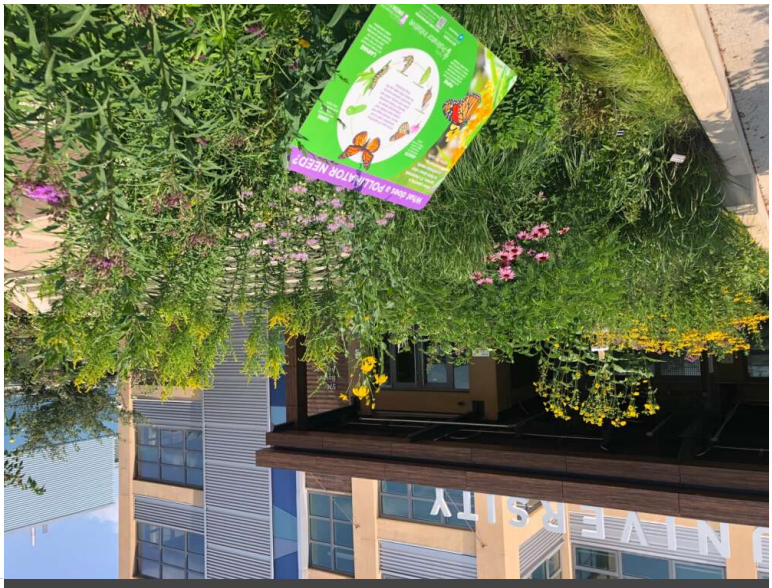
Bee Campus USA - Tufts University Medford-Somerville

