



Bumble bee on Bee Balm (photo by Marcia Chaloux)

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## A look back...

Looking back on the events since our last newsletter, I can say that we have covered much ground (literally) with presentations (area garden clubs, the Northeast Organic Farmers Association, the Hudson Valley Natural Beekeepers Association), display tables at various events, meetings with local and state officials, seminars around the state, our showing of the movie *Vanishing of the Bees* and last but certainly not least, the pollinator poster challenge which resulted in 19 creative posters happily displayed at the Booth Library, some of which are shown below.

As our efforts continue we will particularly be focusing on the reduction of pesticides. It has been reported that the use of pesticides to kill insects, weeds and fungus has climbed to nearly a billion pounds a year in the U.S., with per-acre use in parks, home lawns and golf courses in some cases higher than in agriculture. In addition to being a threat to pollinators, there are many reasons to be very concerned about the over-use of pesticides. Some of those reasons are:

- Acute and lethal effects on bees, both managed and wild.
- Longer-term and chronic effects on all bees and their brood.

- Harm done to other organisms—birds, soil biota, earthworms, macroinvertebrates, etc.
- Water pollution—water courses and aquifers at risk.
- Human health concerns, especially infants and children.
- It's not cost effective in most instances (usually no increase in crop yields).
- The emergence of herbicide-resistant weeds.
- Food supplies depend on pollinators.
- Pollinators are needed to maintain healthy ecosystems that support wildlife as well as human life.
- Insufficient research on a number of factors including the mix of chemicals that bees and others are exposed to.
- Despite insufficient research, enough is known to draw the conclusion that a reduction of toxic chemicals would benefit various environments, i.e. the earth!
- Bees are the canary in the coal mine—a keystone species—and their numbers are dwindling!

We hope that you will join us in our mission to make our area a healthier place for all creatures, great and small.

**Mary Wilson**

*Just a few of the entries to our second annual Pollinator Poster Challenge, on display at the Booth Library*





# Department of Transportation (DOT) Addresses Pollinator Habitat

Mary Wilson

The Connecticut DOT has recently issued three important policies which address pollinator habitat along roadsides. Those policies include reduced mowing, plant replacement plots, and establishment of native plants at new construction sites.

Along highways in Connecticut, medians which are 60' or wider will be cut only 15' along the roadside and will be cut only once or twice during the season. Spot treatment of herbicides will be used for invasives only as needed. In general, mowing will be reduced to one major cut at the end of the season.

Plant replacement plots are being developed to create additional pollinator habitat areas. Each of the four DOT districts will have two plots, one naturalized and one planted. In District 4 there is one naturalized plot (over an acre at Exit 10, westbound shoulder, Newtown) and one planted plot (Torrington, Route 8, Exit 46 center median.)

At new transportation sites DOT will prioritize with native plants which are beneficial to native insects and other forms of wildlife.

Already there are visible signs that these changes are making an impact. Driving along I-84 one can see the emergence of wildflowers such as crown vetch, flea bane, birdfoot trefoil and daisies. Reduced mowing (which one would assume reduced cost benefits as well), has allowed Nature to rebound to a more natural state which is certainly pleasing to the human eye as well as to the eye of the pollinator.

With 10,000 miles of state highways these linear corridors of improved habitat could make a significant difference for our bees, insects, birds and other wildlife. Roadside lands provide shelter, food and breeding opportunities for many species, representing one of the most widespread networks of linear habitats on earth. They are corridors for species distribution because they connect fragmented existing landscape patches.

DOT's efforts to improve and create more pollinator habitat is a positive example of what can be done to align our cultural practices with what we know makes environmental sense.

