Bee Campus USA - University of Michigan-Dearborn

Report on 2022

Pollinator Habitat Creation & Enhancement

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 garlic mustard, 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. During 2022, in addition to general extensive post-pandemic weeding in the pollinator garden and rain gardens, both types of gardens were planted with supplemental bee and butterfly friendly native plant species, including swamp milkweed, wild geranium, and purple coneflower. Summer Sustainability Intern and UM-Dearborn Bee Campus USA committee member, Valerie Osowski, led the restoration efforts in the rain gardens.

How many habitat projects did you help to create or enhance last year?

5

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

60000

How many volunteers helped with those projects?

90

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
- Orchard
- Natural area with tree snags and stumps, and bare areas for ground nesting species
- Meadow
- 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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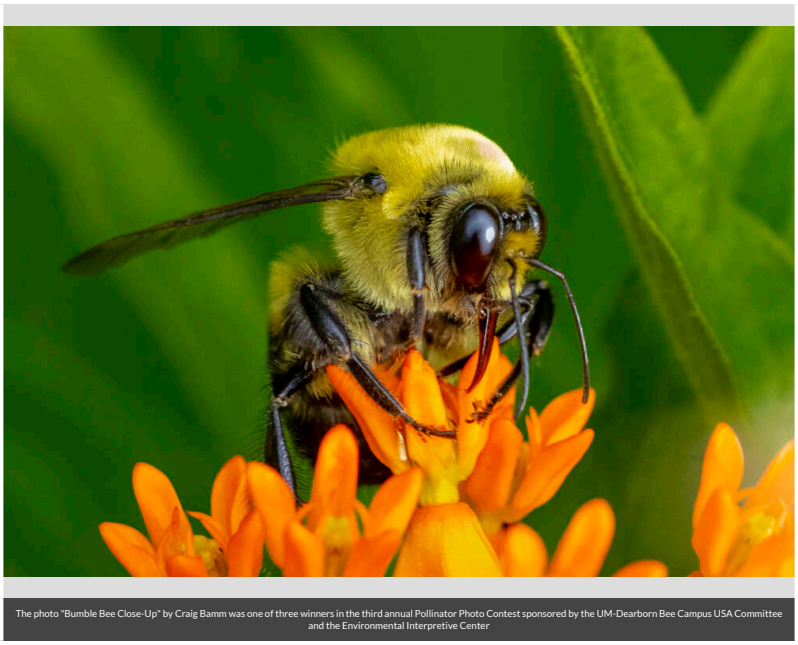
UM-Dearborn student, Valerie Osowski, led restoration efforts in the Environmental Interpretive Center's rain gardens

Education & Outreach

As the pandemic receded during 2022, the Environmental Interpretive Center at the University of Michigan-Dearborn relaunched its K-12 and community educational programming, including programs about pollinators and the habitats that support them, for about 1600 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, Understanding Insects and Spiders, Sprouts (AKA the Children's Gardening Program), and Young Naturalists. Each Wednesday and Thursday during the first 6 months of 2022, the staff at the Environmental Interpretive Center also led "I Wonder Wanders" which were hour-long guided walks through the campus' 300-acre Environmental Study Area. Participants learned about the natural history of the area, as well as the ongoing management efforts to preserve its local biodiversity. Since 2020, the Bee Campus USA Committee and the Environmental Interpretive Center have sponsored an annual Pollinator Photo Contest. The public was invited to submit wildlife photos in three categories: pollinators up-close, pollinator-flower interactions, and pollinator landscapes. A record 236 photos were submitted for consideration in 2022. While the majority of photos were taken of pollinators and plants throughout Michigan, we did have entries from other 14 other states, including from as far away as Georgia, Nebraska, and Washington. A YouTube video featuring some of the best photo contest entries was also shared online.

How many pollinator-related events did your affiliate host or help with last year (in total)?
45

How many people attended those events (in total)?
1950



The photo "Bumble Bee Close-Up" by Craig Bamm was one of three winners in the third annual Pollinator Photo Contest sponsored by the UM-Dearborn Bee Campus USA Committee and the Environmental Interpretive Center

Participants in the Children's Gardening Program at UM-Dearborn

Courses & Continuing Education

A variety of courses that include pollinator-related information are regularly taught at the University of Michigan-Dearborn in 2022. These included the 7 courses Principles of Biology (BIOL 100), Introduction to Organismal Biology (BIOL 130), Ecology (BIOL/ESCI 304), Field Biology (BIOL/ESCI 320), Plant Biology (BIOL 333), Plant Physiology (BIOL 335), and Plant Ecology (BIOL/ESCI 337). 582 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.

How many of your for-credit courses included pollinator-related information last year?
7

How many students attended those for-credit courses?
582

An example of an insect hotel interpretive sign designed by Plant Ecology students

Service-Learning

With 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. During spring 2022, 74 bird house-sized insect hotels were distributed by UM-Dearborn students enrolled in the course Plant Ecology (BIOL/ESCI 337) to the general public, bringing the total number of these insect hotels participating in the project to 135. After a pandemic-induced delay, schoolyard insect hotels were also constructed and installed at 13 Dearborn Public Schools during fall 2022. Each schoolyard insect hotel had its own unique design that incorporated suggestions for its appearance

