

# Bee Campus USA - University of Michigan-Dearborn

Report on 2023

## Pollinator Habitat Creation & Enhancement

*Please describe pollinator habitat creation or enhancement projects in your community in 2023, and whether your committee hosted them or not.*

Each year, the Environmental Interpretive Center at the University of Michigan-Dearborn maintains and enhances a number of ongoing pollinator-friendly sustainability projects. Such projects collectively include several acres of rain gardens, a prairie garden, a pollinator garden, a community organic garden, an apiary (beeyard), as well as a 300-acre Environmental Study Area, which consists of meadows, upland woods, floodplain beech-maple forest, an old field, a swamp, and other natural habitats. Weedy and/or invasive species, such as buckthorns and honeysuckles, are monitored and actively removed by community and student volunteers, student interns, and EIC staff during monthly Stewardship Saturdays and Adopt-a-Habitat management events. The EIC has also been rehabilitating one of its rain gardens through extensive removal of weeds, such as thistles, and replanting with local native plant cultivars.

*How many habitat projects did you help to create or enhance in 2023?*

3

*How many people (staff, volunteers, students, partners, etc.) helped with those projects?*

52

*How many projects benefit monarchs, milkweed, or nectar plantings?*

1

*How many total square feet of habitat were created or enhanced?*

25000

*Please check all that describe the habitats your affiliate helped to create or enhance last year with pollinator benefit in mind.*

- Flower garden
- Vegetable garden
- Natural area with tree snags and stumps, and bare areas for ground nesting species
- Meadow
- Herb garden

- Native milkweed planting for monarchs and bees (where appropriate)
- Invasive/exotic plant species removal for habitat improvement
- Native pollinator-friendly tree planting
- Rain garden/bioswale
- School garden

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## Education & Outreach

*Please describe pollinator conservation events or outreach activities in your community in 2023, indicating whether your committee hosted them or not.*

The Environmental Interpretive Center at the University of Michigan-Dearborn hosted 40 K-12 and community educational programs about pollinators and the habitats that support them to about 300 participants. These programs were led by interpretive staff and students studying in environmental fields, such as environmental studies, environmental science, and biology. Specific programs included Plant Identification and Ecology, Pollination Partnerships, Sprouts (Children's Gardening Program), and Young Naturalists. During fall semester 2023, student, staff, and faculty team members from Engaged Scholars, the Environmental Interpretive Center, the PolliNation Project, and the Planet Blue Ambassador Program hosted an Insect Hotel Workshop during Civic Action Week for about 25 students, staff and faculty. Participants learned about the critical roles of pollinators in our environment, and how we can help support them by providing nesting and refuge sites like human-made insect hotels. Volunteers helped to assemble 26 birdhouse-sized insect hotels during the 1-hour workshop. If they wished, workshop participants could keep the hotel they built so that they could install it back home. About half of the hotels were donated to the organization, Rescue Michigan Nature Now, which distributed them to non-profits in metropolitan Detroit, including the Detroit Birchwood House. The Bee Campus USA Committee and the Environmental Interpretive Center sponsored their fourth annual Pollinator Photo Contest. The public was invited to submit photos in three categories: pollinators up-close, pollinator-flower interactions, and pollinator landscapes. A total of 163 photos were submitted for consideration. This year's contest had the most geographically diverse contestants in the US (from 15 different states, including California, Oregon, Washington, Georgia, Alabama, NC, SC, Wisconsin, NY, NJ, Minnesota, Kentucky, Indiana, Ohio, and, of course, Michigan) compared to past contests. There was also a submission from Ontario, Canada. YouTube videos featuring some of the best photo contest entries from each of the four contest years have also been shared online. Since the inception of the photo contest during the covid-19 outbreak in 2020, 685 photos have been entered for prize consideration from 24 different states and 6 different countries.