We need to celebrate these changes and encourage state agencies to continue this shift in thinking. We need also to shift local and personal paradigms to a more natural way of doing things. Let's take a cue from the State and institute measures in our own yards and communities which recognize that we are part of an ecosystem that needs thoughtful care. Understanding the importance of pollinators and their difficulties may well be the tipping point to better stewardship of our land. 🐝

## POLLINATOR SPOTLIGHT

Marcia Chaloux



### Mason Bees



*Mason bees (genus Osmia) are a type of native bee quite common throughout the U.S. They are usually a little smaller than a honeybee, and typically metallic blue or blue-black in color. They get their name from their habit of nest building, which is to seal off the cells where they lay their eggs, with a mortar-like application of mud.*

*There are about 140 species of mason bees in North America, all of which are solitary bees. The males do not have a stinger, and the females will only sting if trapped or squeezed. This makes them an ideal neighbor for the home garden, since they pose so little threat of stinging.*

*In the wild, mason bees lay their eggs in small natural cavities such as woodpecker holes, insect holes and hollow stems, but they seem to be just as happy to lay their eggs in artificial nesting cavities such as wooden blocks with holes drilled in them or cardboard tubes. Because mason bees are unable to excavate their own nesting cavities, they seem to be quite happy to use whatever location is suitable since they prefer to make their nests close together and the artificial nesting chamber takes advantage of this trait. In the wild, their eggs are laid in natural cavities which are rarely re-used. To avoid pest and disease problems, artificial nesting boxes should be carefully cleaned or disposed of after one or two seasons of use. For more detailed information on the proper maintenance of nest boxes see the fact sheet entitled "[Tunnel Nests for Native Bees](#)" on the Xerces.org website.*

*While native bees have also experienced population losses due to similar stresses to the honeybees, they have two big advantages. First, they are solitary and work by themselves and live independently making them far less susceptible to disease. And second, because they don't live in hives, they can't be collected for commercial agriculture, which increases their exposure to toxins and takes them out of their natural habitat.*

*And Mason bees are very effective pollinators. Just two or three females can pollinate a mature apple tree! Mason bees will also work in cool or rainy weather when honeybees are more likely to take the day off. 🐝*



# Imidacloprid and Colony Collapse Disorder (CCD)

## Part I – History of CCD in France

Holly Kocet



### Our Initiatives

- ✿ Increase awareness of threatened pollinator species including native bees, honeybees, butterflies and other beneficial insects, as well as birds and bats.
- ✿ Encourage the planting of native species for pollinators and other wildlife.
- ✿ Increase awareness of harmful pesticides and their effects on bees and other pollinators.
- ✿ Provide safe alternatives to harmful pesticides (insecticides, herbicides, and fungicides).
- ✿ Seek local government and state support for the protection of pollinators.

In July of 1994, French beekeepers noticed something they had not seen before. When sunflowers were in bloom, many of their hives were collapsing. Worker honeybees abandoned the hives leaving the queen and immature bees to die.

Where had thousands of bees gone? No dead bees were found outside the hive which is indicative of hive collapse due to cold weather or lethal pesticide poisoning. Also perplexing was that beetles and mites who would ordinarily scavenge a dead hive, stayed away for weeks after the bees disappearance. What was repelling them?

It is not unusual for beekeepers to experience bee die-offs in winter but these colonies were collapsing in late spring and early summer. Bees appeared to just fly off and never return. This goes against nature since worker bees (all female) are instinctually maternal and would never abandon their brood of baby bees.

French beekeepers needed answers. They quickly realized that a new insecticide was recently authorized for use on sunflowers. It was called Gaucho with the active ingredient Imidacloprid (IMD). IMD is a neonicotinoid, a systemic chemical known to be highly toxic to bees... and yet it was being used on flowering food crops. IMD and other neonicotinoids (neo-nics) are intended to block part of the insect's nervous system, inhibiting function and causing death. The chemical can be painted on seeds to poison pests and is also applied as a "soil drench" around plants where toxicity can last up to one year. IMD is also sprayed on some cereal crops and rapeseed.

So if honeybees in France were not killed by a lethal exposure (no dead bees outside the hive), perhaps the bees were being exposed to a sub-lethal dose which was inhibiting their ability to find their way home after foraging on treated flowers.

