WILD ONES®
Habitat Gardening in Central New York

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INSECTS:
The little things that run the world

Insects make up about half of all known living organisms. They include not only well-known pollinators such as bees and butterflies, but also beetles, flies, and wasps. Ants are insects too … and they're beneficial!

Many people think of insects as a nuisance. They don't realize that without them ***WE*** *are doomed.*
~ UN Environment

Insects play key roles in pollination, nutrient cycling, food chains of birds and other insectivores, are natural forms of pest control, and are one of the pillars of our ecosystems.

If we were to wipe out insects alone on this planet, the rest of life and humanity with it would mostly disappear from the land. Within a few months.
~ E. O. Wilson, biologist and Pulitzer Prize-winning author

Insect populations are in sharp decline

- 40% of insect **species** are in decline and could die out in the coming decades
- >75% decline in insect **abundance**

Why are they declining? Multiple threats:

- The wide use of insecticides
- Loss of and fragmentation of habitats
- Climate change
- Invasive species
- Light pollution

Learn how you can help (on back of this paper)

Communities taking action

Pollinator Pathways – Locate a Pollinator Pathway in your town or learn how to start your own: pollinator-pathway.org
Bee City USA and Bee Campus USA: beecityusa.org
Less Lawn More Life – in Upstate NY: lesslawnmorelife.com/

Learning more

Books
Tallamy, Doug - *Bringing Nature Home*
Darke, Rick and Doug Tallamy - *The Living Landscape*
Tallamy, Doug - *Nature's Best Hope* (also a Young Reader's edition)
Xerces Society - *Attracting Native Pollinators*
Eierman, Kim - *The Pollinator Victory Garden* by Kim Eierman

Download FREE PDFs (or purchase hard copies) of the following books at pollinator.org/shop/books
Bee Basics: An introduction to our native bees – Beatriz Moisset et.al.
…Bumble Bees of the Eastern United States - Sheila Colla et. al.

Websites
The Xerces Society: xerces.org - ***Lots of info*** including:
- Pollinator Conservation Fact Sheets on many topics at xerces.org/publications/fact-sheets
- Conservation Resources for your region at xerces.org/pollinator-resource-center
- Pesticides in Yards and Gardens: xerces.org/pesticides/pesticides-your-garden

Heather Holms books and resources:
Lots of info at pollinatorsnativeplants.com/resources.html

The Pollinator Partnership: pollinator.org - includes
- BeeSmart phone app and Planting Guides for each eco-region at pollinator.org/guides#zip
- Free signs to download: pollinator.org/garden-signs

The Million Pollinator Garden Challenge
millionpollinatorgardens.org/

Our Habitat Garden, a local HGCNY garden: ourhabitatgarden.org includes sections on insects, on bees, and on butterflies

You can help insects in your landscape

1) Reduce/eliminate pesticides and herbicides:

- Preferably be pesticide/herbicide-free — healthier for people (especially children) and pets, too
- Avoid bug zappers, which kill mainly beneficial insects not mosquitos
- Use pesticide alternatives such as the mosquito bucket
  How-to video: homegrownnationalpark.org/videos/

2) Plant native plants:

- Plant at least 75% native plants
  - We recommend species, not cultivars (named varieties)
  - Avoid commercially available plants treated with pesticides even if labeled as "Bee-Friendly"!
- Native Keystone plants support the most insects
  - Many are trees and shrubs, not just wildflowers
  - See HGCNY's CNY plant list at hgcny.org/learn/factsheets/
  - Find Keystone plants for your area:
    nwf.org/Garden-for-Wildlife/About/Native-Plants/keystone-plants-by-ecoregion
- Mass flowers together in one or more areas
- Provide a diversity of flowers:
  - A variety of colors such as blue, purple, yellow, white
  - A variety of shapes
  - A succession of blooms through spring, summer, fall

3) Provide nesting spaces and shelter:

- Leave some bare ground and dead wood (snags, logs)
- Provide appropriate caterpillar food plants for butterflies and moths (Ex: milkweed for monarch caterpillars)
- "Leave the leaves" to provide overwintering areas -
  See xerces.org/leave-the-leaves
- "Save the stems" as egg-laying sites
  See xerces.org/blog/moving-beyond-flowers-natural-nesting-habitat-for-bees-and-other-insects
- Provide soft landings for overwintering –
  See pollinatorsnativeplants.com/softlandings.html

4) Reduce light pollution:

Outdoor light impacts how insects hunt, mate, and makes them more vulnerable to predators

- Eliminate ornamental lighting
- Use motion-detector lights for security lighting
- Use yellow light bulbs where lighting is necessary
- Principles of responsible lighting:
  darksky.org/resources/guides-and-how-tos/lighting-principles/

5) Participate in community science projects:

- See hgcny.org/comm-sci/insects/ for a variety of insect community science projects that collect information about insects to aid conservation efforts

6) Encourage neighbors and your community to join in:

- Display a sign such as the Xerces pollinator sign – available at gifts.xerces.org/
- Encourage neighbors and visitors to your yard to join the effort to create insect-friendly yards, too

7) Learn to appreciate them!

- Take time to observe them and enjoy their "buzziness"!
- Put a "name to a face" – Learn their names and something about their needs and habits:
  - BugGuide IDs them bugguide.net/
  - iNaturalist: inaturalist.org/
  - Seek: inaturalist.org/pages/seek_app

That gifts were being offered was evident in the general hum and flutter of insect life. The meadow was audible with bees and crickets; the mowed grass was silent. The meadow waved and nodded in the wind; crowds of leaf hoppers leapt to the brush of a hand. The lawn was deadly still.
~ Sara Stein, *Noah's Garden*

8) Take action on climate change!

Temperature fluctuations are an important factor in insect extinction risk. Climate change will also impact future generations of other living things … including future generations of people.

- Free signs to download: pollinator.org/garden-signs

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