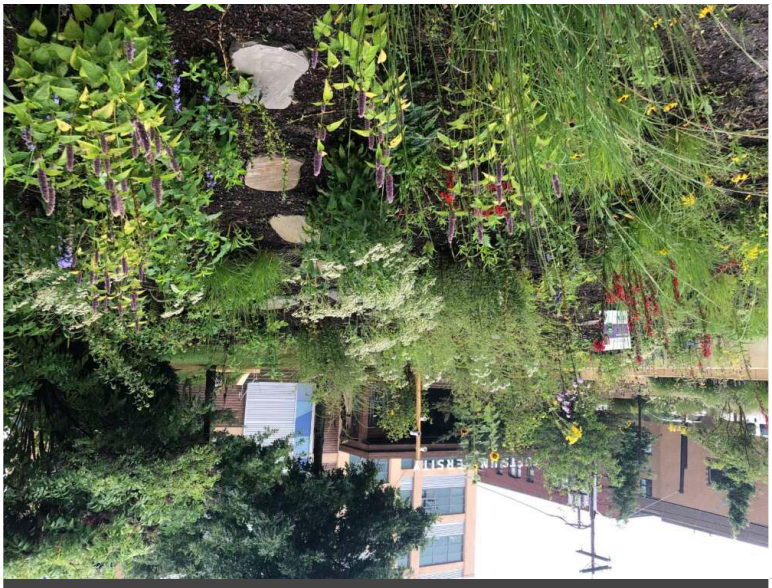
Report on 2021

Pollinator Habitat Creation & Enhancement

On campus, we added four gardens totaling 2500 sq. ft. of pollinator habitat since 2020. Each garden contains 10-15 species of native plants that bloom throughout the growing season from June through October. These gardens are managed for insects throughout the year. Not only did we select species to provide food to multiple life stages of common insects, e.g. Vernonia noveboracensis support larval and adult American ladies, but we they also contain bunch grasses to provide food for larval butterflies during the summer and witner cover for bumble bee queens. We balance the university's need for tidy gardens on campus with the insects' need for undisturbed habitat by hand-pruning all vegetation and leaving a thin layer of leaves in the garden beds. We also conducted biodiversity surveys of the pollinator communities visiting our gardens so we knew which insects were benefitting from our habitat enhancment programs. In total, we observed 115 species of pollinating insects, including at-risk bumble bee Bombus fervidus and specialist solitary bees like Melissodes denticulatus. To increase the amount of pollinator habitat off campus, in summer 2021, we hosted a discount native plant sale. We collected and germinated native plant seeds from our garden to preserve local ecotypes and ensure that all plants were grown without pesticides. We also wrote and published handouts to make gardening less intimidating. To make our sale accessible to all, we set up shop at our gardens within walking distance of thousands of homes. Each plant went for just $2. The community response blew us away: we sold out of 850 plants in 90 minutes! We are excited to host a second sale in summer 2022. We also collaborated with local groups to enhance plantings for pollinators in Somerville and Medford. We worked with a local Unitarian Universalist church to plant a 250 sq. foot. native pollinator garden on their property, a local community garden to maintain 1000 sq. ft of native garden, and advised separate student-led initiatives on campus to revitalize the existing green roof for pollinators and add native plants to beds outside the School of Fine Arts campus.



Our flagship garden on campus contains interpretive signage to educator visitors of the value of considering the entire life cycle when creating pollinator habitat.



Our newest campus garden contains 15 species of native plant and stepping stones so people can interact with plants and pollinators in the city.

Education & Outreach

Our approach focuses on teaching people to notice, appreciate, and respect their local pollinators. We engage with people in-person and with thousands more through social media (millions of views on @PollinateTufts Instagram Reels!). We hosted dozens of pollinator related events, ranging from teaching semester long classes to undergraduates to delivering lectures to hosting pollinator trivia to hosting a discount native plant sale. Our most popular in-person activity is the Pollinator Safari, where people visit gardens and learn from TPI naturalists how to observe, name, understand, and respect their neighborhood pollinators. We also host pollinator-themed trivia nights at local breweries, visit local elementary schools, deliver guest lectures to community groups, and teach semester-long classes to Tufts undergraduates. Throughout this work, TPI members leave community members with clear, concrete steps for conserving pollinators like "Use SEEDS: Spread native flowers, Employ a life cycle approach, Eliminate pesticide use, Discover what's around you, and Share what you know." Our committee hosted all 53 of these events—clearly, there is tremendous demand for pollinator-themed outreach in our community, and we want to meet that demand in a meaningful and consistent way.

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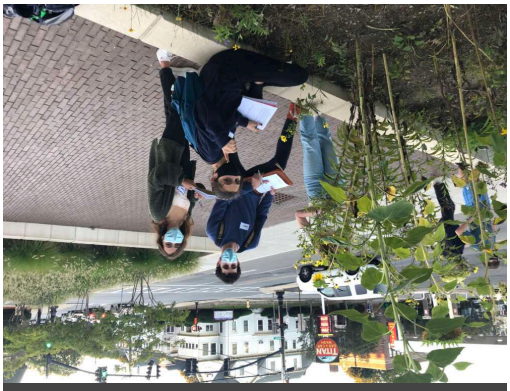
Team TPI hosts pollinator trivia at Aeronaut Brewery in Somerville, MA.

TPI co-president Nick Dorian teaches about the diversity of wild bees in Massachusetts.



Students in Tufts class "All About Bees" record field observations on wild bees in campus pollinator gardens.

Courses & Continuing Education

We've incorporated pollinator education into undergraduate courses at Tufts University in two main ways. 1) Semester-long classes about pollinators. Two of our members taught semester-long courses to undergraduates entirely about pollinators. These discussion classes were taught to non-science majors and bridged entomology, botany, economics, social science, and conservation biology to engage 50 students total with pollinator conservation in a meaningful way. In one class, "All About Bees: Diversity, Ecology, and Conservation," students got practice observing and identifying insect pollinators in urban gardens, interpreting primary scientific literature on insect declines, and considering how to balance the needs of diverse stakeholders when implementing conservation schemes. We'd be happy to share syllabi for either of our courses upon request: tuftspollinators@gmail.com. 2) Guest lectures in undergraduate courses. Four of our members delivered lectures/led activities to 805 students in 9 environmentally-related courses, including "Intro to Environmental Fieldwork," "Plants & Humanity," "New England and the Roots of American Environmentalism," and "Food 4 All: Biotechnology and Sustainability in Food Systems." Although the content in each class period is tailored to the specific course, in general, students learned about the difference between wild and managed pollinators, the importance of pollinators for global food security, and the main ways to promote pollinator conservation. In more than one class, students visit our gardens to watch and record observations on pollinators in journals and on iNaturalist.org.

