



Bee Campus USA Annual Report for 2018 Pollinator Conservation & Education



**Warren Wilson College
Swannanoa, North Carolina**

EDUCATION & OUTREACH



Warren Wilson College was certified as a Bee Campus USA affiliate in April 2017. Here are our activities for 2018.

Sugar shake (Sept 7, WWC Bee Crew/Committee, 4 students) Students went into the hives on campus to do a sugar shake which is a method to account for varroa mite populations. By doing so and keeping track of infestation, we are working to preserve the health of honey bees.

Bee Hotel Workshop: (Nov 8, WWC Bee Crew/Committee, 20 students) Students gathered at the garden to build solitary bee boxes using fallen bamboo from campus and scrap wood. While building the boxes we talked about the importance of solitary bees and how to preserve their habitat/build new habitat.

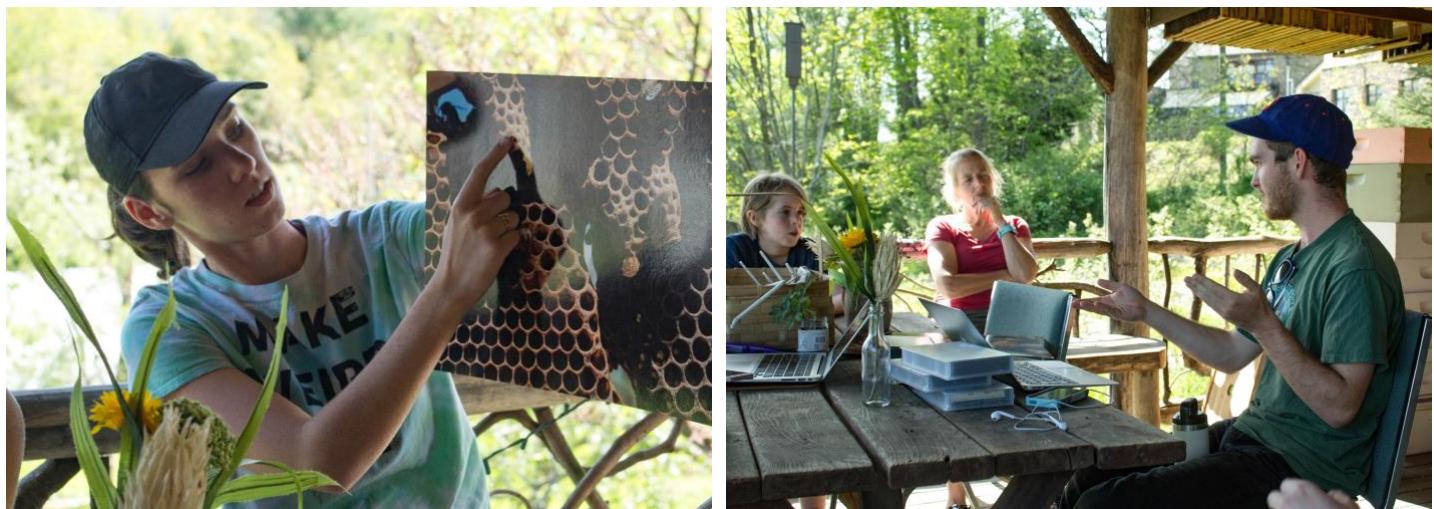
Phenology Trail Monitoring (multi week observations in the spring, 25 students, WWC committee member-run) engaging undergraduate students in research about flowers and the factors that determine flowering time. One hope is to bring pollinator surveys into this work in coming years.

The broader Asheville community has too many events to even list. This city along with The NC Arboretum, UNC Asheville and WWC are all designated Bee City/Bee Campuses.

WWC Bee Crew put on an educational workshop called “The Magical World of Bees” to teach the community about bee biology and resource management related to honeybees. Bee Crew also put on a workshop for building solitary bee boxes while answering questions and providing a space to talk about pollinators other

than the honeybee. We are lucky to have such an interconnected community on campus where education, work and community engagement are all intertwined in academics. We bring education to the campus by having class tours come to the garden to observe the ecological practices involved in growing on this land. Part of those tours always involve a detour to the apiary where we stress the value of honeybees and other pollinators alike for the success and sustainability of our operation. Furthermore, the bee crew has a mentor, Joseph Salvatore, who comes to the WWC campus to continue education for the members of the bee crew. Having him is an invaluable resource that allows the students to continue to spread awareness and education surrounding bees to their peers.

We have a Bee School scheduled in February, held on WWC campus, that is open to members of Bee Crew and the greater community. Having the classes meet on campus will allow for the campus community to create ties with the broader beekeeping community and create a space for diversifying our knowledge and resource base. We plan on diversifying our outreach goals as we gain more knowledge and create more opportunity for collaboration with our educators.



POLLINATOR HEALTH & HABITAT

Warren Wilson College is notable for its surrounding environment. The campus includes a 275-acre (1.11 km²) working [farm](#), [market garden](#), and 625 acres (2.53 km²) of managed forest with 25 miles (40 km) of hiking trails.

One of the core values at Warren Wilson College is preservation of habitat and conscious cooperation with the environment. WWC is recognized as a National Wildlife Federation Certified Wildlife Habitat, a North Carolina Native Plant Sanctuary, and a certified Monarch Butterfly Waystation. As a work college we have amazing crews who deeply care for pollinator health. The Landscaping crew takes on the planting and maintenance of a plethora of native plant species. Along with all the Landscaping Crew does, the Garden Crew makes sure to provide habitat in many ways. We have a specified “pollinator garden” where a diversity of flowering plants are grown to ensure there is something blooming almost year round. The crew supervisor, Ben Mackie, is extremely mindful of creating resources for the bees. The cover crops used within our crop rotations are chosen both for their regenerative properties pertaining to soil health and for their pollinator attracting properties (vetch, clover, sunn hemp, barley, alfalfa, buckwheat).

