



\*\*\*\*\* FOLLOW UP ACTIONS \*\*\*\*\*

1. Create a pollinator habitat in your own yard. Plant pollinator friendly plants such as: Michigan's native milkweed, wildflowers, butterfly bush, crocus, hyacinth, wild lilac, bee balm, echinacea, snapdragons, russian sage, zinnias, sedum, asters, witch hazel, and goldenrod. Herbs are also very happy to receive bee-visits. Plant chives, thyme, oregano, or basil to help local bees create "locally" flavored honey! Annuals such as Lantana, Nasturtiums, Zinnias, Cosmos, Marigolds, Tithonia (also known as Mexican Sunflowers), and Dill. Perennials we can plant are Purple Coneflowers, Aster, Catnip, Daisies, Coreopsis, Monarda or Bee Balm, Yarrow, Sedum, Phlox, Liatris.
2. Don't buy plants treated with neonicotinoids and reduce or eliminate pesticide use in your landscape. The EPA (environmental protection agency) has formed a Pollinator Protection Agency and has written guidelines for handling neonicotinoids. States have been asked to administer the protections. Michigan has formed an agency that is coordinating protection agreements between farmers, beekeepers and pesticide manufacturers. There are also new warning labels that include instructions for consumers.
3. Suggested places to buy your plants (contact details are posted on the IHGC website):
  - Hidden Savanna Nursery, Kalamazoo, MI.
  - Michigan Wildflower Farm, Portland, MI.
  - Native Connections, Three Rivers, MI.
  - The Native Plant Nursery LLC, Ann Arbor, MI.
  - WildType Ltd., Mason, MI.
  - Cardno Native Plants, Walkerton, In.
4. Register your garden for the "Million Pollinator Challenge  
[Millionpollinatorgardens.org](http://Millionpollinatorgardens.org)
5. Don't forget to include a water source and/or bird houses in your garden.
6. Only buy local honey. Suggested sources of local honey
  - Gary Kunkel, St. Joseph, MI. Tel: 269.925.6193
  - Family Farm & Home, Cinema Way, Benton Harbor
  - Purely Michigan, 406 State St., St. Joseph, MI.
7. Continue the campaign to make the Black Swallowtail the official State of Michigan butterfly. Senate bill 298. Contact Senator John Proos.



# Pesticide Concerns



Pesticide use has become so commonplace that nearly 85% of U.S. homeowners routinely use at least one weed killer, fungicide, or insect spray. In a recent study, researchers analyzed pollen from bee hives and found 35 *different* pesticides present along with high fungicide loads. Experts believe pollinators are acutely affected by these chemicals. Many are lethal. But pesticide levels that don't kill often have long term, sub-lethal effects on a pollinator's ability to survive by weakening their immune system, ability to reproduce, causing behavioral disruptions such as disorientation, reduced foraging, impaired memory and learning, and a shift in communication behaviors. Visit: <https://www.epa.gov/pollinator-protection>

## Colony Collapse Disorder

is a syndrome characterized by the sudden loss of adult bees from the hive. The US Department of Agriculture has reported to Congress that a combination of many factors may be causing CCD, including pesticides, pathogens, and parasites, all of which have been found at high levels in affected bee hives. Visit: <http://www.nwhoneybee.org/>

## The Aftermath

Woodland creatures and garden visitors such as birds, small mammals, and frogs are at significant risk when pesticides are misused. All are crucial to the delicate, complex ecosystem balance and need our protection too. Children and pets are equally at risk when exposed.



