Healthy Shorelines for Animals, Plants and People

WHY:

To reduce shoreline erosion, improve water quality, create wildlife habitat, explain reasons for and benefits of shoreline restoration, and introduce potential funding sources.

WHEN:

Wednesday, June 24 & Thursday, June 25
9 a.m. to Noon (both days)

FREE

WHERE:

Virtual - by Zoom

Register for one or both days through SignupGenius

https://www.signupgenius.com/go/9040549A5A928A1F94-healthy

Click or type the link above into your browser to register. Once registered, you will receive Zoom Instructions to attend the meeting via computer or phone.

FEATURING:

- **Baerbel Ehrig , Oneida County Land & Water Conservation Department**
- **Lynn Markham, UW Stevens Point**
- **Michele Sadauskas, Oneida County Land & Water Conservation Department**
- **Stacy Dehne, Department of Agriculture, Trade & Consumer Protection**
- **Pat Goggin, UW-Extension Lakes**
- **Dan Butkus, Waterfront Property Owner**

For more on the Oneida County Cost Share Program or the WDNR's Healthy Lakes Initiative, visit the following websites:

https://www.oclw.org/cost-share-program.html

https://healthylakeswi.com/

Sponsored by

Oneida County Land and Water Conservation Department

Daily Agenda

June 24: AM Only

9:00-9:10 Introduction

9:10-9:55 Baerbel Ehrig, *Project Overview, Reasons & Benefits of Restoration*

10:00-11:00 Lynn Markham, *Pesticides, What Can You Do if You Care About Pollinators?*

BREAK

11:10-11:45 Michele Sadauskas, *County Cost Share: A Locally Led Grant Program to help Landowners Restore Their Shoreline!*

WRAP UP

June 25: AM Only

9:00-9:10 Introduction

9:10-9:20 Michele Sadauskas, *Day One Recap, Day Two Overview*

9:20-10:00 Baerbel Ehrig, *Improve your Shoreline AND the Lives of Pollinators!*

10:05-10:35 Stacy Dehne, *Case Studies and Photos*

BREAK

10:45-11:15 Pat Goggin, *Healthy Lakes: Five Simple Best Practices for Clean Water and Wildlife Habitat*

11:20-11:50 Dan Butkus, *Shoreland Naturalization: An Atypical Journey on Squash Lake*

WRAP UP

Questions:

715-369-7835 or

behrig@co.oneida.wi.us

“Healthy Shorelines for Animals, Plants and People”

June 24th and 25th 2020

Improve your Shoreline AND the Lives of Pollinators

Baerbel Ehrig OCLW
Pollinator Coordinator/Lake Shore Restoration Specialist

Oneida COUNTY

Native Bee Diversity in North America

Native pollinators vs European honey bee

- European honey bee is not adapted to the Wisconsin climate.
- European honey bee hives can be moved to different fields.
- Native pollinators have evolved along native plants and are perfectly synchronized.

Native Pollinators are active in cooler and wetter conditions and are very efficient:

- 1 Acre of apples can get pollinated by 250 mason bees vs 15,000 – 20,000 honey bees

Why are pollinators important?

We are dependent on pollinators: -

- 35% of crop production, worldwide
- Over $18 to $27 billion of produce in U.S. ($217 billion worldwide)
- Most of our vitamins and minerals
- One in three mouthfuls of food and drink we consume

Eilers et al 2011. Contribution of Pollinator Mediated Crops to Nutrients in Human Food Supply. PlosONE

Morse RA, Calderone NW. 2000. The value of honey bees as pollinators of U.S. crops in 2000. Bee Culture 128: 1–15.

Klein et al. 2007. Importance of pollinators in changing landscapes for world crops. Proc. R. Soc. B 274: 303-313.

