Bee Campus USA - Hobart and William Smith Colleges

Report on 2021

Pollinator Habitat Creation & Enhancement

Our first two pollinator patches have been very successful but needed some additional support and enhancement this past year. In particular, we added plants with a spring bloom time since summer and fall had many flowers in both patches but none in the spring time. In addition, we cut old flower stalks in half and piled all the top halves nearby with the intention of providing nesting habitat in both the standing stalks and the ones on the ground. Of course we had to remove several types of weeds that started to creep in and then covered unplanted areas with mulch. We also constructed a third pollinator patch in a partially shaded area to add diversity to the species of plants used. These new species include: hairy beardtongue, spotted bee balm, late figwort, wild bergamot, and tall bellflower. These plants are rarely or not present on our campus at all prior to this planting. Four of our Grow Zones were also enhanced to improve their environmental benefit. Early in the spring, several students joined staff from the Grounds Dept to add wildflower seeds to four of the campus Grow Zones. The Grow Zones are designed to be low maintenance and reduce overall man-hours needed compared to cutting the grass. So no cutting, weeding, or watering is performed on them. Despite that, the wildflowers in two Grow Zones flourished while the other two had sparse flowers growing mixed with the grass. We hope to continue to seed the Grow Zones until they are able to sufficiently able to grow wildflowers every year by themselves. Lastly, we maintained our standard upkeep in the HWS orchard, herb garden, and vegetable garden. This included removing invasive and harmful species and adding locally produced compost for nutrients. Our orchard did expand by adding pear trees and propagating our strawberries and mint to several new areas.

Recently seeded, we now have wildflowers coming up in the Grow Zones

Our newly planted pollinator patch.

Our first pollinator patch from last year with several species blooming including boneset, joe pye weed, blue vervain, cardinal flower, calendula, and cut leaf coneflower.

Education & Outreach

For our education and outreach into the Geneva community we worked with the local Boys & Girls Club. A member of our committee, Professor Nan Crystal Arens, has managed the Roots and Shoots program at the club for over 10 years. This year with the help of Sustainability Manager, Michael Amadori, and several HWS students we expanded beyond the normal gardening activities of the club. Over the course of the summer we visited the club 4 times. During our visits we were able to: — explain to the students how pollinators are necessary for their garden to grow food — search nearby fields for pollinating insects and identified Goldenrod soldier beetle and Cabbage white butterfly and discussed their role in pollination — install a honeybee box and purchase a nuc to go in it — visit the bee box with the students and describe the importance of bees — harvest honey and give students jars to take home

Searching for pollinators and finding the Cabbage white butterfly and Goldenrod solider beetle.

Extracting honey with students from Boys & Girls Club

Checking on the newly installed bee box at the Boys and Girls Club.

Courses & Continuing Education

Please see the attached excel file that explains the topics and information for courses offered at HWS that discuss pollinator-related information. Several courses were not offered this past year due to teaching constraints.

Pollinator-related classes FY21' (Fall 2020 & Spring 2021)