While the manufacturer dismissed claims that Gaucho could be killing bees, it is interesting to note that another one of their products containing IMD and sold for termite control stated on its label that IMD causes the termites to stop feeding. And, it renders them incapable of maintaining their colony. Could it be coincidence that honeybees were reacting the same way?

The situation was desperate. Honey production had declined by 50% in just three years and French beekeepers appealed to the government for help. In 1998, field trials and laboratory tests revealed results quite different than what the manufacturer had reported. Scientists discovered that bees actually possess fewer detoxification genes making them more vulnerable to pesticides than other insects. Research also concluded that as little as 6 parts per billion of IMD is enough to disrupt feeding for honeybees. On January 22, 1999, Imidacloprid was finally suspended for use on sunflowers until further research could be done. ✿

**Next Issue: Colony Collapse Disorder Comes to America**

# Designing Pollinator Habitats (Part II)

## Herbaceous Gardens

Sarah W. Middeleer, MLA, ASLA

Pollinators of all kinds, including bees, butterflies, and many other insects, are in trouble—due to loss of habitat as well as increased use of pesticides in agriculture and home and municipal landscapes. Therefore, many scientific organizations and pollinator advocates urge homeowners to develop pollinator habitats on their own properties. The best pollinator gardens are free of pesticides, including insecticides, fungicides, and herbicides. There are numerous biological, safe methods of insect and disease control, and I urge readers to see our other articles and the many other resources for these methods. Some valuable websites are provided at the end of this article.

This is the second in a series of articles on designing pollinator habitats for the residential landscape. In our last newsletter I discussed meadows and meadow-type plantings for pollinators, and in this article I will explore herbaceous beds. A “mixed border,” using shrubs, works well in the home landscape.

### DESIGN BASICS

One caveat: there is no one-size-fits-all solution to landscape design. The success of every design rests on many conditions, including the specific characteristics of each site (such as topography, solar orientation, existing vegetation, soil types, etc.) and the needs, preferences, and habits of the people who live there. Nonetheless, there is helpful information on planning pollinator gardens that can apply to many situations. First, a brief summary of the “kit of parts” that forms many residential landscapes. The chart that follows contains potential areas in home landscapes where one can grow pollinator-friendly plants. As you can

see, you don’t have to be limited to a specific bed type (i.e., a “pollinator garden”), but, rather, can develop your entire property to attract and support pollinators.

Area on a property	Plants that Support Pollinators
Lawn	Pollinator friendly lawn or convert part to meadow
Beds near house/road	Trees, shrubs, perennials, annuals
Foundation plantings	Shrubs, groundcovers, annuals
Vegetable garden	Annuals for edging, herbs
Patio or deck	Annuals in containers
Wild places – sunny	Upland meadow, including many native cool-season grasses
Wild places – shady	Native woodland–woody and herbaceous plants
Wet/moist areas	Wetland shrubs and plants (shade) or wet meadow (sun)

In this article I will explore the second category: herbaceous planting beds.

From a design standpoint, perennial beds can be very successful when used to border a walkway or path (on one side or both), frame a space (such as a lawn or patio), or enliven a blank wall – say at a garage or shed. When we think of pollinator gardens, we often imagine a bed or border filled with perennials and maybe some annuals. But depending on your existing beds and your needs and wishes, you can certainly add shrubs and some groundcovers to this mix. Shrubs require less maintenance than perennials and can enhance a border’s ability to frame a passage or space. Annuals can fill in the bloom sequence and add color. Groundcovers or low, spreading plants, can function as “living mulch,” reducing the need for weeding, while also providing flowers beneficial to pollinators. Some groundcovers, however, are too aggressive to be used in perennial borders.

