED BUTTERFLIES (FAMILY LYCAENIDAE)

These are mostly small butterflies, many are blue or gray, and some have tiny tails that may confuse predatory birds by imitating the head end. If a bird grabs the tail, the butterfly can escape. Most abundant and widespread members of this family are hairstreaks and blues, although some of them are very local and a few are endangered species. Most members of this family land with their wings folded, and the markings on the undersides of the wings are important for identification. Sometimes it is easier just to identify one as a "blue" or "hairstreak."

Spring Azure



Eastern Tailed-blue

Acadian Hairstreak

Banded Hairstreak

Gray Hairstreak

Striped Hairstreak

BRUSH-FOOTED BUTTERFLIES (FAMILY NYMPHALIDAE)

A large family with eight subfamilies and more than 6,000 species in the world, these butterflies are named for their reduced front feet, which may be used as brushes to clean the butterfly's face and taste organs. Most of these butterflies are fairly large and colorful. Here are a few that you are likely to see around town.

Red Admiral
Larvae eat nettles.

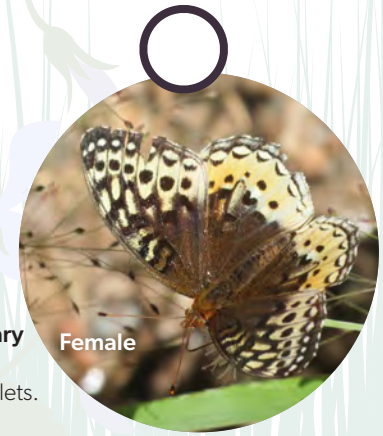
Painted Lady
The larvae of this species, which is the world's most common butterfly, eat asters, thistles, and mallows.

Common Wood-Nymph
Eye spots may have variation in the amount of yellow. Larvae feed on grasses.

Milbert's Tortoiseshell
Larvae eat nettles.

Common Buckeye
Spots may look like scary eyes to birds and other predators.

Mourning Cloak
The larvae of this species eat willow, cottonwood, and Chinese elm.



Great Spangled Fritillary
Male and female look quite different. Larvae feed on violets.

Pearl Crescent
Larvae eat asters.

DID YOU KNOW?

In North America, about 725 species have been documented north of Mexico, with about 575 of these occurring regularly in the lower 48 United States and 275 occurring in Canada.

MONARCH BUTTERFLIES

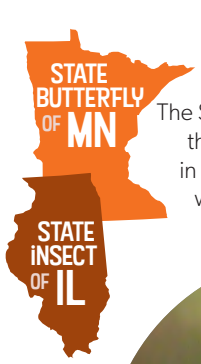
Possibly the best-known and most-loved North American butterfly, the Monarch is in serious trouble.

Once one of our most abundant butterflies, Monarchs have become scarce. Millions of Monarchs originating in the Eastern United States, and some in the West, used to spend the winter perched on tree branches in a tiny area in a mountain range in Mexico. There, they found the perfect temperature and weather conditions to survive the winter. Most of those that grew up west of the Rocky Mountains used to spend the winter perched on trees in a few areas along the Pacific Coast in California. In their wintering areas, the Monarch-covered trees were a great tourist attraction. Imagine millions of orange and black beauties swirling around your head, filling the sky above you, and festooning the trees.

Because of exposure to insecticides, changes in farming practices, loss of trees on the wintering grounds, bad weather, climate change, and unknown reasons, the Monarch population has crashed. The U.S. Fish and Wildlife Service has determined that Monarchs warrant listing as a threatened species under the Endangered Species Act, but the agency lacks the budget capacity to protect the butterfly.

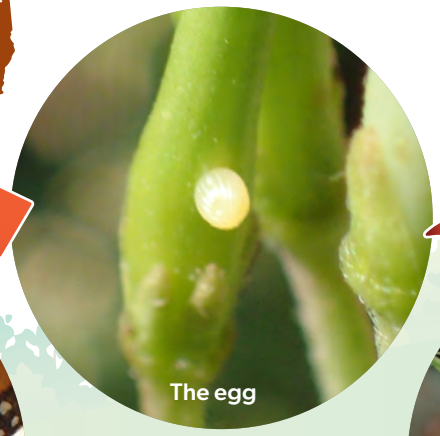
In the absence of legal protection, citizens, businesses, local organizations and governments, utility and transportation agencies, and several national nonprofit organizations are committing to work individually and collectively to protect the Monarch.

To learn more, including what you can do, visit one of the websites listed on the last page of this booklet.