Photo: USDA-ARS/Peggy Greb

Whole Foods produce department with bees

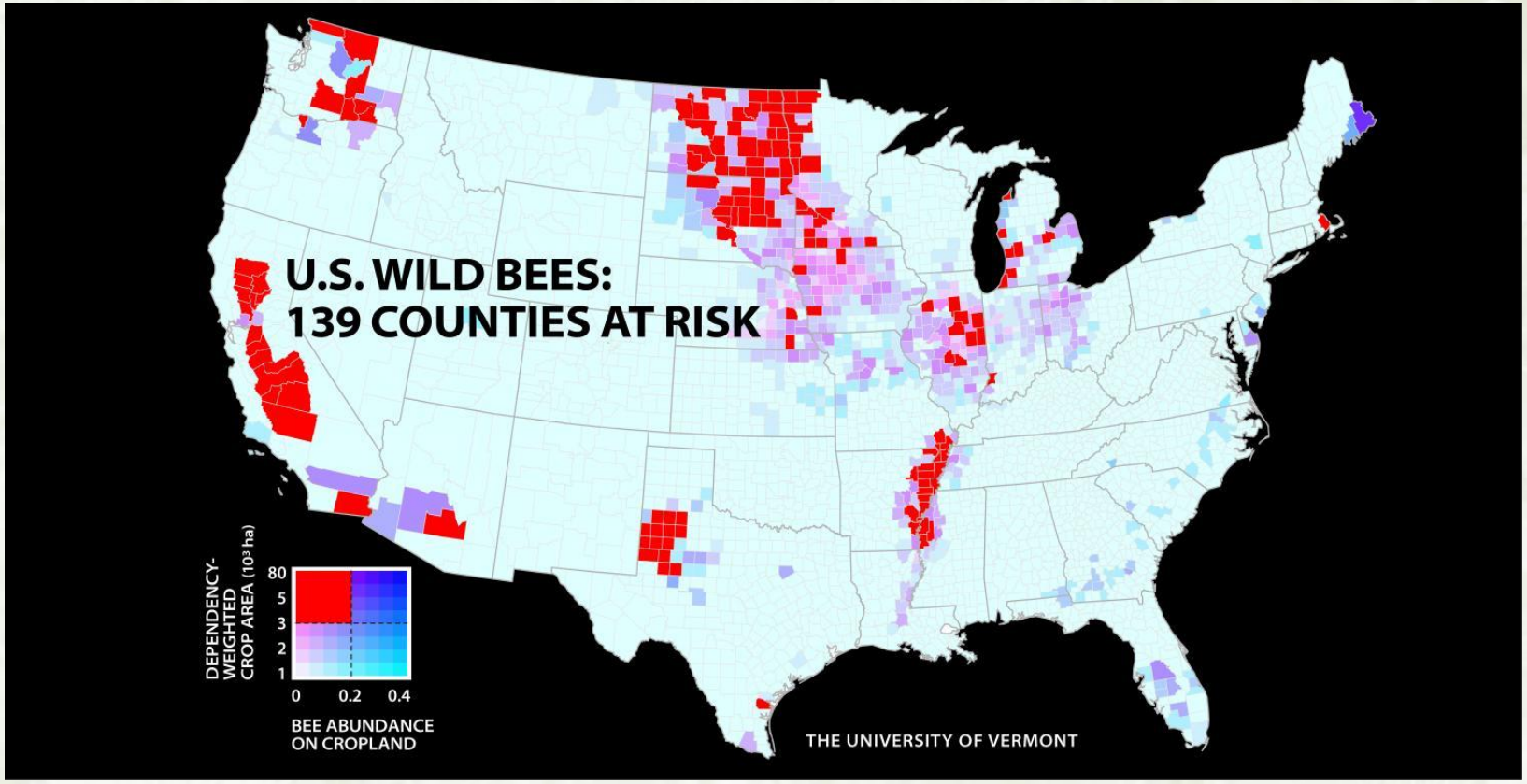
Photo: Whole Foods Market

Whole Foods produce department without bees

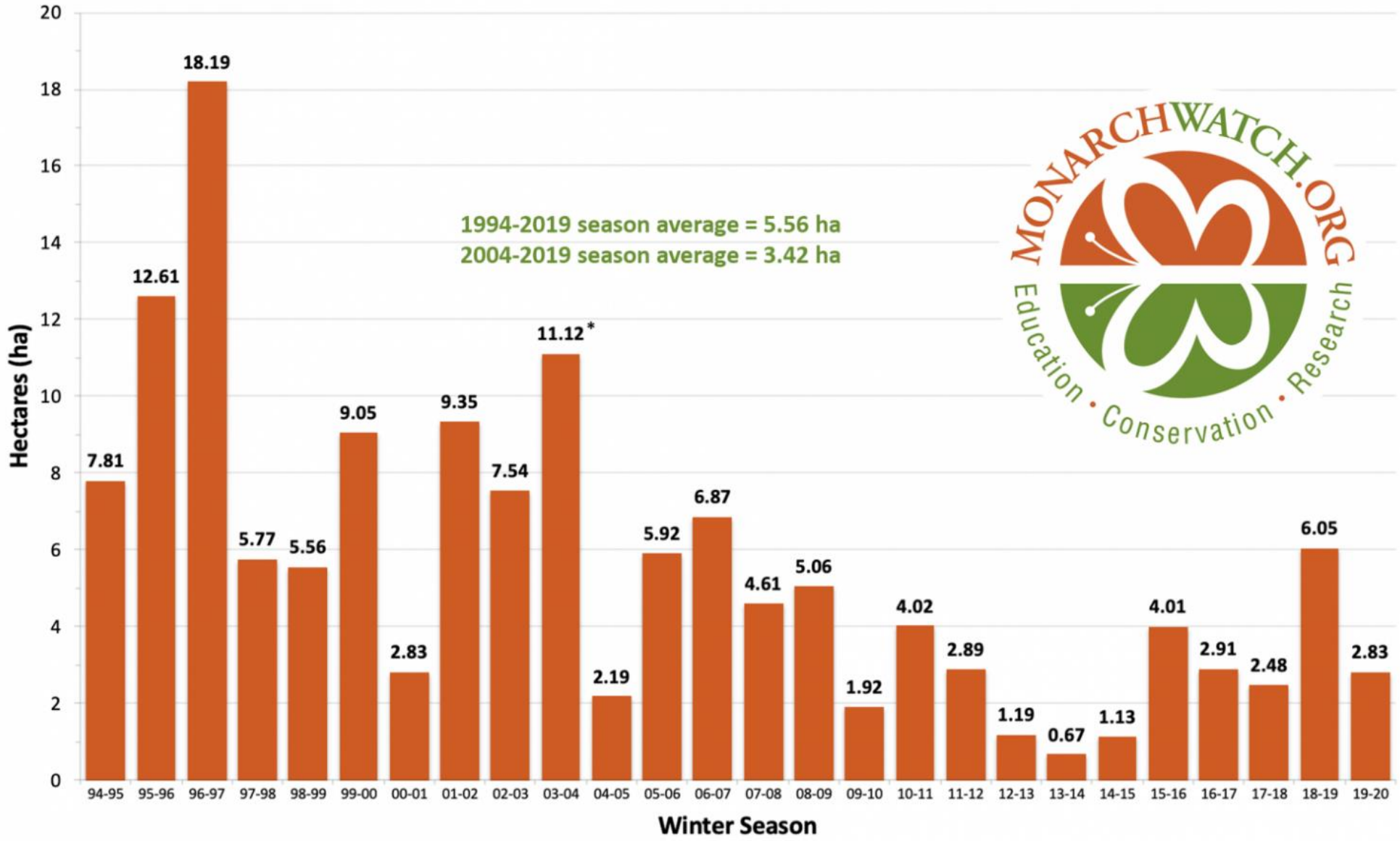
Photo: Whole Foods Market

Pollinator Decline

- Over 50% decline in managed honey bee hives since 1950
- Over 50% of native NA bee species are decreasing
- Meanwhile crop pollination demand is rising