*How many pollinator-related events or outreach activities did you host or help with in 2023 (in total)?*

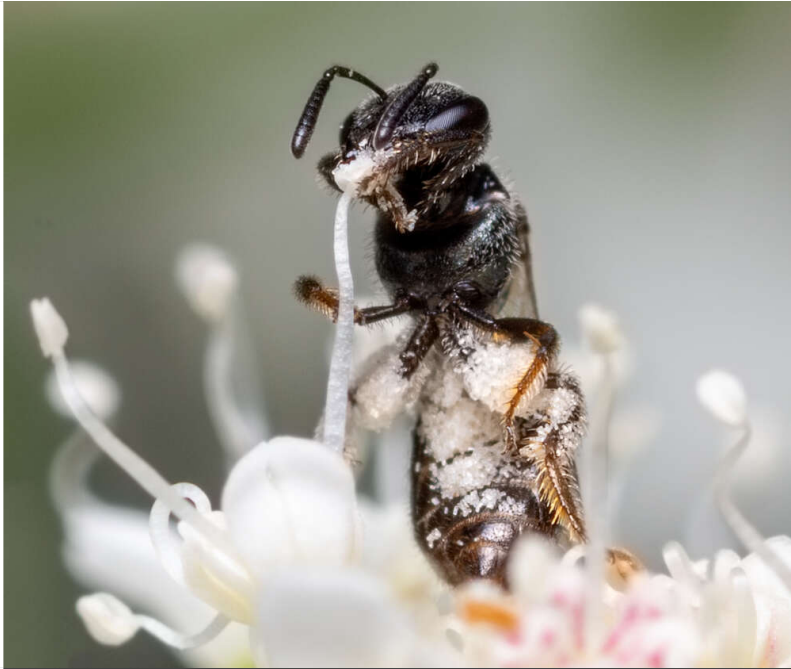
40

How many people attended those events (in total)?

285

Number of permanent interpretive/educational/Bee Campus USA signs installed to date?

2



The photo "Insatiable" by Curtis Coates was one of three prize winners in the fourth annual Pollinator Photo Contest sponsored by the University of Michigan-Dearborn Bee Campus USA Committee and the Environmental Interpretive Center



Volunteers assist with the assembling of insect hotels during a workshop about pollinator education and conservation

## Curriculum, Continuing Education, & Service Learning

*Please describe the curriculum your campus engaged in 2023, indicating whether it was part of a for-credit course or continuing education.*

During 2023, a variety of courses that include pollinator-related information were taught at the University of Michigan-Dearborn. These included the seven courses Medicinal and Aromatic Plants in Culture and Practice (BCHM 113), Principles of Biology (BIOL 100), Introduction to Organismal Biology (BIOL 130), Ecology (BIOL/ESCI 304), Field Biology (BIOL/ESCI 320), Plant Physiology (BIOL 335), and Plant Ecology (BIOL/ESCI 337). 684 students who were enrolled in these courses learned about such topics as the identification, classification, and taxonomy of plants and pollinators, types of pollination syndromes, classes and chemistry of secondary plant compounds for pollinator attraction, integrated pest management techniques, principles of organic farming/gardening, and threats of invasive species to native biodiversity and ecosystem structure/function. In the course, Plant Ecology, all students were tasked with participating in a semester-long group project to develop pollinator educational materials, such as interpretive

signs, websites, brochures, etc. in support of Bee Campus USA. One particularly impressive group project was a story map about the pollinator conservation activities taking place on campus. The story map can be accessed at: <https://storymaps.arcgis.com/stories/a6a627679bac4d04b13da038c9242e2d>

*How many of your for-credit courses included pollinator-related information in 2023?*

7

*How many students attended those for-credit courses?*

684

*How many service-learning projects did your campus host and/or support to enhance pollinator habitat on- and off- campus?*

1

*How many students participated in service-learning projects in 2023 to enhance pollinator habitat on or off-campus?*

75

*Please describe the service-learning projects your students were engaged in 2023, indicating which, if any, were associated with a course.*