Tufts undergraduates in Intro to Environmental Fieldwork found a native black swallowtail caterpillar on golden alexander's (Zizia aurea) in our pollinator gardens.

TPI co-president Nick Dorian hosts a pollinator safari at a local park for 25 curious community members. We found the Big 5: bees, butterflies, wasps, hover flies, and beetles!

TPI co-president Jessie Thuma explains the bumble bee life cycle to attendees of the Waltham Street Fields Farm Day.

Service-Learning

Tufts Pollinator Initiative taught experienced undergraduate and graduate students how to plant native plants and save seeds from our gardens. We distributed collected seeds to community members at our flagship fall events Seeds & Cider. We also worked with a local elementary school to teach 80 second graders about the life cycle of a seed and how to germinate their own native plants from seeds by letting seeds "hibernate" over the winter. Last, we worked with local community groups to teach them how to garden for pollinators, resulting in a new garden at a local Unitarian Universalist church in Medford and the continued upkeep of native pollinator habitat at the Tufts Park community garden in Medford, MA.

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Tufts students worked to add 750 sq. ft. of pollinator garden to existing green space on campus.

Tufts students planted a new 250 sq. ft. pollinator garden outside the Tufts Facilities building on campus.

Educational Signage

Each of our 4 main educational signs describes a different aspect of urban pollinator conservation, from how gardens can support insects throughout their life cycles to the importance of habitat connectivity for urban pollinator conservation. We also installed 30 smaller plant identification signage so that visitors can learn the names of the native plants in our gardens. All educational signage on campus is permanent. We also produced garden yard signs that our community members can install in their gardens if they manage them to not include pesticides.

Our "What does a pollinator need?" sign teaches visitors about how to plan a garden so that all life stages are supported.

Our "Gardening for Insects" sign teach visitors to our campus library the value of growing plants throughout the year for pollinators.

Our "Cities for People and Pollinators" sign teaches visitors about the importance of habitat connectivity in cities.

Policies & Practices

Our focus on policy has been through the creation of an Integrated Pest Management plan for Medford-Somerville campus. We created the plan in collaboration with Tufts Facilities grounds team to eliminate all pesticide use in our 2500 sq. ft. of native pollinator habitat, and limit use of organic herbicides to a last resort across the rest of campus. All of our educational materials encourage people to eliminate pesticide use on residential properties, and our interpretive signage discourages the use of pesticides. We also produced garden yard signs that our community members can install in their gardens to highlight the value of gardening without pesticides. All of our native plants planted in the gardens are grown without pesticides and the native plants that we grew by hand and distributed during our sale were never treated with pesticides. We've also created social media content on our @PollinateTufts social media channels to make people aware that ornamental plants can be pre-treated with pesticides and should be avoided.

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Integrated Pest Management Plan: FINAL TPI Tufts IPM.pdf

Recommended Native Plant List:
https://sites.tufts.edu/pollinators/guides/
Recommended Native Plant Supplier List:
https://sites.tufts.edu/pollinators/guides/

All our pollinator friendly green space on campus is maintained without pesticides, and in summer 2021 we grew and distributed 850 native pesticide-free plants to community members.

Learn More

sites.tufts.edu/pollinators
tuftspollinators@gmail.com

https://www.facebook.com/PollinateTufts

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https://twitter.com/PollinateTufts

Team TPI hosts a seed saving workshop at our campus gardens in fall 2021.

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