

Bee Campus USA - North Carolina State University

Report on 2023

Pollinator Habitat Creation & Enhancement

Please describe pollinator habitat creation or enhancement projects in your community in 2023, and whether your committee hosted them or not.

In March 2023, the Bee Campus USA Committee hosted a volunteer Pollinator Garden Work Day. Employees, students, and other volunteers refreshed a pollinator garden on Centennial Campus by removing weeds and dividing perennial plant clumps to be re-planted. Beginning in August 2023, a designated Bee Campus USA Committee student intern used ArcGIS Field Maps surveys to monitor the health, available pollinator resources, and pollinator activity in pollinator gardens around campus. The student intern also secured grant funding to create a campus Piedmont Prairie plot in spring 2024. Already, efforts are underway at removing turf grass, placing a biodegradable weed cover, and purchasing native flowers and warm season grasses to plant in April 2024. In spring 2023, Landscape Services swapped 12 annual plant beds to perennial plants on Centennial Campus. We designated several temporary “No Mow Zones” (inspired by “No Mow May”) with educational signage, to allow the growth of pollinator-attractive flowers. Student groups also got involved. The NC State Sustainability Stewards created a new Campus Green Haven entitled the Talley Green Terrace, implementing planter boxes for pollinators on the third-floor terrace of our Student Union, as well as two other sites for pop-up pollinator gardens. The Department of Biological and Agricultural Engineering designed a pollinator and vegetable garden that engages students in a collection of native wildflowers and herbaceous perennials. It highlights native pollinators and includes labels that identify native plants. It also elevates sustainable permaculture farming.

How many habitat projects did you help to create or enhance in 2023?

7

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

22

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

7

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

320

Please check all that describe the habitats your affiliate helped to create or enhance last year with pollinator benefit in mind.

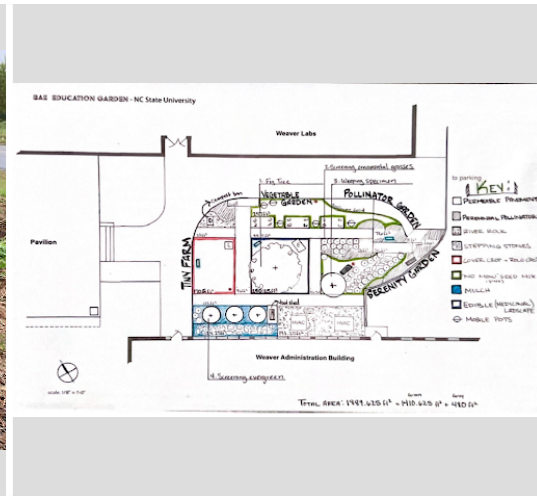
- Flower garden
- Vegetable garden
- Pollinator-friendly lawn (with flowering clover, dandelions...)
- Native milkweed planting for monarchs and bees (where appropriate)
- Invasive/exotic plant species removal for habitat improvement
- Rain garden/bioswale



Progress of our first campus Prairie plot - mulch on top of a biodegradable weed barrier to prepare the soil for planting in April 2024.



Volunteers refreshed a pollinator garden on Centennial Campus in March 2023.



Department of Biological and Agricultural Engineering Student Garden concept and design.

Education & Outreach

Please describe pollinator conservation events or outreach activities in your community in 2023, indicating whether your committee hosted them or not.

Representatives from NC State's BCUSA committee attended the "Wake Pollinator Protectors" meeting hosted by the City of Raleigh in which organizations from our county met to discuss recent and future conservation efforts and collaborate on solutions to current issues. At the annual NC State Earth Fair in April 2023, several pollinator-related exhibits were featured by representatives from the Beekeepers Club, Landscape Maintenance and Operations, and Bee Campus USA Committee. The 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. The winner who submitted the most pictures received a T-shirt designed and printed at NC State and honey from the Farmer's market. In summer 2023, the committee and Landscape Services hosted a Pollinator Garden Survey event as part of Pollinator Week. It invited the campus community to visit campus

pollinator spaces and upload the pollinator species and plants they observed. Several student groups also hosted events. The NC State SOL garden, our student-led sustainable community garden, hosted workshops and meetings. These included beginner plant propagation workshops and education on sustainable gardening practices. The NC State Agroecology Club teaches members about sustainable food systems and often includes pollinator education in their efforts. They volunteer at the campus Agroecology Education Farm to achieve sustainable agriculture practices that attract pollinators and provide habitat. The NC State Beekeepers Club hosted events educating members about Honey Bees and the important roles pollinators play while providing hands-on experience tending to beehives. Also, NC State University hosted an annual day-long Pollinator Field Day at one of the collaborative NC State University and NCDA research farms, educating 100-125 attendees about pollinator habitat management and local pollinators. Pollinator education was also included in the NC State sustainability blog, social media and weekly e-newsletter. Articles include interviews with faculty who have pollinator expertise:

<https://sustainability.ncsu.edu/blog/2023/06/28/pollinator-gardens-and-you/> and

<https://sustainability.ncsu.edu/blog/2023/06/28/meet-pollinators-that-flap-creep-or-scurry/>.

How many pollinator-related events or outreach activities did you host or help with in 2023 (in total)?

7

How many people attended those events (in total)?

600

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

11

Number of temporary interpretive/educational/Bee Campus USA signs installed in 2023?

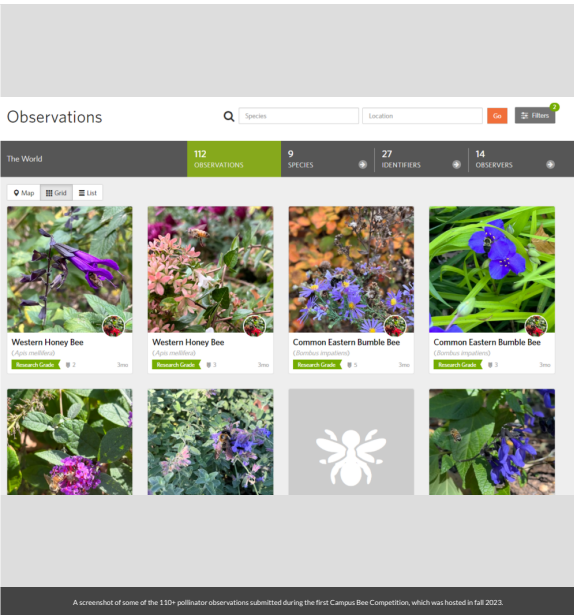
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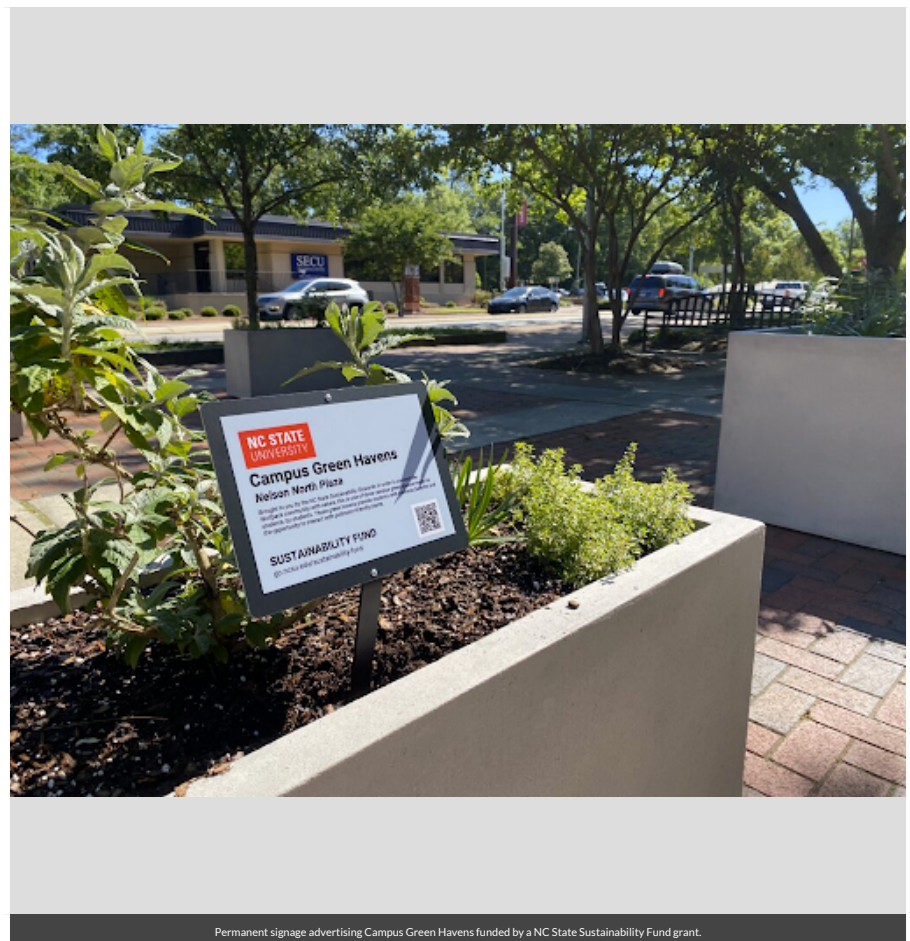
The Landscape Services table at NCSU Earth Fair 2023 featured information on native bees and pollination, along with bee campus handouts.



