

Bee Campus USA - North Carolina State University

Report on 2024

Pollinator Habitat Creation & Enhancement

Please describe pollinator habitat creation or enhancement projects in your community in 2024, and whether your committee hosted them or not.

The 2023-2024 Bee Campus USA intern, Ren Rooney, led 18 people in planting a Piedmont Prairie on April 24, 2024. The project replaced an area of turf grass with native plants intended to provide food, cover and nesting opportunities for pollinators. It is composed of native perennials, wildflowers, and warm-season grasses. The Piedmont prairie was chosen to combat urban expansion, support rewilding efforts and maximize wildlife value. Another student-led effort is the Landscape Architecture Design-Build course, which added pollinator-friendly plants as part of a new student-centered landscape design on campus. Landscape Services, which has representation on the Bee Campus USA Committee, added additional perennial plants and edible pollinator containers at numerous locations throughout campus and as part of stormwater device redesigns.

How many habitat projects did you help to create or enhance in 2024?

13

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

112

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

7

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

21300

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
- 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
- Native pollinator-friendly shrub border/hedgerow planting



A team of 18 volunteers worked to plant plugs for the Piedmont Prairie, led by the 2023-2024 Bee Campus USA intern Ren Rooney on 4/24/24.

Education & Outreach

Please describe pollinator conservation events or outreach activities in your community in 2024, indicating whether your committee hosted them or not.

In March 2024, the Students for Organic Living (SOL) Garden club partnered with Beekeepers Club to build a bee hotel for the community garden with 15 students who volunteered. Along with this, two meetings were held to discuss native bees, bee hotels, and the importance of pollinator habitats in urban areas. In April 2024, Landscape Services hosted a table at the annual Earth Fair expo where they gave away seeds and information on pollinators. The Bee Campus USA Committee also hosted an iNaturalist competition encouraging students to submit photos of bees around campus to our competition page to encourage the collection of citizen science data and interaction with campus pollinators. Also in April, the Bee Campus USA Committee intern hosted a Piedmont prairie planting day and the SOL Garden club led an Earth Month themed garden workday, where 10 student volunteers planted creeping thyme in the community garden stepping stone path. During the summer, the JC Raulston Arboretum held two events: "Native Pollinators: Lessons Learned Keeping Backyard Native Bees" and "Building a Native Garden in Sun and Shade." During the fall semester, the Agroecology Education Farm hosted a Native Pollinator Garden Workshop and the SOL Garden hosted four work days accomplishing the following: 1) repurposing an old, poorly conditioned wheelbarrow into a garden planter with flowering perennial, speedwell and herbs, Italian oregano and lemon thyme. Student volunteers engaged in sustainable sourcing, small-scale growing, and garden care at this event, 2) Garden care and compost, 3) Planting edible wood shrubs, and 4) Painting and installing education signs for the garden.

How many pollinator-related events or outreach activities did you host or help with in 2024 (in total)?

41

How many people attended those events (in total)?

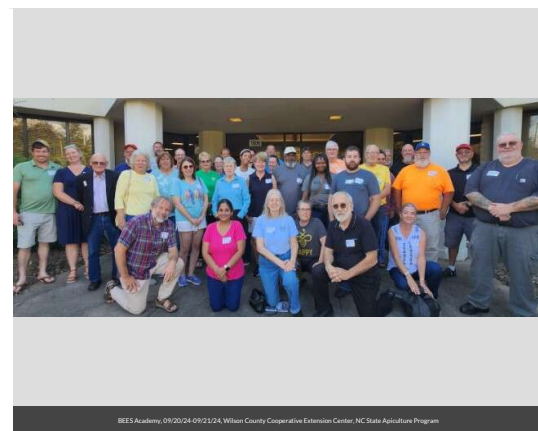
10362

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

11

Number of temporary interpretive/educational/Bee Campus USA signs installed in 2024?

4



Curriculum, Continuing Education, & Service Learning

Please describe the curriculum your campus engaged in 2024, indicating whether it was part of a for-credit course or continuing education.

Multiple for-credit courses discussed the unique roles pollinators play and their intersection with people and urban landscapes. This included hands-on projects studying insects and their habitat. Courses also taught about best practices of landscape design and habitat management with pollinators in mind. The university also offered a number of webinars and events through its Cooperative Extension centers located around the state, including the JC Raulston Arboretum. The NC State Apiculture Lab offered numerous courses explaining the basics of honey bee biology and management.