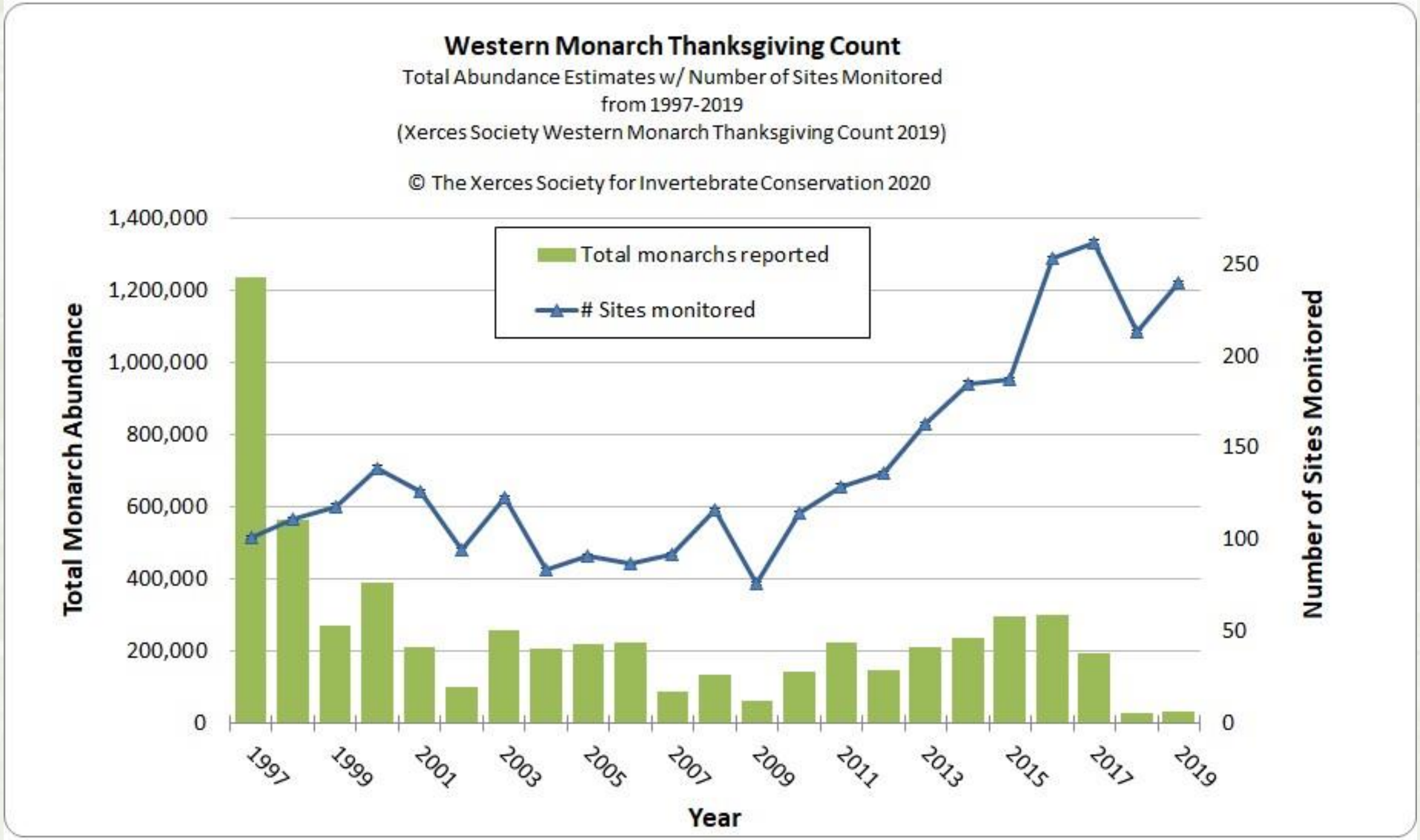
Total Area Occupied by Monarch Colonies at Overwintering Sites in Mexico



MONARCHWATCH.ORG
Education • Conservation • Research

Data for 1994-2003 collected by personnel of the Monarch Butterfly Biosphere Reserve (MBBR) of the National Commission of Natural Protected Areas (CONANP) in Mexico. Data for 2004-2019 collected by World Wildlife Fund Mexico in coordination with the Directorate of the MBBR.

* Represents colony sizes measured in November of 2003 before the colonies consolidated. Measures obtained in January 2004 indicated the population was much smaller, possibly 8-9 hectares. CT


Western Monarch Thanksgiving Count
Total Abundance Estimates w/ Number of Sites Monitored
from 1997-2019
(Xerces Society Western Monarch Thanksgiving Count 2019)
© The Xerces Society for Invertebrate Conservation 2020
Total monarchs reported
Sites monitored
Total Monarch Abundance
Number of Sites Monitored
Year
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
250
200
150
100
50
0
1997
1999
2001
2003
2005
2007
2009
2011
2013
2015
2017
2019

WESTERN MONARCHS IN CRISIS

Western monarchs have declined by 99.4% since the 1980s. For every 160 monarchs there were then, there is only one left today.

1980s

2018

xerces.org/save-western-monarchs

XERCES SOCIETY
for Invertebrate Conservation

Pollinators at risk

rusty-patched bumble bee
federally endangered

monarch butterfly
under petition to be listed as federally endangered

yellow-banded bumble bee
federal & state special concern

Reasons for the Serious Decline of Pollinators:

- Habitat loss
- Disease
- Climate change
- Chemical exposure

By John Anderson, Hedgerow farms INC.