The State Butterfly of Minnesota and the State Insect of Illinois, the Monarch depends upon an abundance of wildflowers in Spring and Fall to power its mass migration between its wintering grounds in Mexico and its northern breeding grounds throughout the United States.

THE LIFE CYCLE OF A MONARCH BUTTERFLY


The egg


A caterpillar


A chrysalis


Ready to emerge: a new butterfly


A new male Monarch, ready to fly, find a mate, and continue the cycle


A female Monarch lays an egg on a milkweed

DID YOU KNOW?

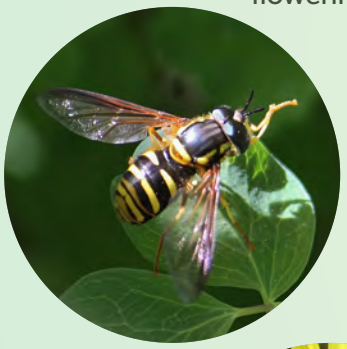
There are more than 100 species of milkweed in North America.

Monarchs like many kinds of milkweed. To learn which kind to plant, consult a local nursery.

FLIES (ORDER DIPTERA)

Shoo fly! Don't bother me!

But wait! Flies are important pollinators as well, second only to bees! Flies can visit flowers to feed on nectar, and as they do, pollen sticks to hairs on their body when they move to the next flower. Some flowers even give off the scent of rotting meat to attract flies for pollination. Some flies mimic the appearance of bees with black and yellow stripes. Others, such as biting midges, are believed to be the only insect to pollinate the flowers of the cacao tree. These tropical trees require a tiny pollinator to navigate their flowers. Without these flies, there would be no chocolate! As annoying as some species of flies may be, remember other species of flies are important pollinators of more than 100 types of fruits, flowering plants, and other crops.



Flies in the family **Syrphidae** are called "flower flies" because they are usually seen visiting flowers. They are also called "hover flies" because they are skilled at hovering while they sip nectar.

Flies in the family **Tachinidae** are covered with spiky hairs that carry pollen as the insects feed on nectar. The larvae of these species develop as parasites in caterpillars and other insects. There are more than 1,300 species in North America. Some members of this family are large, colorful, and ferocious looking but harmless. Most of them are small and inconspicuous.

Flies in the family **Calliphoridae** may be shiny green, blue, or gold. Also known as "Blow Flies." The larvae of one species has been used medicinally to clean up wounds and minimize scar tissue.

BEETLES (ORDER COLEOPTERA)

There are more kinds of beetles (350,000+) than any other kind of animal. Some species feed on flowers, consuming pollen and nectar and carrying pollen as they move about. Here are a few examples you might find.

Soldier Beetles (family Cantharidae) may have orange and black warning colors that tell predators "I'm poisonous, so don't touch me!"

Fig Beetles (family Scarabaeidae) consume nectar, pollen, and fruit.

Blister Beetles (family Meloidae) are pretty but contain defensive chemicals that can cause painful blisters to those who handle them.

Metallic Woodborers (family Buprestidae)

The adults of these species feed and often mate in flowers. The larvae live in and eat wood.

Longhorned Beetles (family Cerambycidae) have antennae that are longer than their bodies.

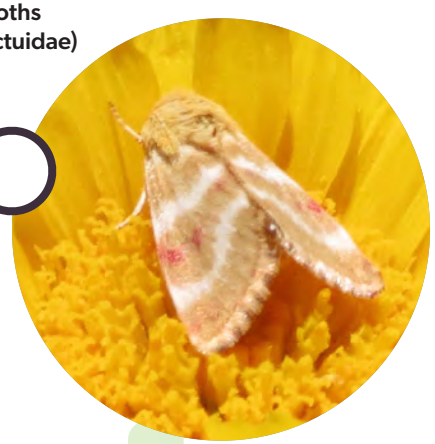
BEYOND YOUR BACKYARD

LOOK FOR THESE POLLINATORS WHEN YOU'RE AT YOUR LOCAL PARK, WETLANDS, OR FORESTED NATURAL AREA

MOTHS

There are many times more moths than butterflies (about 10,000 species of moths vs. 725 butterflies in North America), but we seldom see moths in their roles as pollinators because most are nocturnal. In our urban and suburban environment, many moths are confused by artificial lighting and do not survive to fill the role, but as we get away from lights, we may see more moths doing the job of visiting flowers, drinking nectar, and carrying pollen. Here are a few moths you might see, but there are many, many more. Cutting down on unnecessary artificial light pollution is one thing we can do to protect our nocturnal pollinators.