*Perennial bed used to frame a lawn at Longwood Gardens, Delaware*







# The Federated Garden Clubs of Connecticut Shows Support for Pollinators

Holly Kocet

The newly elected President of The Federated Garden Clubs of CT, Inc. (FGCCT) has announced her President's Theme for 2017-2019. Inge Venus was sworn in as President of FGCCT at their Annual Meeting on April 19 where she introduced her President's Theme and Project for 2017-2019, ***Plant Connecticut—Be a Conservation Champion***.

The President's Theme cites three main areas that support a healthy environment "for today and for future generations": Conserve Water, Assist Pollination, and Garden Naturally. The Connecticut State Project supports the National Garden Clubs theme for 2017-2019, "Plant America".

During her acceptance speech, Inga told a very touching story about how she became a conservation champion because of the loss of a treasured pet due to exposure of a toxic lawn pesticide. The lawn maintenance company failed to notify her that the chemical applied to her lawn was highly toxic to pets. The exposure proved fatal; her pet died in just two days.

Now, more than ever, it is important for our Garden Clubs to lead by example for the protection of our environment and spread the word that pollinators need of our help. Loss of habitat through development, climate change, and overuse of pesticides are wreaking havoc on our pollinator populations.

The President's Theme includes a contest for both Garden Clubs and individual Club members. There are 124 Federated Garden Clubs in our state. All Clubs have been invited to participate by either planting a Xeriscape Garden or a Pollinator-friendly Garden in a public space. Individual club members may also participate by creating a Xeriscape Garden on their own property.

We applaud Inga Venus and The Federated Garden Clubs of CT, Inc. for continuing to support conservation and the protection of Connecticut's pollinators through this important project. 🐝

Inga Venus introduces her President's Theme and Project for 2017-2019



Narrow-leaved mountain mint (*Pycnanthemum tenuifolium*) is a herbaceous perennial that ranks very high for its value to wildlife, especially native bees and butterflies. Not only does it provide food for many long and short-tongued bees, it also provides food for butterflies, skippers, moths, beetles, flies, and beneficial wasps.

*Pycnanthemum* is native to Connecticut and most of New England. While its name is a bit misleading, mountain mint is perfect for disturbed sites, fields and meadows. Wonderfully adaptable, it thrives naturally

in dry soils, along roadways, moist fields, floodplains and sandy riverbanks.

Blooming from July to September in full sun or part shade, its white flower clusters are flecked with pale purple spots on multiple stems. Foliage is also an attractive attribute. Leaves are simple and lance-shaped with an opposite arrangement on the stem. And when crushed, leaves emit a fragrant mint-like aroma.

*Pycnanthemum* plants can reach two and one half feet in height. Care should be taken in gardens to make sure plants have room to spread because of their rhizomatous rooting habit. However, pollinators benefit greatly from this plant as it spreads quickly to create nice groupings for ease of foraging.

Mountain mint is a must for every pollinator garden and meadow, not only for its special value to pollinators but it has no serious insect or disease problems. And, with a minty aroma, *Pycnanthemum* is also resistant to deer foraging. 🐝



# WE'VE BEEN EXTREMELY BUSY BEES THIS SEASON



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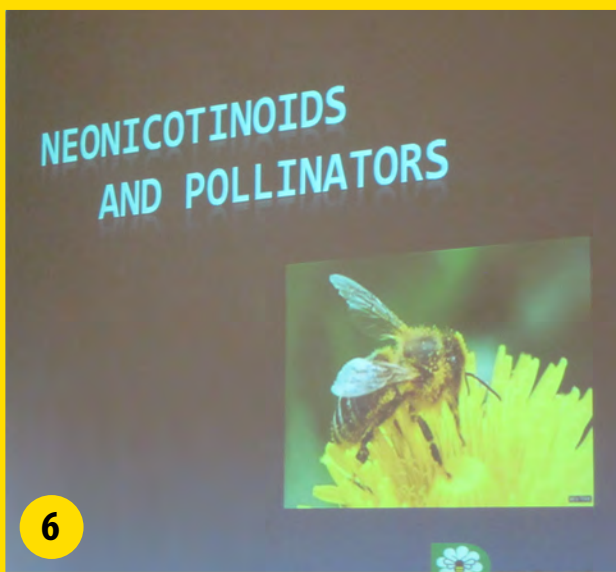
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1. POP members and Garden Club members host childrens craft table at Earth Day.