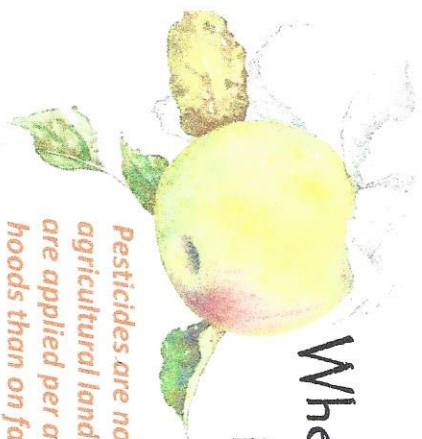
YELLOW LADY-SLIPPER *Cypripedium calceolus*



Eastern Tailed-Blue Butterfly (Above)

Eastern Gray Treefrog

# When Pesticide Use is Necessary



*Pesticides are not just a problem on agricultural lands. More pesticides are applied per acre in urban neighborhoods than on farmlands.*



- If you must use pesticides, please use them sparingly.
- Follow all label directions and precautions.
- Don't apply pesticides when pollinators are likely to be flying. (Bees are inactive one hour after sunset to two hours before sunrise or when temperatures are below 55 F.)
- Early evening application is best so pesticides can dry overnight.
- To minimize drift, don't apply pesticides on a windy day.
- Don't apply pesticides to blooming flowers.
- Don't overuse these toxic chemicals. Be responsible.

## Purchase Plants Wisely

Unknowingly, conscientious gardeners may be purchasing what they believe are pollinator-friendly plants which are instead poisoning pollinators. Many big box stores and other retailers sell plants treated with "Neonicotinoids". Although banned in many countries, these insecticides are legal in the U.S. and implicated as the leading chemical cause of the nation's honeybee decline. They are systemic – which means they travel throughout a plant and distribute chemicals to all parts of the plant tissue 24/7, including its nectar and pollen. Check labels carefully for neonicotinoids or speak to nursery management about their presence. If in doubt, purchase elsewhere. Be proactive. Visit: <http://xerces.org/neonicotinoids-and-bees/>

We need plants. Plants need bees.



# Careful with Pesticides!



## Why are Bees and Other Pollinators Important to Us?

Pollinators include bees, butterflies, moths, birds, bats, beetles and other insects that move pollen within flowers, or carry it from flower to flower.



About 1/3 of the food you eat such as almonds, berries and many other fruits and vegetables depend on pollinators.

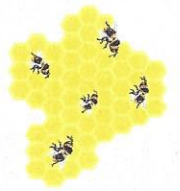


## What is Happening to Bees?

Honey bee colonies have been lost at unprecedented rates in recent years. The decline in honey bee health is a difficult problem with multiple contributing factors including: loss of habitat, parasites and disease, genetics, poor nutrition and pesticide exposure.



Pesticides known to be particularly harmful to bees have special labels on them. To protect bees, it is important to read and follow label instructions when you use pesticides in your garden.





# BEE Extra Careful

Some pesticides are highly toxic to bees. Overuse and misuse of pesticides can be bad for pollinators. Think about when and where pesticides may be applied without harming pollinators. For example, do not apply to blooming flowers, or at any time you see pollinators in an area.



Do not apply



If needed, okay to apply

Tips for protecting bees when pesticide use is necessary:

- Do not apply pesticides when bees are likely to be flying.
- Bees generally are inactive from one hour after sunset to two hours before sunrise or when the temperature is below 55 F.
- Early evening application is best so pesticides can dry during the night.
- To minimize drift, do not apply pesticides on a windy day.

**Step 1: Identify the problem**  
Knowing the problem is the first step towards solving it.

**Step 2: Try to solve the problem without pesticides**  
Pests can often be managed safely without use of pesticides. Explore the University of California statewide Integrated Pest Management Program: <http://www.ipm.ucdavis.edu/index.html>

**Step 3: Find the product that solves the problem**  
All products do not work on every pest. Labels tell how and when products should be applied to deal with certain types of pests.

## How You Can Help When Managing Pests in Your Garden

**Step 4: Buy and use the right amount; more is not necessarily better**  
Product labels tell how much to use to treat a problem. Using more can harm plants and lawns, and may be unsafe for people and pets. Some products might not work as well after being stored for a long period. A larger size might not be a good value.

**Step 5: Use the product according to the label**  
Labels tell how to safely use products for best results. Use only the amount indicated. If the label tells you to mix a product in another container, make only as much as you can use. Do not ever apply more than is allowed by the label.

**Step 6: Pay attention to warnings affecting bees and other pollinators**  
Understand when and how to apply the product to ensure pollinator safety.



