Bee Campus USA - University of Michigan-Dearborn

Report on 2021

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 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. A prescribed burn of the campus' Prairie Garden was also conducted in spring 2021 to assist with weedy species removal and native plant species recruitment and regeneration. This is third time a prescribed burn has taken place on the campus of UM-Dearborn.

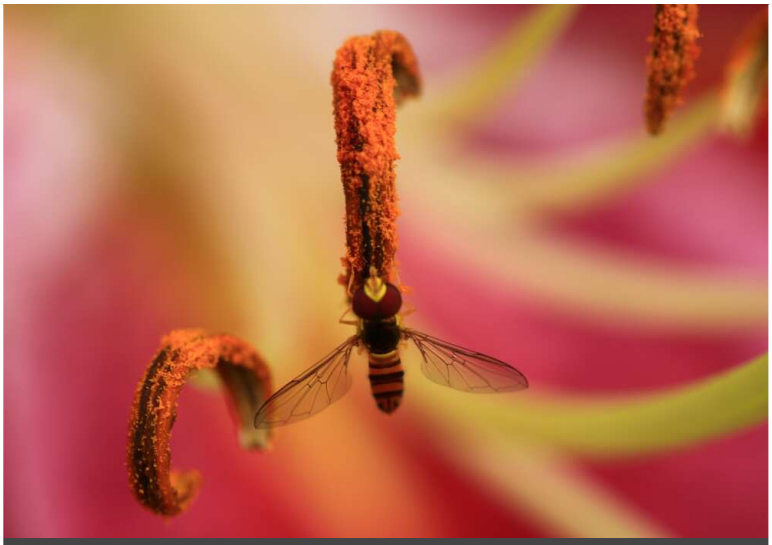
Burn crew members monitor a prescribed burn in March 2021 of the campus' Prairie Garden.

Education & Outreach

Before the pandemic, the Environmental Interpretive Center at the University of Michigan-Dearborn typically offered about 40 K-12 and community educational programs per year about pollinators and the habitats that support them to about 900-1000 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 (Children's Gardening Program), and Young

Naturalists. During 2021, however, the campus had only limited in-person classes and activities. In addition, the pandemic forced the closure of the Center to most visitors. In response, the Environmental Interpretive Center established two new programs: the Michigan Master Naturalist Rouge River Region Program and the "I Wonder Wanders" program. The former is open to adults interested in learning about southeast Michigan's natural environment and ecological communities with a focus on native flora and fauna. Six sessions, held monthly from May-October, explored a variety of topics, including native plants and trees, butterflies and their habitats, and wetland habitats. Twenty-seven people graduated in the inaugural year of the program for the Rouge River Region. Starting in the autumn staff at the Environmental Interpretive Center began offering twice weekly "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. Building on the success of the previous year, the Bee Campus USA Committee and the Environmental Interpretive Center sponsored their second annual Pollinator Photo Contest. The public was invited to submit photos in three categories: pollinators up-close, pollinator-flower interactions, and pollinator landscapes. 147 photos were submitted for consideration in 2021. While the majority of photos were taken of pollinators throughout Michigan, we did have entries from other states, such as Indiana, Pennsylvania, and Georgia, and even a few from the country of Chile! A YouTube video featuring some of the best photo contest entries was also shared online.

Members of the inaugural class of the Michigan Master Naturalist Rouge River Region Program



The photo "In the Lily's Heart" by Yi Guo was one of three winners in the second annual Pollinator Photo Contest sponsored by the UM-Dearborn Bee Campus USA Committee and the Environmental Interpretive Center

Courses & Continuing Education

A variety of for-credit courses that include pollinator-related information are regularly taught at the University of Michigan-Dearborn. In academic year 2020-2021, these included the 5 courses Principles of Biology (BIOL 100),

Introduction to Organismal Biology (BIOL 130), Ecology (BIOL 304), Plant Physiology (BIOL 335), and Invasive Species Ecology (BIOL 491/508). 579 students who were enrolled in these courses learned about such topics as the 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.

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. In spring of 2021 while most of the campus was closed, about 61 insect hotels were distributed by students to faculty and staff of the University of Michigan-Dearborn via curbside pickup. People participating in the project are being educated 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. In 2022, as many as an additional 120 hotels will be made available to the public in order to be placed in residential, commercial, and recreational spaces, thereby providing learning opportunities for pollinator conservation and management to thousands more residents throughout Dearborn. 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 user guide videos explaining how to use each of the two apps. Originally, the installation of schoolyard insect hotels, the distribution of individual insect hotels to the public, and the delivery of on-campus insect hotel workshops were scheduled to take place in spring 2020. However, due to the COVID-19 pandemic, these activities were delayed or cancelled. Planning is currently underway to reschedule these events for 2022.

PolliNation Project participants claim their insect hotel to bring home.

Insect hotels await curbside pickup by PolliNation Project participants.

A screenshot of the user guide video for the PolliNation Hotels app

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. A temporary student poster about the university's pollinator education and conservation initiative, called the PolliNation Project, is also on display in the exhibition space of the Environmental Interpretive Center.

This poster educates visitors to the Environmental Interpretive Center about the PolliNation Project

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

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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.

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

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