Habitat loss

Monocultures

Invasive species

Development

Disease

Varroa mite

- Feeds on blood

Pathogens

- Deformed wing virus
- Israeli acute paralysis virus

Climate change

Extreme weather events

- Harsh seasons
- Extreme temperature fluctuations
- Droughts

Chemical exposure

Pesticides

- Insecticides
- Fungicides
- Herbicides

Effects of neonicotinoids on bees:

- *Reduction of navigation skills, sense of smell, longer maturation periods*

→ *Lower survival rates*

Examples of Neonicotinoid Garden Products Used in the United States

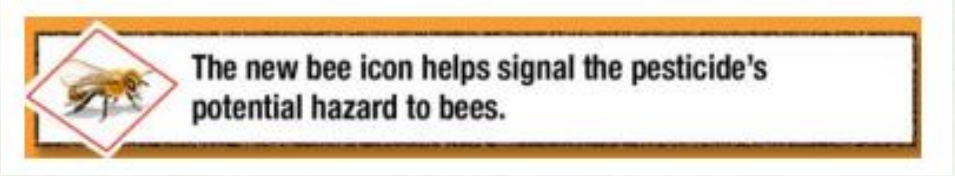
Neonicotinoid	Garden and ornamental uses	Garden product trademark names
Imidacloprid	Foliar spray for turf and ornamental flowers, trees, and shrubs; soil drench for garden fruits and vegetables, and ornamental flowers, trees, and shrubs; trunk injection for trees; granules for turf and ornamental flowers, shrubs or trees.	Bayer Advanced 3-in-1 Insect, Disease, & Mite Control Bayer Advanced 12 Month Tree & Shrub Insect Control Bayer Advanced 12 Month Tree & Shrub Protect & Feed Bayer Advanced Fruit, Citrus & Vegetable Insect Control Bayer Advanced All-in-One Rose & Flower Care concentrate DIY Tree Care Products Multi-Insect Killer Ferti-lome 2-N-1 Systemic Hi-Yield Systemic Insect Spray Knockout Ready-To-Use Grub Killer Monterey Once a Year Insect Control II Ortho Bug B Gon Year-Long Tree & Shrub Insect Control Ortho MAX Tree & Shrub Insect Control Surrender Brand GrubZ Out
Clothianidin	Granules for turf, and ornamental flowers, shrubs or trees.	Bayer Advanced All-in-One Rose & Flower Care granules Green Light Grub Control with Arena
Thiamethoxam	Foliar spray for turf and ornamental flowers, trees, and shrubs; granules for turf and ornamental flowers, trees, and shrubs.	Amdro Quick Kill Lawn & Landscape Insect Killer granules Amdro Rose & Flower Care Maxide Dual Action Insect Killer
Acetamiprid	Foliar spray for garden fruits and vegetables, and ornamental flowers, trees, and shrubs.	Ortho Bug B Gon Garden Insect Killer Ortho Bug B Gon for Lawns Ortho Flower, Fruit and Vegetable Insect Killer Ortho Rose and Flower Insect Killer Ortho RosePride Insect Killer
Dinotefuran	Granules for turf and ornamental flowers, shrubs or trees; soil drench for ornamental flowers, trees, and shrubs.	Green Light Tree & Shrub Insect Control with Safari 2 G Ortho Tree & Shrub Insect Control Plus Miracle Gro Plant Food

Source : xerces society

“Bee” the Change

If you have to use pesticides…..

- Don’t overreact!
  - many plants can tolerate insect damage
- Know the difference between systemic and non-systemic.
  - goes into nectar and pollen
  - persists for weeks to months
- Time your spraying
  - not when windy
  - not when pollinators are active
  - not when plants are in bloom



Is mosquito spraying really necessary?

- Insecticides used are effecting EVERY insect!
- Explore alternative mosquito repellent or eradication methods other than spraying insecticides
- Weigh your options

What’s blooming?

- Native pollinators are best adapted to pollinate native plants.
- Improving native pollinator habitat naturally leads to an increase in their numbers.

Early bloomers

Are the first food source when pollinators emerge

Golden alexander *(Zizia aurea)*

Blue harebell *(Campanula rotundifolia)*

Prairie phlox *(phlox pilosa)*

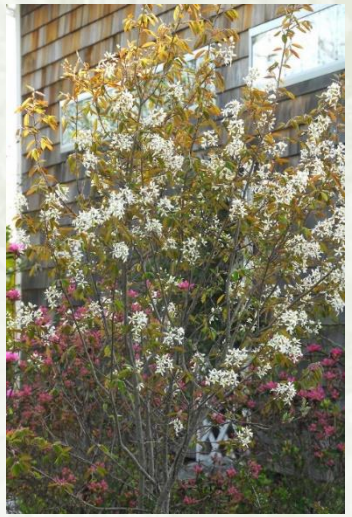
For a list of plants see www.oclw.org

Shrubs and Trees

Some are an early nectar source. Foliage of certain trees and shrubs serve as larval host plants for some butterflies and moth caterpillars.