A student volunteer at the NC State Agroecology Education Farm posing with an educational sign explaining the implementation of a shrub layer to protect fruit and attract beneficial insects.



A screenshot of some of the 110+ pollinator observations submitted during the first Campus Bee Competition, which was hosted in fall 2023.



Permanent signage advertising Campus Green Havens funded by a NC State Sustainability Fund grant.



Signage explaining our commitment to creating pollinator resources by participating in "No Mow May".

Curriculum, Continuing Education, & Service Learning

Please describe the curriculum your campus engaged in 2023, 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 2023?

12

How many students attended those for-credit courses?

970

How many of your continuing education courses included pollinator-related information in 2023?

25

How many participants attended those courses?

525

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

5

How many students participated in service-learning projects in 2023 to enhance pollinator habitat on or off-campus?

40

Please describe the service-learning projects your students were engaged in 2023, indicating which, if any, were associated with a course.

The Bee Campus USA Committee on campus hosted a student internship for the academic year. This student is supporting current and future pollinator habitats on campus through hand-on maintenance of preexisting pollinator spaces and by providing recommendations for additional habitats. Additionally, three student internships were created to support a ground-nesting bee project on campus. Students designed and implemented a small space design to preserve the breeding habitat of a large colony of native, ground-nesting bees on campus. The Bee Campus USA Committee also hosted a “NC State Pollinator Meadow Education and Volunteer Opportunity” in which over 20 volunteers helped weed, plant, and compost in a campus pollinator habitat while learning about pollinators. Also, the

campus SOL garden hosted multiple work days every month during the academic year.



Instructor and AEC 203 students at the annual swarm demonstration directly experiencing the reproductive biology of honey bees.



AEC 460 Field Ecology and Methods students measuring the amount of floral resources in an NC State managed forest that recently had a controlled burn to discuss pollinator habitat availability.



Community workday participants at the NC State SOL garden.



Volunteers helping enhance a pollinator garden at a service event in March 2023.



Bee Campus USA Committee hosted its first student internship. Ben Rooney led multiple efforts to expand pollinator education and health on campus, including obtaining grant funding for the creation of a Piedmont Prairie on campus (pictured here on the right before planting, which is scheduled for April 2024).

Policies & Practices

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

NC State Landscape Services has implemented or maintained a written IPM plan, as well as 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). We have both reduced the total area of city or campus-managed lands to which pesticides are applied and restricted pesticides used to organic pesticides on city or campus grounds. By implementing non-chemical pest prevention and management methods on city or campus grounds, we have helped eliminate pesticide uses that are solely to maintain aesthetics on city or campus grounds.

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

Landscape Services has pushed to have less chemical use for weed removal and focus more on hand removal of weeds and invasive species. We have made new pollinator beds chemical free by using the compost as well as only removing weeds by hand. Related to fertilizer use, Landscape Services has implemented the use of compost heavily within the landscape. We have utilized it as a natural fertilizer for annual and newly installed perennial beds. We are moving away from the use of pine fines, pine nuggets, and mulch in these beds using the compost as a top dressing to add nutrients to existing soil.

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

Landscape Maintenance and Operations' Horticulture Crew supervisor attended an IPM Practices seminar by the Perennial Plant Association in January 2024 and is developing a department-wide IPM plan. The Horticulture Crew already avoids pesticides altogether.

Please check actions you have taken to make pest management practices more pollinator-friendly.

- 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)

Any lessons learned you would like to share?

The NC State Compost Facility and Research Cooperative creates compost from on-campus waste. The compost is used in campus landscapes. We have dedicated a space to always have compost on hand. With it being easily accessible we are able to get annual beds and newly planted perennial beds set with compost as soon as they are planted.



The NC State Compost Facility and Research Cooperative creates compost from on-campus waste. The compost is used in campus landscapes.

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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