Use pollinator-friendly plants in your garden. Different flower colors, shapes and scents will attract a wide variety of pollinators. If you have limited space, you can plant flowers in containers on a patio, balcony and even window boxes.

## Plant Pollinator-Friendly Flowers

Reduce or eliminate pesticide use on your pollinator-friendly garden. Incorporate plants that attract beneficial insects for pest control. If you use pesticides, follow the directions to be sure you use the pesticide safely.



Find more information about pollinators at EPA's Pollinator Protection web page:

<http://www2.epa.gov/pollinator-protection>



**Report Bee Kills**  
To report a large bee kill, please contact the U.S. Environmental Protection Agency at: [beekill@epa.gov](mailto:beekill@epa.gov)





## Million Pollinator Garden Challenge



The Million Pollinator Garden Challenge (MPGC) is a nationwide call to action to preserve and create gardens and landscapes to help revive bees, butterflies, birds, bats and other pollinators. The MPGC mobilizes America's extensive gardening community and provides information and support for utilization of more native and non-invasive pollen and nectar producing plants in gardens and landscapes. The Challenge, in partnership with the National Garden Clubs, encourages understanding of our vital role in reversing the crisis of pollinator decline.

Visit: <http://millionpollinatorgardens.org/>

### Pollinator Gardens Should:

- Use plants that provide nectar and pollen sources.
- Provide a suitable water source.
- Be situated in sunny areas with wind breaks.
- Create large "pollinator targets" of native or non-invasive plants.
- Establish continuous bloom throughout the growing season.
- Eliminate or minimize the impact of pesticides.

### What to Include:



*Nine-spotted ladybug*

- Plant a variety of flowers so something is blooming in all seasons.
- Group large patches of pollinator plants to encourage foraging.
- If monarch butterflies are native to your area, help them by planting milkweed, which monarch caterpillars require for nutrition.
- Avoid insecticides, including organics. They're created to kill insects.
- Be patient - it takes time for pollinators to locate new gardens, especially when they're located a distance from wild lands.

## Bee One in a Million



Register your garden and be added to the MPGC "Pollinator Partnership" map. Visit: <http://pollinator.org/mpgcmmap/>

## Plant for Pollinators



*Bumble bee*

Pollinators desperately need our help. All across the globe, tremendous numbers of pollinators are in rapid decline, and many species are threatened with extinction. Although several factors contribute to this alarming trend, increasing nectar and pollen sources provided by pollinator-friendly gardens and landscapes is more important than you may realize, and even a small garden can make a remarkable difference.

Native plants are the best pollinators. They have evolved together with pollinators to adapt to your local soil, climate and growing season. Often, non-native plants don't provide adequate nectar for pollinators.

A call to your local *Cooperative Extension Office* will provide valuable information about native plants in your area. Online organizations such as *Pollinator Partnership*, the *Lady Bird Johnson Wildflower Center* or the *Xerces Society* are valuable resources too. Also check out *MSU Extension's* informative bulletin and full listing of native plants at <http://www.canr.msu.edu/nativeplants/uploads/files/E2973.pdf>

### Michigan's Native Flowering Plants

(a partial list of the most bee friendly)

- Blue lobelia – *Lobelia siphilitien*
- Cow parsnip – *Heracleum maximum*
- Culver's root – *Veronicastrum virginicum*
- Cup plant – *Silphium perfoliatum*
- Golden Alexanders – *Zizia aurea*
- Hairy beardtongue – *Penstemon hirsutus*
- Late figwort – *Scrophularia marilandica*
- Meadowsweet – *Spiraea alba*
- Riddell's goldenrod – *Solidago riddellii*
- Sand coreopsis – *Coreopsis lanceolata*
- Swamp milkweed - *Asclepias incarnata*
- Yellow coneflower – *Ratibida pinnata*
- Yellow hyssop – *Agastache nepetoides*
- Wild strawberry – *Fragaria virginiana*



*Red Clover – Trifolium pratense*

# Michigan Native Plant Producers Association Contact Information

*Sources for Michigan native plants and seeds*



## **Hidden Savanna Nursery**

Chad Hughson  
18 N. Van Kal St.  
Kalamazoo, MI 49009  
Phone: 269 352-3876

Email: [info@hiddensavanna.com](mailto:info@hiddensavanna.com)  
Website: [www.hiddensavanna.com](http://www.hiddensavanna.com)