Blueberry

Maple



Serviceberry

Willow

For a list of shrubs and trees see www.oclw.org

Late bloomers

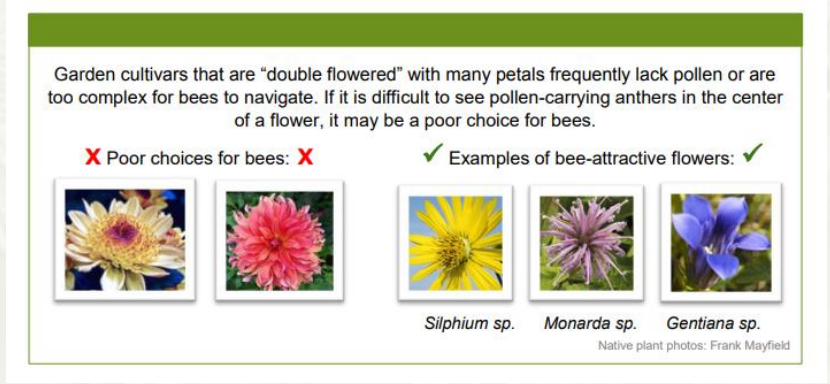
Are an important food source for Monarchs butterflies before migration starts

New England aster (Aster novae – angliae)

Whorled milkweed *(Asclepias verticillata)*

For a list of plants see www.oclw.org

- Aim for at least 3 species in bloom at all times
- Choose a variety of colors
  - Blue, white, yellow, and purple!
- Early and late flowering species ARE IMPORTANT
  - Cherry & plum trees (spring)
  - Juneberries & blueberries (early summer)
  - Asters (fall)
- Avoid ‘complex’ flowers
- Plant grasses



Trees:	Tamarack, Black spruce, Basswood, Oaks, Maples, Hackberry, Birch, Cherries
Shrubs:	Willows, Dogwoods, Viburnums, Elderberry, Alder, Serviceberries, Prairie plum, High bush cranberry, Buttonbush, False Indigo
Grasses:	Prairie cordgrass, Manna grasses, fowl bluegrass, rice-cut grass, Canada blue-joint grass, Big bluestem, Indian grass, Kalm's brome, Prairie brome
Forbs:	Marsh milkweed, Butterfly milkweed, Culver's root, Blue lobelia, Cup plant, Mountain mint, Grass-leaved goldenrod, Joe-pye weed, Boneset, Red-stemmed aster, Swamp aster, Marsh aster, Giant goldenrod, Giant-bur reed, Sweet flag, Wild iris, Common ox-eye, Black-eyed Susan, Stiff goldenrod
Sedges:	Tussock sedge, Bottlebrush sedge, Lake sedge, Slough sedge, Porcupine sedge
Rushes:	Torrey's rush, Riverbulrush, Soft-stem bulrush, Spikeruses, Green bulrush, Soft rush

https://www.oclw.org/lakeside-landscaping.html

Create buffer strips of wild flowers and native grasses

- Create habitat for pollinators and beneficial insects
- Increase biodiversity
- Improve nutrient composition

Before

After

Buffer strips are applicable in:

- Farmland
- Golf Course out-of-play areas
- Storm water runoff ponds
- Rain gardens

How a rain garden functions

Native Plants

Native plants are adapted to local conditions and are easy to maintain once established. Plus they attract birds, butterflies and other pollinators.

Gutters & Down Spouts

Assist with directing rain water from your roof to your rain garden.

Berm

A berm holds water in the garden during heavy rains.

Grasses/Sedges

Grasses and Sedges

Provide protective habitat for insects, enrich the soil and prevent erosion.

Junegrass

Sweetgrass

Pennsylvania sedge

For a list of grasses see www.oclw.org

Steve Adams

The picture contrasts the shallow (2-3 inches) roots of Kentucky bluegrass to the deep (3-5 feet) and dense roots of native grasses. The root systems of native grasses may be effective for preventing erosion.

What is a *Bee Lawn*?