Flower Moths
(Family Noctuidae)



Lichen Moth
(Family Erebidae)

Plume Moth
(Family Pterophoridae)

Dart Moth
(Family Noctuidae)

White-lined Sphinx Moth
Its wings blur when this large moth hovers to reach its proboscis to the depth of flowers to extract the sweet nectar.

PLANTS

The primary function of flowers is to attract animal pollinators, many of which rely on nectar as their primary energy source. That is why flowers produce nectar, are colorful, and have odors. Many smell sweet, but some flowers smell like rotting meat, others like mushrooms, and some even smell like dung to attract appropriate pollinators. About 80% of all flowering plants depend upon animals to transfer pollen between plants. The following flowers are pollinator favorites that you are likely to see in the Midwest.

CARDINAL FLOWER

THISTLE

BLANKETFLOWER

VIOLET

GOLDENASTER

WILD BERGAMOT

MORE POLLINATOR FAVORITE PLANTS YOU'RE LIKELY TO SEE

COMMON MILKWEED

PRAIRIE ROSE

SUNFLOWER

PURPLE ASTER

FLEABANE

PURPLE CONEFLOWER

YARROW

SILVERLEAF NIGHTSHADE

Providing for Pollinators: Food, Shelter, Water

Like all wildlife, pollinators need three basic things: food, shelter, and water. These are fairly easy to provide at some level, from a window box to a wildlife park. You don't need a lot of space to attract some interesting and wonderful creatures.

Ruby-throated Hummingbird at feeder

Food

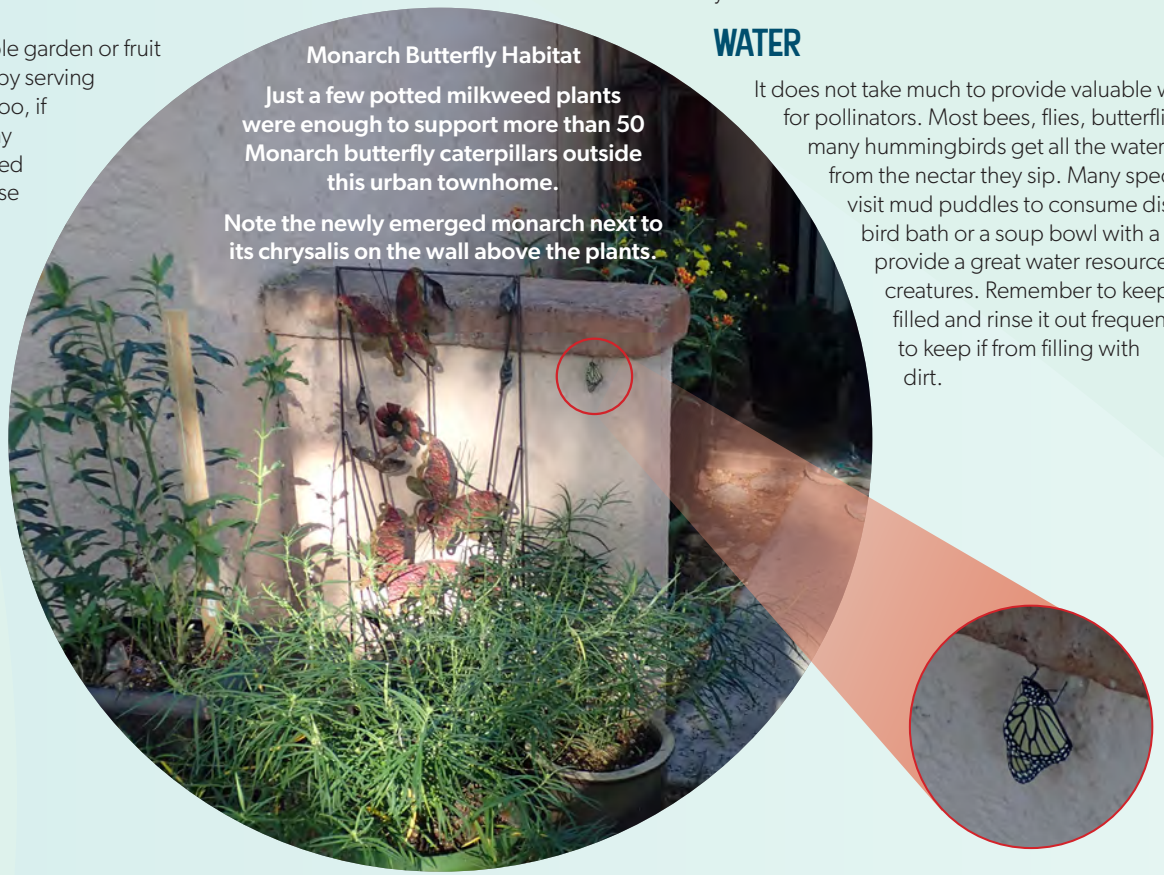
Perhaps the most important trick is to provide resources that are available in time for the different life stages of pollinators. Migrating hummingbirds and butterflies will stop to visit and possibly nest if suitable food is available when needed. Bees, butterflies, and other insects emerging from the pupal stage will be hungry, and having access to food is critical to their survival. Dandelions are among the best early foods for many kinds of native insects. Long-flowering native sunflowers have been found to provide food for more than 400 species of native bees. Autumn flowers are essential for overwintering queen bumble bees.