Here are some of our habitat accomplishments for 2018.

Building Bat Boxes: April 4th, 20 students volunteered to build and raise multiple bat boxes around campus to support local bat populations, even though east coast bats are not known to be pollinators.

Stream Mitigation Project: year-long project 2018, 40 students from the landscaping crew worked on planting native wetland plants in a pond that was converted for restoration purposes

Bioretention Project: year-long project in 2018 that involved creating a rain catchment area to re-channel storm water. Native aquatic flowering plants were seeded

POLICIES & PRACTICES

Alisa Hove: Runs WWC Phenology Stewardship Program, which incorporates work around native pollinators.

Mary Bulan: Teaches classes including: Soil Science, Agroecology, Sustainable Farm Management, and includes lessons related to pollinators.

Joseph Salvatore: WWC Bee Crew's unofficial mentor. Joseph assists us with hive inspections and recently incorporated the crew into his queen-rearing operation on Jones Mountain, which is adjacent to WWC's campus.



Benjamin Mackie: Manager of WWC's garden crew, which includes the Bee Crew, and is responsible for planting and maintaining pollinator-friendly species in and around the garden area.

John Odell: Manager of WWC's Landscaping crew, which takes on the planting and maintenance for a plethora of native plant species.

WWC Bee Crew: Currently managing three honeybee hives. Bee Crew is also responsible for pollinator-related outreach and education within and beyond the Warren Wilson community.

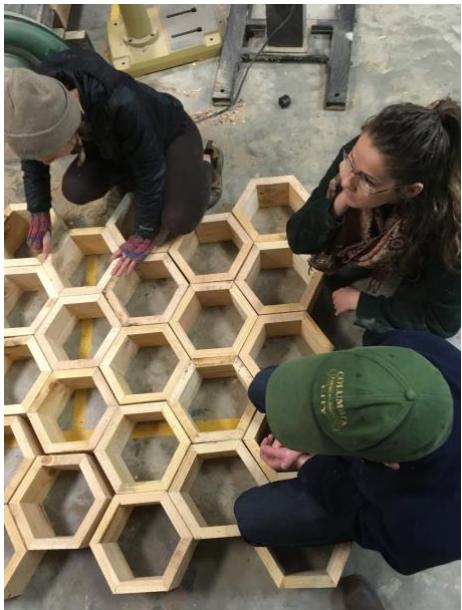
Individually, each member is committed to pollinator health and well-being, integrating it into teaching their crews and classes to educate many students. The Bee Crew is made up of four students who work on the garden and specialize in tending to the campus' apiary. They are also promoting pollinator health directly and promoting education to other garden workers. They meet at least once a week to discuss health and plans for the apiary and public education and do additional work consistently throughout the week tending to the hives or program planning. They keep records of the status of the hive and plans and there are years of records from past members of the crew. They harvest honey and sell it to the community as well as other products such as propolis salves and beeswax candles.

Recommended Locally Native Plant Species List– <https://www.ashevillegreenworks.org/native-pollinator-plants-and-nurseries.html>

Regional Native Plant Suppliers List– <https://www.ashevillegreenworks.org/native-pollinator-plants-and-nurseries.html>, <https://sowtrueseed.com>, <https://www.southernexposure.com>

Pollinator-Friendly Integrated Pest Management Plan– To be developed

SERVICE-LEARNING



WWC is known for its curriculum that combines academics, work, and service. This system, called "the Triad," requires every student to complete a requisite course of study, work an on-campus job, and perform community service. Warren Wilson is one of the few colleges in the United States that requires students to work for the institution in order to graduate and is one of only seven colleges in the Work Colleges Consortium.

See "Education & Outreach" section above.

CURRICULUM

We only received a full report from Professor Alisa Hove, although Professor Mary Bulan also includes lessons about pollinators in her Soil Science, Agroecology, and Sustainable Farm Management courses.

From Professor Alisa Hove:

WWC has a phenology research program called the WWC Phenology Stewardship Program. We are monitoring the timing of flowering, leaf emergence and fall color change in approximately 30 species of native trees, shrubs, and herbaceous plants. This has implications for our understanding of how the availability of flowers that are important in the life cycles and honey bees and wild pollinators may change over the course of the season. This work has been done through:

- a National Science Foundation funded research program called the CEREUS project (Consortium Exchanging Research Experiences for Undergraduate Students). This has occurred through paid summer internships in Summer 2018 and on the Genetics Research Crew
- phenological monitoring by students in Biology 202 (Ecology)
- working with a community partner (the Art and Science in the Field Center) to establish a phenology monitoring trail in Biology 342 (Plant Physiology)

We are engaging undergraduate students in research about flowers and the factors that determine flowering time. One hope is to bring pollinator surveys into this work in coming years.

EDUCATIONAL SIGNAGE





We did not install any signage last year related to pollinators, but plan to in the future, especially as we get our pollinator gardens established in spring 2019 in cooperation with the landscaping crew.

In addition to being a certified Bee Campus USA, we are proud to host a Monarch Waystation, and to be certified as Wildlife Habitat by the National Wildlife Federation and Native Plant Habitat by the NC Native Plant Society.

CONTACT US!

Committee: Warren Wilson College Bee Campus USA Committee, beecrew@warren-wilson.edu

Social Media: <https://www.instagram.com/wwcbeecrew/>