*Michigan native wildflowers, grasses, shrubs and trees sold in containers and plugs. Specializing in Southwest Michigan genotypes.*

## **Michigan Wildflower Farm**

Esther Durnwald  
11770 Cutler Rd.  
Portland, MI 48875-9452  
Phone: 517 647-6010  
Fax: 517 647-6072

Email: [wildflowers@voyager.net](mailto:wildflowers@voyager.net)  
Website: [www.michiganwildflowerfarm.com](http://www.michiganwildflowerfarm.com)

*Michigan native wildflower and grass seed, consultation, installation, and maintenance.*

## **Native Connections**

Jerry Stewart  
17080 Hoshel Rd.  
Three Rivers, MI 49093  
Phone: 269 580-4765  
Fax: 269 273-1367

Email: [jerry@nativeconnections.net](mailto:jerry@nativeconnections.net)  
Website: [www.nativeconnections.net](http://www.nativeconnections.net)

*Michigan genotype grass seed, design, consultation, installation, and management.*

## **The Native Plant Nursery LLC**

Greg Vaclavek  
P.O. Box 2292  
Ann Arbor, MI 48106  
Phone: 734 677-3260

Email: [plants@nativeplant.com](mailto:plants@nativeplant.com)  
Website: [www.nativeplant.com](http://www.nativeplant.com)

*Michigan native wildflowers, grasses & shrubs; organically grown from locally collected seed.*

## **WILDTYPE ltd., native plants, ecological services**

Bill Schneider  
900 North Every Rd.  
Mason, MI 48854  
Phone: 517 244-1140  
Fax: 517 244-1142

Email: [orders@wildtypeplants.com](mailto:orders@wildtypeplants.com)  
Website: [www.wildtypeplants.com](http://www.wildtypeplants.com)

*Native trees, shrubs, wildflowers, and grasses: plugs and small containers. Design, planning, and management of native landscapes.*

[www.mnppa.org](http://www.mnppa.org)

*Growing Michigan's Natural Heritage!*

*rev. 2017-05-04*





# Million Pollinator Garden Challenge

Everyone can answer this call to action to preserve and create gardens and landscapes that help revive the health of bees, butterflies, birds, bats and other pollinators across the country. We will move millions of individuals, kids and families outdoors and make a connection between pollinators and the healthy food people eat.

## Three Simple Steps

		
<b>1.</b> Plant Something for Pollinators	<b>2.</b> Register Your Garden at <a href="http://MillionPollinatorGardens.org">MillionPollinatorGardens.org</a>	<b>3.</b> Spread The Word and Get Others to Join In!

### Pollinator Gardens Should:

- Use plants that provide nectar and pollen sources
- Provide a water source
- Be situated in sunny areas with wind breaks
- Create large "pollinator targets" of native or non-invasive plants
- Establish continuous bloom throughout the growing season
- Eliminate or minimize the impact of pesticides

### Register your Garden to BEE Counted

Add a photo of your garden or landscape to the S.H.A.R.E map. Anyone and any size garden can join in our campaign to reach one million sites for pollinators!

### Keep the Challenge Growing!

Invite others to your garden and talk to everyone about the importance of pollinators and how you can help!

### Need help finding the right plants in your area?

Ask your local nursery, native plant society, public garden, nature center or state university extension master gardener program.

For more gardening tips for pollinator friendly planting:  
[MillionPollinatorGardens.org](http://MillionPollinatorGardens.org)

# MillionPollinatorGardens.org



# THANKS FOR JOINING THE MILLION POLLINATOR GARDEN CHALLENGE

WE ARE GLAD TO HAVE YOU INVOLVED.

## DID YOU KNOW?



### Anyone can be a Citizen Scientist!

You can be part of a collaborative effort to track and conserve pollinators by collecting data on pollinators in your yard, garden, school and park. Citizen science projects are helping to establish baseline information on pollination services for the entire country and critical resources for pollinators, while also helping scientists to identify areas of conservation concern.