- mixture of grasses and very low growing flowers
- Provides much more nectar sources than turf grass
- Resilient to mowing
- Less maintenance than turf grass
- Neat looking

Comparing Flowering Bee Lawns with Other Types of Vegetation

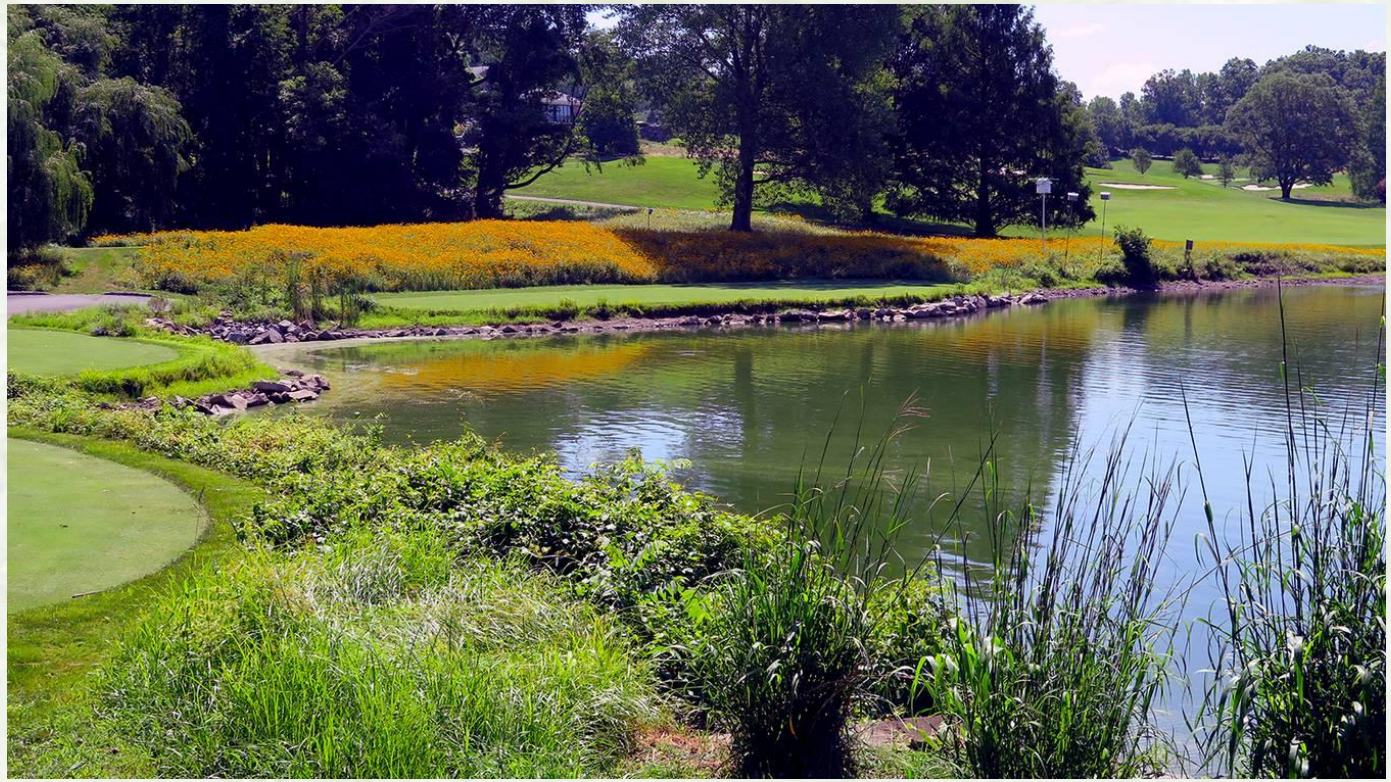
Flowering bee lawns combine features of traditional turfgrass lawns and other types of vegetation supporting bees and preserving the open sightlines and many recreational uses associated with lawns.