Dept	Cours	Name	# of students	Professor	Description
ENV	216	Birds in Our Landscape	14	Mark Deutschlander	Examining population trends and geographical distributions of birds can help us understand the impacts of urbanization, pollution and pesticides, climate change, and more. In this course, you will learn how distributions of birds inform scientists about environmental change and the impacts of change on the function of ecosystems and agriculture production. You will learn, firsthand through field excursions and exercises, to identify local bird species and how to conduct some basic field techniques for direct monitoring of birds.
BIOL	167	The Secret Life of Bees	21	Brielle Fischman	This is an introductory biology course that examines major topics in biology through the lens of bee biology, ecology, and evolution. Pollinator and bee-related topics include; bee diversity and evolutionary history; bee social and solitary lifestyles, including features of eusociality; pollination from the perspectives of flower anatomy, bee anatomy and adaptations for pollination, and species interactions; sex determination in bees and its implications for eusocial evolution and honey bee colony health. In addition to using a general introductory biology textbook, students also read excerpts of A Sting in the Tale by Dave Goulson.
BIOL	225	Ecology	22	Meghan Brown	This course is an introduction to ecological theories as they apply to individuals, populations, communities, and ecosystems. Topics covered include physiological ecology, population dynamics, competition, predation, community structure, diversity, and the movement of materials and energy through ecosystems. Pollination is a topic in the Ecology course and students read and discuss papers related to pollinator and their place in the food web and ecosystem.
ENV	200	Environmental Science	24	Kristen Brubaker	We do a lab where we identify pollinators, map pollinator/flower interactions, and examine and discuss different types of pollen.
~~BIOL~~	~~167~~	~~Plants and People~~	Not offered this past year	~~Shannon Straub~~	~~This course explores the basic biology of plants and emphasizes the ways in which humans and plants are similar and different with a focus on how we sense and respond to the world around us, all while covering all of the core principles of biology. We always spend several lectures on cover pollinators and pollination syndromes~~
~~BIOL~~	~~228~~	~~The Biology of Plants~~	Not offered this past year	~~Shannon Straub~~	~~The diversity of plants is enormous, ranging from microscopic phytoplankton to trees more than 300 feet tall. Using an evolutionary approach, students study this great diversity and follow the development of plants from the earliest photosynthetic single-celled organisms to complex flowering plants. Topics include reproduction and pollination, plant structure and function, plant anatomy, physiology, and ecology.~~
~~BIOL~~	~~356~~	~~Ornithology~~	Not offered this past year	~~Mark Deutschlander~~	~~We cover birds foraging, which includes frugivorous (seed dispersers) and nectivores (pollinator species). I also show at least one film to my classes that discusses pollination by hummingbirds and other nectivorous birds~~
~~HIST~~	~~151~~	~~Food Systems in History~~	Not offered this past year	~~Sarah Whitten~~	~~We spend a few lectures to discuss the importance of bell pollinators to the production and diversity of apples and other crops.~~

A list of the current years

Service-Learning

Our service learning project this year was in partnership with the City of Geneva Parks Dept. Over the course of several years, a large amount of seaweed built up along the shoreline at the city park. The majority of it was naturally broken down into a fine, nutrient-rich mulch substitute. We planned a service learning project with Geneva Public Works Director, Joe Venuti and City of Geneva Green Committee member, Anne Hoyt. In spring 2021 semester a group of students from Hobart and William Smith Colleges along with Sustainability Manager, Michael Amadori, met Anne Hoyt at the waterfront. The students were broken into groups. Some started to weed the garden beds and others clearing an area near the stream bank. Others started to shovel and clear out the seaweed. Once the garden beds and stream bank were cleared, we thoroughly mulched the area using the seaweed. Afterwards we planted a variety of native pollinator plant purchased from a local nursery called Butterfly Effect. The plants put in the ground were: 10 Joe Pye Weed, 2 Boneset, 6 Blue Vervain, 8 Button Bush, 2 Great Blue Lobelia, 4 Cardinal Flower, and 8 Rose Milkweed. Most of the students who came to help were part of our campus-wide Day of Service event and not involved with the pollinator projects on campus. They learned native pollinator plants, correct mulching and weeding techniques, and the importance of maintaining providing the necessary habitat for pollinators to counteract suburban sprawl, habitat loss, and other threats.

Making the World Safer for Pollinators
Bee Campus USA™
One Campus at a Time
An initiative of the Xerces Society