1 in 3

### Pollinators are responsible for 1 out of 3 bites of food we take each day.

Pollinated foods are super foods, as many essential nutrients and antioxidants we consume come from plant products that are pollinator dependent. Despite their importance, they are at pivotal point in their own survival. Many reasons contribute to their recent decline. We know for certain, however, that more nectar and pollen sources provided by more flowering plants and trees will help improve their health and numbers. Increasing the number of gardens and pollinator-friendly landscapes will help revive the health of bees, butterflies, birds, bats and other pollinators across the country. Every household, business, community and school can provide food and habitat for pollinators.



### How Professionals are Helping

**Nursery & Landscape Professionals, Farmers, Horticulturists, and Land Managers** are providing pollinator habitat and using pollinator safe land management practices. **Landscape Designers and Landscape Architects** are key players in improving pollinator habitats that provide invaluable ecological services. Pollinator-friendly practices are being used for roadside vegetation management for **State DOTs, transportation agencies and roadside managers. Local Government and City Planners** are getting involved through the Mayor's Pollinator Protection Task Force and the Mayor's Monarch Pledge.

Help Us Plant  
One Million Gardens



The Million Pollinator Garden Challenge was launched by The National Pollinator Garden Network (NPGN), a collaboration of stakeholders from horticulture business, garden, pollinator, and conservation communities working together to support the health of pollinating animals. Eight founding private nonprofit members convened in Fall 2014 to propose public/private sector efforts to help restore critical pollinator populations in support of the President's National Strategy to "Promote the Health of Honey Bees and Other Pollinators."



# Register Your Pollinator Garden

Go to <http://millionpollinorgardens.org>

Scroll down to the map with all the dots.

Click on Register your Garden to BEE Counted.

From individuals, to schools, community groups, and businesses – everyone can make a difference!



Plant a pollinator garden

Any size is great! From window and patio planters, to herb gardens, to pathways and meadows, to acres of prairie and meadows – all can help! Click on the map to get gardens for



Support pollinator friendly businesses

Purchase plants or seeds from nurseries, garden centers, and seed suppliers who offer pollinator-friendly plants and seeds suited to your local area.



Register your Garden to BEE Counted

Add a photo of your garden or landscape to the MPGC/SHAKE map. Anyone and any size garden can join. **We are closing in on 1 million!** Your garden may help us reach a million sites for

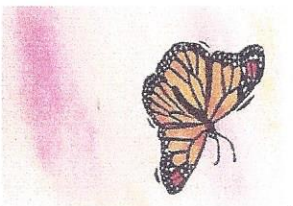
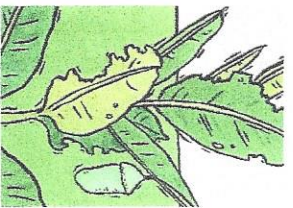


Click on the yellow Register button at the top of the page..

The screenshot shows the top navigation bar of the Pollinator Partnership website. The logo 'POLLINATOR PARTNERSHIP' is on the left, with the tagline 'Protect their lives. Preserve ours.' Below it. The navigation menu includes: WHO WE ARE, WHY POLLINATORS, OUR PROGRAMS, RESOURCES, STORE, and JOIN US. Below the navigation bar is a yellow bar with a 'Register' button and a search bar. Below that is a yellow bar with the text 'POLLINATOR SITES REGISTERED' and a large counter displaying '674827'.

Follow directions to register your garden!