2. Mary Monarch and Polly B. Pollinator with Rep. Mitch Bolinsky.

3. Youngster planting seeds at Victory Garden Celebration.

4. POP members Joyce, Mary, Holly, and Jackie at NOFA Conference.

5. A sunflower "blooms" at Earth Day.

6. Presentation for The Redding Garden Club.

7. Holly poses for Pollinator Presentation for the Danbury Public Library.

8. POP member Sarah Middelcer at Earth Day planting seeds with a future gardener.





Monarch butterfly on Butterfly Bush (photo by Joyce Pogers)

# Pollinator Health Act Update

Mary Wilson

When Connecticut's Act Concerning Pollinator Health became law in 2016, it was hailed as groundbreaking legislation, the first significant attempt to provide comprehensive strategies to protect pollinators in our state.

The law required a number reports and strategies on various aspects of the problem including the use of dangerous pesticides and loss of habitat. Some of the resulting actions and reports include:

## **Neonicotinoids are reclassified as restricted use only.**

*(Background: Neonicotinoids are a class of widely- used pesticides which are toxic to bees and other pollinators. Until now they have been distributed in a variety of ways and products easily available to the public.)* With the new classification as "restricted use" they will be available only to certified commercial and private applicators. This reclassification takes effect on January 1, 2018, meaning that 2017 is the last year these products will be available to the general public.

**Neonicotinoids excluded on plants in bloom.** As of 2016 no neonicotinoids are to be applied to plants which are in blossom (except in a greenhouse which is inaccessible to pollinators).

**Establishment of a Pollinator Advisory Committee. The Connecticut Agricultural Experiment Station shall establish a Pollinator Advisory Committee to serve as an information resource for the General Assembly.** That committee has been established.

**Study of varroa mites. The State Entomologist shall make recommendations to offsetting the effects of varroa mites.** *(Background: Varroa mites are microscopic and debilitating parasites that attack both honey bees and brood.)* The guide with those recommendations has been published.

**Connecticut Agricultural Experiment Station shall compile a citizen's guide to model pollinator habitat.** *(Background: Much of the decline of pollinators in Connecticut is due to loss of habitat from development,*

*natural plant succession, pesticide usage and changes in the way agriculture is carried out.)* This 26-page report has been issued and is available to the public. Sections are designed for beekeepers, farmers, managers of large land areas, and gardeners.

**Department of Transportation (DOT) to identify opportunities for planting native grasses along highways by January 1, 2017.** *(Background: In total, over 10 million acres of roadsides exist in the United States. Roadsides represent one of the most widespread networks of linear habitats on earth, acting as corridors for species distribution by connecting fragmented existing landscape patches. This land supports a diversity of wildlife by providing shelter, food, and breeding opportunities for many species, including presently threatened pollinators.)* The DOT has issued an extensive report concerning replacement of non-native grasses with native plant communities along highways to create model pollinator habitat.

**The Department of Energy and Environmental Protection shall report on restrictions on the planting of seeds coated with neonicotinoids.** *(Background: The main concern about seeds coated with neonicotinoids is acute exposure to bees from airborne dust associated with the planting process.)* That resulting report offers valuable information and alternatives to farmers.

Connecticut can be proud of our leaders who have taken significant steps to address the serious decline of pollinators in our state. However, it will be important that citizens also take steps in their own yards and communities to promote pollinator habitat by planting native species and limiting or eliminating the use of harmful pesticides. We know that pollinators are a keystone species which support not only agricultural pursuits but also whole ecosystems. Without them the world would be a very different place. 🐝