XERCES SOCIETY
for Invertebrate Conservation

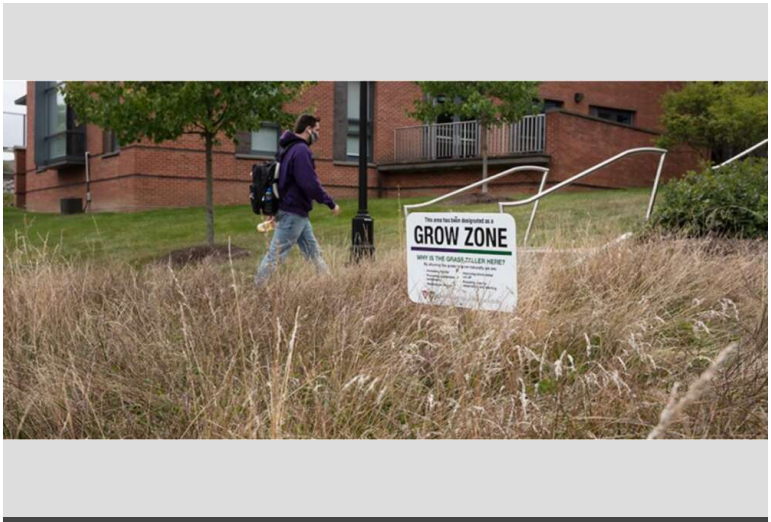
Students clearing out the seaweed along the lakeshore.

Students removing weeds, mulching, and planting our native pollinator plants

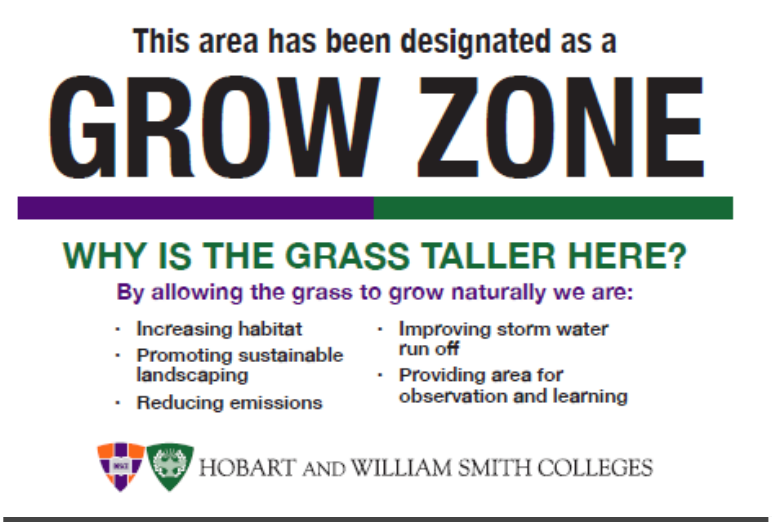
A section of the creek shoreline with flags to indicate the location of new plants surrounded by the natural seaweed mulch.

Educational Signage

As part of the 12 Grow Zones built around campus we added a sign to each one. While the signs would be considered temporary, they were up all summer and fall and only taken down for the winter months. We plan to put the signs back out in spring time as a constant reminder to students, employees, and visitors of our initiatives to help make our campus more pollinator friendly.



A student walks by one of our Grow Zones on campus.



The current signs in each of our Grow Zones.

Policies & Practices

On campus we follow an integrated pest management program. This means that we only use pesticides when absolutely necessary and after mechanical measures are utilized. These applications aid in cutting down unwanted invasives or undesirable plants from taking over beneficial plants, such as flowering perennials. These applications are also utilized to cut down on trimming. This helps reduce emissions produced by weed trimming machines. All applications are done according to New York's Department of Environmental Conservation policies and are recorded and submitted yearly. Our grounds staff has several licensed applicators on our team. Each applicator has to attend several continuing education classes to keep this license. Additionally, we have selected areas on campus dedicated to be Grow Zones that will allow for increased habitat, emissions reduction, and pollinator growth.

Integrated Pest Management Plan: HWS IMP plan.pdf

Recommended Native Plant List: HWS native plants and suppliers.pdf

Recommended Native Plant Supplier List: HWS native plants and suppliers.pdf

Learn More

https://www2.hws.edu/sustainability/projects-operations/#spaces

Making the World Safer for Pollinators
Bee Campus USA
One Campus at a Time
An initiative of the Xerces Society

XERCES SOCIETY
for Invertebrate Conservation

Sustainability@hws.edu

https://www.facebook.com/GreenHWS/
https://www.instagram.com/greenhws/
https://twitter.com/GreenHWS