With continuing financial support of a Ford College Community Challenge Grant from Ford Motor Co. Fund, the university's Environmental Interpretive Center (EIC) continued its student-led PolliNation Project. The project is a campus and community-wide initiative to build insect hotels in order to promote pollinator awareness and conservation. Insect hotels are human-made structures created to provide shelter and nesting sites for beneficial native pollinators. Such homes for pollinators will help a) raise awareness and educate citizens about the threats to and benefits of pollinators in our environment and b) mitigate the declines of pollinator populations in our urban landscape. Since the inception of the Pollination Project in 2019, 149 insect hotels have been distributed by UM-Dearborn students to the general public. An additional 13 larger schoolyard insect hotels have also been distributed to Dearborn Public Schools, where they have been in operation in schoolyard learning gardens since fall 2022. Each schoolyard insect hotel had its own unique design that incorporated suggestions for its appearance and contents from elementary and middle school students and their teachers. The schoolyard insect hotels are situated in the outdoor schoolyard gardens that had been established a few years earlier as part of the Dearborn SHINES project funded with grant support from the Michigan Health Endowment Fund. All school and general public participants are being educated via the PolliNation Project website, as well as information brochures, to recognize the importance of pollinators and the ecosystem services they provide with the intent for them to partake in sustainable practices and other green initiatives in the city. This past year, students in the course Plant Ecology replaced the entire contents of the large block-M insect hotel in the university's pollinator garden. As with any insect hotel, regular maintenance is required to maintain a safe and pest-free home for insects, so regular cleansing and/or replacement of filler materials, such as bamboo and wooden blocks drilled with holes, should be routine. After researching insect hotels and their invertebrate guests, the Plant Ecology students set about refilling the hotel with fresh material. Using two phone apps developed by senior student

computer science design teams (CIS 4951/4952) from the CECS-CIS College, PolliNation Project participants are encouraged to report on the visitors to their insect hotels. A Pollinator ID app allows users to identify visitors to insect hotels using photos processed by AI. A second PolliNation Hotels App maintains an online database and map featuring insect hotel locations and construction designs, along with information about local landscape features, including type of habitat, plant species inventories, and types of pollinators observed on site. Both apps are available for download for Android and iOS operating systems. Students also created accompanying walk-thru videos explaining how to use each of the two apps.

## WELCOME TO THE POLLINATOR GARDEN

**What is the pollinator garden?**

The pollinator garden is home to a diverse set of native plants and pollinators. This garden was created in 2013 by UM-Dearborn alumna, Mary Fastigi, to attract pollinators to campus. The plants were sourced from Wildtype Native Plant Nursery and were chosen based on their importance as nectar sources, host plants for egg laying and rearing larvae, sensory engagement, and aesthetic value.

**Why are pollinators important?**

Pollinators play an essential role in plant reproduction by helping to spread the pollen of plants between flowers. Different flower colors, shapes, and fragrances attract different kinds of pollinators. Pollinators include bees, butterflies, birds, and many more.

Bumblebee on swamp milkweed



Gray hairstreak on swamp milkweed



Red-spotted purple butterfly on coneflower



Silver-spotted skipper on ironweed



**Fun fact!**

Over 75% of flowering plants depend on animal pollinators to reproduce.

**Planting day**



**Host Plants:**

Plants that are home to organisms, such as insects, that feed and reproduce off the plant. Swamp milkweed is an example of a host plant.

**Did you know?**

Milkweed is a primary source for one of our major pollinators, **Monarch Butterflies!** It is the preferred plant for monarchs to lay their eggs on or rear because the caterpillars that hatch feed exclusively on the plant's leaves.

Although beautiful, be cautious when handling or gardening around this native plant because its sap (or milk) is slightly **Toxic!** Wash your skin immediately if exposed to the sap.