	Traditional turf	Bee Lawn	Urban meadow	Native prairie	Pollinator garden
Description	Area dominated by & managed for turfgrasses. Turf that has not been treated with herbicides may have unintentional forbs.[1]	A mix of low-input turfgrasses & low-growing forbs selected to provide bee forage. Mowed regularly to maintain recreational uses similar to lawns.[4]	"Naturalistic, unmown grassland with or without flowering forbs."[5]	Area dominated by grasses & grass-like species, often with a diverse assemblage of forbs & other plant species.[9]	Garden bed planted with species selected to provide high-quality pollinator forage.
Key criteria for selecting species	Appearance (e.g. color, texture); Maintenance requirements	Provision of pollinator forage (& other ecological benefits); Ability to grow in lawn conditions	Biodiversity (& other ecological benefits); Appearance/color diversity	Native species (& other ecological benefits)	Provision of pollinator forage (& other ecological benefits)
Vegetation height	Short (2-4.5 inches)[3]	Short (2-4.5 inches)[3]	Short (2 inches) to Tall (40 inches)[5]	Short (6 inches) to Tall (120 inches)[9,11]	Varies
Suitability for foot traffic	Excellent	Good	Poor to None	None	None
Mowing frequency	1-6/month[2,3]	1-3/month[4]	1/month to 1/season[5]	0-2/season[10]	N/A
Other maintenance considerations	Staff are usually already familiar with & skilled at maintaining.	Can mow less frequently than traditional turf. No new equipment is necessary. Herbicide use should be avoided.	Mowing is substantially reduced. Removal of plant residues may require additional equipment/effort.	May be maintained by prescribed burns. Requires specialized training and equipment.	Requires intensive management, such as hand weeding & mulching.

Illustration by Joseph Nowak III. References: [1]Ignatieva, Eriksson, Eriksson, Berg, & Hedblom, 2017; [2]Yue et al., 2017; [3]Cornell University, 2018; [4]Lane, 2016; [5]Southon et al., 2017 (p.106); [6]Hoyle et al., 2018; [7]Smith & Fellowes, 2015; [8]Smith & Fellowes, 2014; [9]Blair, Nippert, & Briggs, 2014; [10]Minnesota Dept of Natural Resources, 2004; [11]Oregon State University, 2018.

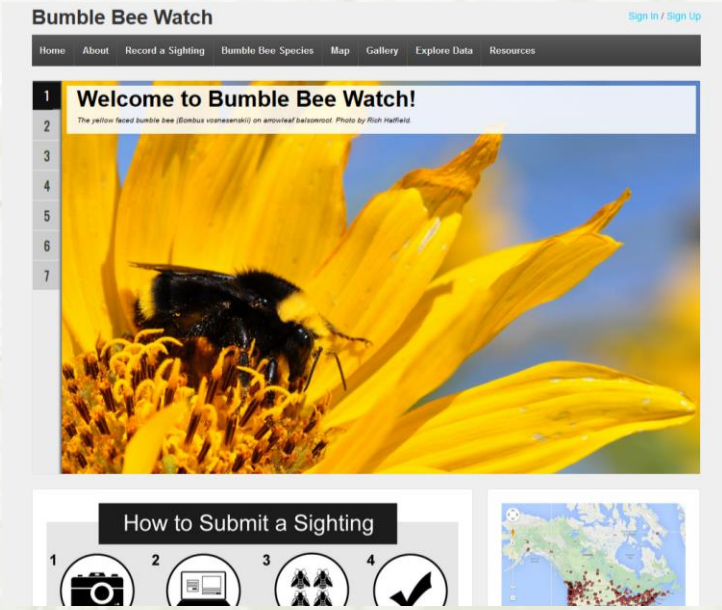
Bee Lawns are applicable in:

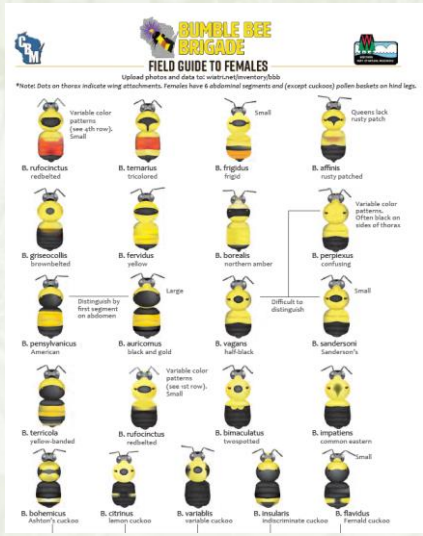
- Private and public yards
- Golf courses
- Parks
- Cemeteries
- Recreational Trails



Monitoring

- Bumble Bee Watch
- Monarch Joint Venture
- Bumble Bee Brigade (Wisconsin)





Why:

- Become a citizen scientist and help protect our environment
- Learn about pollinators through monitoring
- Take children outside
- Become engaged in group activities

How?:

- Read through the resources

- Enroll in a monitoring training session or take an online training course

Thank you for being a champion

See www.oclw.org for resources