How many of your for-credit courses included pollinator-related information in 2024?

4

How many students attended those for-credit courses?

216

How many of your continuing education courses included pollinator-related information in 2024?

29

Please describe the service-learning projects your students were engaged in 2024, indicating which, if any, were associated with a course.

The Bee Campus USA Committee on campus hosted three student internships. One student supported current and future pollinator habitats on campus through hand-on maintenance of preexisting pollinator spaces and by providing recommendations for additional habitats. Two other students worked as a pair focusing on integrated pest management and pollinator-friendly alternatives to turf lawn. The Bee Campus USA Committee hosted a “NC State

Piedmont Prairie Volunteer Opportunity” in which 18 volunteers helped plant a campus pollinator habitat while learning about pollinators. Also, the campus SOL garden hosted multiple work days during the academic year.

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

3

How many students participated in service-learning projects in 2024 to enhance pollinator habitat on or off-campus?

28



In August 2024, graduate students in ENT 604 participated in a half-day field lab where they examined bee thermoregulation on Grandfather Mountain in western North Carolina. They measured both air temperatures and bee body (surface) temperatures to see whether bees maintained consistent flight temperatures even when air temperature dropped with altitude. Photo by Clyde Sorenson.



Closeup of measuring bee surface temperature with a thermocouple probe while the bee is restrained in a 'bee squeezer' cage. The method does not injure the bees, who return to foraging upon release. Photo by Clyde Sorenson.

Policies & Practices

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

The 2024-2025 Bee Campus USA Interns have been working toward making pest management more pollinator-friendly at NC State by creating an Integrated Pest Management (IPM) plan with practices that minimize harm to

beneficial insects, while effectively managing pests. These guidelines include significantly reducing or eliminating the use of pesticides in these areas, as pollinators are highly sensitive to chemical exposure. When pest control is necessary, the plan emphasizes the use of targeted, low-toxicity options, such as organic pesticides or biological controls, turning to nontoxic pesticides as a last resort. Additionally, the plan promotes cultural practices such as diverse plantings, companion planting, and healthy soil management to naturally reduce pest pressure and create stronger ecosystems. Mechanical controls, such as hand removal of pests or the use of physical barriers, are also prioritized to avoid chemical intervention. Regular monitoring and scouting help identify pest issues early, which allows for actions to be taken against unnecessary pesticide usage.

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

North Carolina State University is working to protect pollinators, people and waterways by expanding green spaces and reducing pesticide use through development of a campus-wide “levels of care” system. Levels of Care refer to categorizing different areas around campus, and the required amount of maintenance needed to keep the space healthy. This system helps manage campus landscapes more sustainably by tailoring maintenance to each area’s needs, and limiting chemical use when possible. The university has also created pollinator-friendly spaces such as the Pollinator Garden, Piedmont Prairie, and various campus green spaces. The NC State Greenspaces Map highlights over 50 outdoor areas to encourage people to spend time in nature. These efforts, along with ongoing Bee Campus USA projects, support a healthier and more sustainable campus.

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

Yes, the Bee Campus USA interns attended the 2024 Professional Grounds Management Society Webinar Series on Good Bugs/Bad Bugs. Also Elsa Youngsteadt presented to ~50 landscape professionals in New Hanover County in January 2025 about bee-safe urban landscapes.

Please check actions you have 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

Any lessons learned you would like to share?

For the second year in a row, NC State has offered student internship positions through the Bee Campus USA Committee. These have engaged more undergraduate students in pollinator work while also expanding the activity of

the Bee Campus USA Committee. Every year the interns are encouraged to live into their interests, so the internship deliverables have varied widely and provided a diverse range of benefits to the campus pollinator ecosystem.

Committee Photo

Learn More

Integrated Pest Management Plan: [Maintenance Plan.pdf](#)

Recommended Native Plant List:

<https://gardening.ces.ncsu.edu/gardening-plants/native-plant-resources/%20>

Recommended Native Plant Supplier List:

<https://growingsmallfarms.ces.ncsu.edu/growingsmallfarms-pollinatorgarden/>

<https://sustainability.ncsu.edu/campus/pollinators/>
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