**If milkweed is toxic, then why aren't the monarch caterpillars affected by the toxin?**


The caterpillars accumulate and implement the digested toxins into their own defensive system, warding off predators by **displaying bright colors** in patterns across their bodies. This defense mechanism continues into their adult stages as butterflies.

Scan the code to visit the Environmental Interpretive Center website and learn more!



An example of an interpretive sign for the UM-Dearborn Pollinator Garden created by students in Plant Ecology (BIOL 337) for their semester-long Bee Campus USA project

## Milkweed & Monarchs




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Can you find these in our garden?


Swamp Milkweed  
(*Asclepias incarnata*)



Whorled Milkweed  
(*Asclepias verticillata*)



Butterfly Weed  
(*Asclepias tuberosa*)



An example of an informational flyer about monarchs and their milkweed host plants created by students in Plant Ecology (BIOL 337) for their semester-long Bee Campus USA project



Students in the course Plant Ecology pose next to the newly reconstructed block-M insect hotel situated in the university's Pollinator Garden

## Policies & Practices

*Please describe actions taken to make pest management more pollinator-friendly.*

The Grounds Department employs pest management strategies which include public education, sanitation, biological and mechanical controls, and when necessary, chemical pesticides. Turf & Irrigation: The university Grounds Crew maintains 58 acres of turf grass on campus, including fertilization, aeration, and disease prevention and treatment. The Grounds Crew maintains the university lawns at a taller height to reduce weeds and irrigation needs. Lawn clippings

and leaves are mulched to provide additional fertilizer. Yard waste is composted whenever possible. Soil testing is done annually to determine the needed fertilization requirements. Irrigation is monitored by a weather system that uses current weather conditions and plant requirements to determine the amount of water used. The Grounds staff includes several employees that are certified in Integrated Pest Management (IPM). This training reduces the amounts of pesticides used to control pests. Also, the university utilizes a pest management company called Goose Busters for geese management on campus. Geese management involves the use of dogs, primarily border collies, to harass geese away from the lawns, sidewalks, and parking lots on campus. Tree and Shrub Management: The Grounds Crew manages the wide variety of trees and shrubs on campus and treats for diseases and insect infestations. Existing plantings are maintained through scouting, pruning, trimming, fertilizing and sanitation. Pest infestations on all landscape materials are only chemically treated when other means are unsuccessful. New plants on campus are chosen by considering disease resistance, maintenance requirements, and environmental requirements. Ornamental Plantings: The Grounds Crew employs a master gardener who is responsible for maintaining and planting a variety of flowers and flower beds on campus, with an emphasis on using native species. The wide variety of perennial and annual plants adds beauty to the campus grounds. The Natural Areas Manager of the Environmental Interpretive Center stewards the 300-acre Environmental Study Area. A habitat management plan for this space has been developed and is in the process of being implemented.

*In your city or campus, are any policy initiatives underway to further protect pollinators, people or waterways from pesticides?*

**Not at present.**

*Did your committee participate in any continuing education on ecologically-based Integrated Pest Management planning?*

**No**

*Please check actions you have taken to make pest management practices more pollinator-friendly.*

- Only use pesticides as a last resort within the IPM plan
- Avoided use of pesticides in public sites containing designated pollinator habitat or other sensitive features (except when targeted use is deemed the best option for invasive or noxious weed, insect or disease management)
- Implemented non-chemical pest prevention and management methods on city or campus grounds
- Eliminated pesticide uses that are solely to maintain aesthetics on city or campus grounds
- Reduced the total area of city or campus-managed lands to which pesticides are applied

Learn More

Integrated Pest Management Plan: [Habitat Management Plan for Environmental Study Area at UM-Dearborn.pdf](#)

Recommended Native Plant List: [Pollinator-Friendly Native Plant Species List at UM-Dearborn.pdf](#)

Recommended Native Plant Supplier List: [Native Plant Supplier for the Environmental Interpretive Center at UM-Dearborn.pdf](#)