Grow a Vegetable Garden

If you have the space to grow a vegetable garden or fruit trees, your produce will benefit greatly by serving pollinators. The pollinators will benefit too, if you don't use chemical pesticides. Many nursery plants and some seeds are treated with pesticides to deter insects, but these chemicals can be deadly to visiting pollinators, too. Be certain to use only plants and seeds that are assured to be free of toxic products. Some plant nurseries sell or specialize in toxin-free plants and seeds. When in doubt, ask the nursery staff, and if the answer is, "I don't know," don't buy those products for your pollinator garden.

Hang a Hummingbird Feeder

Hummingbird feeders may provide the primary food resource for some urban wildlife. An inexpensive simple feeder can support a family of hummingbirds. It is important to keep feeders filled and clean. Some feeder designs attract honey bees, which may become a nuisance.



Monarch Butterfly Habitat

Just a few potted milkweed plants were enough to support more than 50 Monarch butterfly caterpillars outside this urban townhome.

Note the newly emerged monarch next to its chrysalis on the wall above the plants.

Shelter

Some native bees and flies will use artificial nest sites or make their own nests if we provide the basic elements. "Bee hotels" are easy to make following plans online, and ready-made models are widely available for purchase. Bee hotels must be available when mother bees are looking for places to nest, so it is best to have them available early in spring. Try not to be discouraged if hotels are not used the first year. Other native pollinators will build nests in bare dirt, and some will nest under dead leaves or grass. Letting grass in your lawn grow just a bit taller or mixing lawn grass with low-growing flowers can provide both food and shelter. Rooftop gardens, even in large urban areas, can provide great resources for some pollinators, especially if nesting or resting sites are included. Hummingbirds may nest on trees, rafters, or other parts of your house if those areas are left undisturbed.

Bee Hotel

Water

It does not take much to provide valuable water for pollinators. Most bees, flies, butterflies, and many hummingbirds get all the water they need from the nectar they sip. Many species of butterflies also visit mud puddles to consume dissolved minerals. A bird bath or a soup bowl with a few rocks in it may provide a great water resource for small creatures. Remember to keep it filled and rinse it out frequently to keep if from filling with dirt.

Blues at mud puddle

ADDITIONAL RESOURCES

- Pollinator Partnership

ONLINE GUIDES FOR INSECT IDENTIFICATION

- BugGuide
- Butterflies and Moths of North America

MORE DETAILED INFORMATION, INCLUDING HOW TO ATTRACT AND PROVIDE FOR POLLINATORS

- The Bees in Your Backyard
- Xerces Society provides a wealth of information, including regional planting guides.
- How to Help Pollinators in Your Own Garden
- How to Build a Pollinator Garden
- Missouri Botanical Garden
- Chicago Botanic Garden
- Minnesota Landscape Arboretum
- International Peace Garden

BOOKS

- The Bees in your Backyard
- A Swift Guide to Butterflies of North America
- Kaufman Field Guide to Butterflies of North America
- Kaufman Field Guide to Insects of North America

ONLINE VIDEOS:

- Pollinators Under Pressure features several short videos about pollinators.
- Wings of Life is a spectacular feature film by Disney Nature that can be rented or purchased from YouTube.

QUESTIONS
ON THOSE
WINGED FRIENDS?

Contact us at
POLLINATORS@SWCA.COM

Photo credits: Ruby-throated Hummingbird in-flight and at feeder: DepositPhotos; Rusty-patched Bumble Bee: Susan Day, UW-Madison Arboretum, from USFWS; all other photographs courtesy of Dr. Ken Kingsley.