*My garden is my most beautiful masterpiece. – Claude Monet*

## Michigan's Native Milkweed

There are over 100 species of milkweed in the US. Ideal growing conditions vary considerably, so familiarize yourself with each species' needs before planting. Choose native plants whenever possible. They support functioning ecosystems and preserve biodiversity in multiple, complex, amazing ways! Visit: <http://www.msue.msu.edu>

Commercially available milkweed native to Michigan:

Butterfly milkweed – *Asclepias tuberosa*

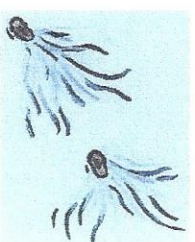
Common milkweed – *Asclepias syriaca*

Prairie milkweed – *Asclepias sullivantii*

Swamp milkweed – *Asclepias incarnate*

Tall milkweed – *Asclepias exaltata*

Whorled milkweed – *Asclepias verticillata*

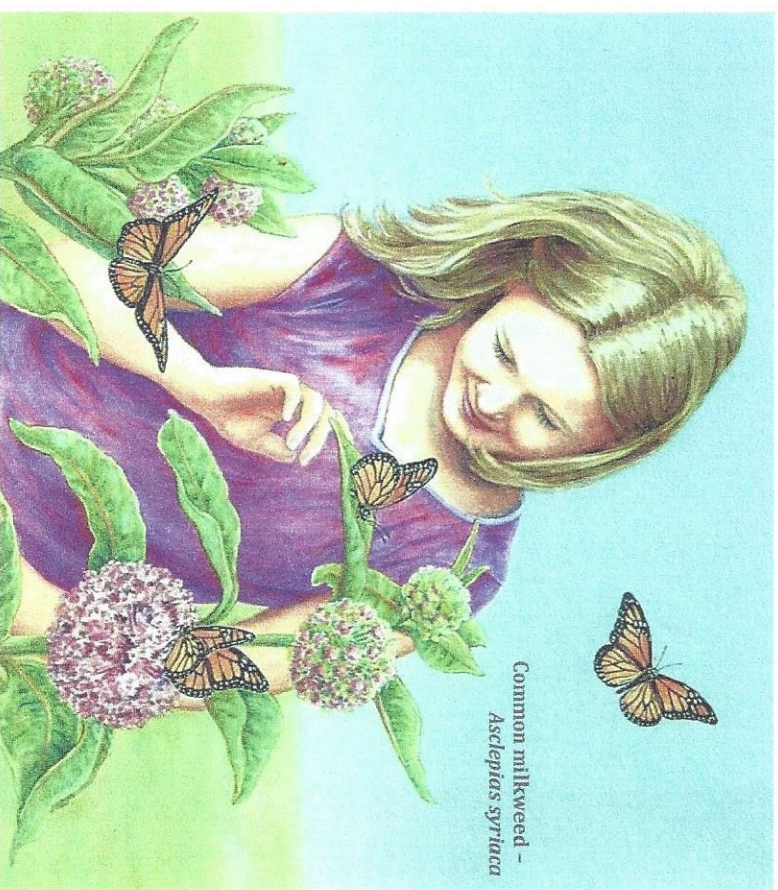


## Growing Milkweed

Milkweed can be difficult to transplant and temperamental to grow. These plants benefit from the natural process of vernalization, so always research before attempting to cultivate your own. Plant seedlings 2 feet apart in a sunny location and if possible, in groups of 6 or 8. Established, native plants typically don't need additional water, but seedlings may need watering during dry spells. Weed by hand and avoid insecticides. Be aware that milkweed grows from a long taproot, and some spread rapidly by means of underground rhizomes so be cautious if space is limited. Visit: <http://www.plantmilkweed.org>

## Monarchs Need Milkweed!

The monarch is one of the most beloved butterflies in North America, particularly admired for its spectacular migration. A flagship species for conservation, monarchs simply *cannot survive* without the *Asclepias* plants known as milkweed. Female monarchs, except on rare occasions, *only* lay their eggs on milkweed plants. Monarch caterpillars will *only* consume leaves from the milkweed and are unable to gain nourishment for their growth and development from any other source. Many factors such as habitat loss, increasing use of herbicides, and shifting land practices are all contributing to the severe decline in our monarch population. But the collective efforts of individual gardeners everywhere can make a difference to help the monarch population recover when milkweed plants are cultivated in private gardens. Milkweed not only provides monarchs with their vital food source, it also provides nectar to a diverse group of additional pollinators such as bees, hummingbirds, and dozens of other butterfly species. Bee proactive... Bee contributive... Plant milkweed! Visit: <https://www.monarchjointventure.org>



Common milkweed -  
*Asclepias syriaca*