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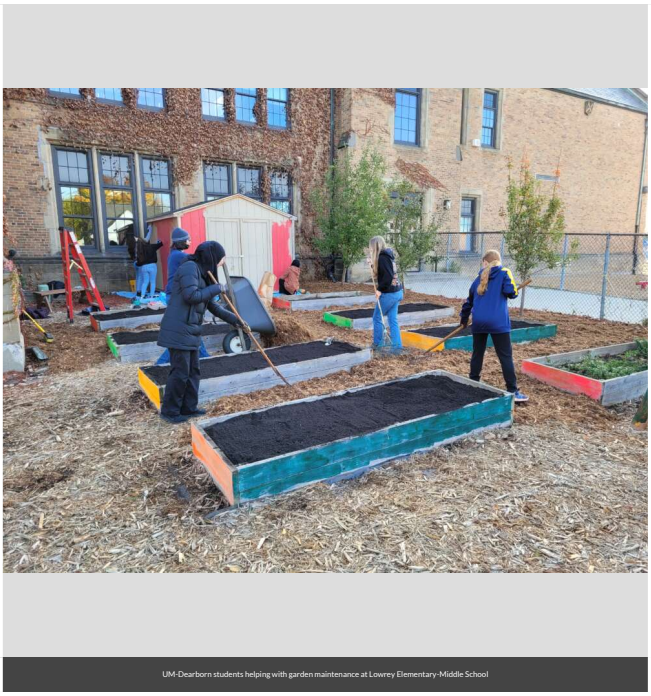
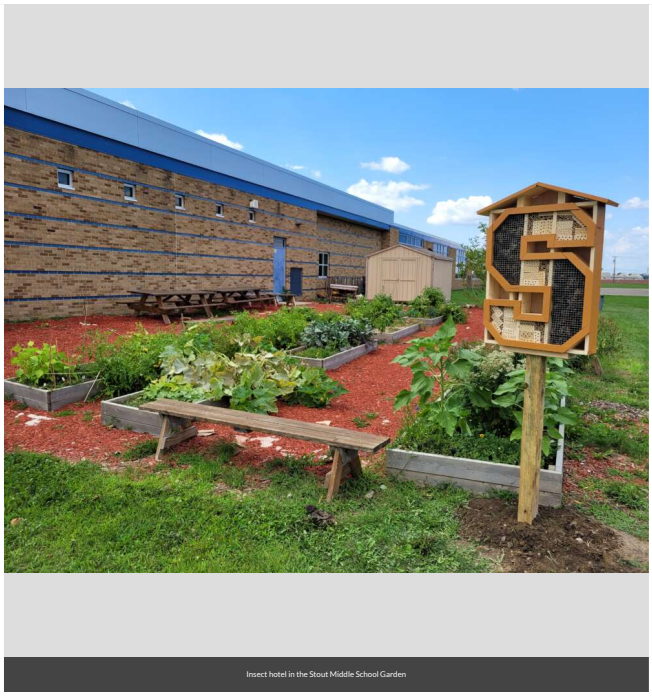
and contents from elementary and middle school students and their teachers. The insect hotels were mounted on 4" by 4" posts situated in the outdoor schoolyard gardens that had been established a few years earlier as part of the Dearborn SHINES project funded with grant support from the Michigan Health 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. 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. During fall 2022, undergraduate students enrolled in the course Plant Physiology (BIOL 335) were assigned to teams of 2-6 people who then visited 12 schoolyard gardens at Dearborn Public Schools where they assisted with general garden maintenance activities, such as weeding of raised vegetable and pollinator beds, adding compost/topsoil to garden beds, spreading of mulch over the garden base, and refurbishing and painting benches, tables, and storage sheds. In total, students spread more than 30 yards of woodchip mulch and 12 yards of compost/topsoil across all of the school gardens combined.

How many service-learning projects did your campus host and/or support to enhance pollinator habitat on and off-campus?
4

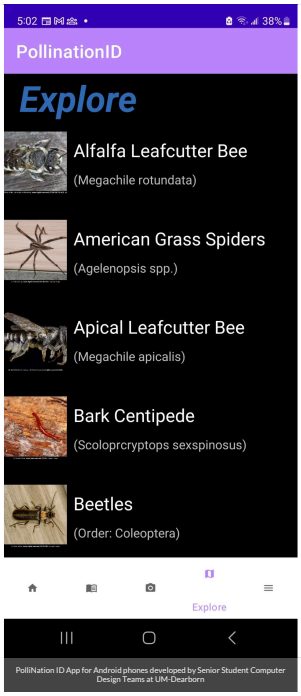
How many students participated in service-learning projects last year to enhance pollinator habitat on or off-campus?
68



UM-Dearborn students helping with garden maintenance at Lowrey Elementary-Middle School



Insect hotel in the Stout Middle School Garden



PolliNation ID App for Android phones developed by Senior Student Computer Design Teams at UM-Dearborn

Educational Signage

Two permanent interpretive pollinator-related signs are installed on the campus of the University of Michigan-Dearborn. One is situated in a rain garden outside the university's Environmental Interpretive Center building. It explains the benefits of using native plantings in rain gardens for storm-water retention, as well as providing food and habitat for beneficial native pollinators. The second sign is situated within the Environmental Interpretive Center's Pollinator Garden which has been recognized as a certified Monarch Waystation by Monarch Watch. This certification indicates that the Pollinator Garden provides a suitable number and diversity of native nectar and host plants to support visiting monarch butterflies.

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

2

Policies & Practices

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 also includes several employees that are certified in Integrated Pest Management (IPM). This training reduces the amounts of pesticides used to control pests. 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.

What actions have you taken to make pest management practices more pollinator-friendly?

- Implemented or maintained a written 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
- Reduced the total area of city or campus-managed lands to which pesticides are applied

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

Please describe actions by your affiliate to attend training on ecologically-based Integrated Pest Management and/or to review IPM plans and programs considered of high quality by Bee City USA?

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

Learn More

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