

Sustainability September: Pollination Hoop House

This fall, if you're looking for a lovely place to visit while you are at Duke Farms, consider heading to the Pollination Hoop House. The Hoop House is a demonstration garden filled with pollinator-friendly flowers, located next to the Orchid Range, just off Central Way. From early spring through autumn frost, something is always in bloom here. Fall is a fabulous time to see bees, birds and butterflies feasting on nectar, pollen, and seeds before their food resources dwindle. It's also a great time to get ideas for native plants to incorporate in your own perennial garden for fall color. The season doesn't just have to be about potted mums on the porch; you can grow native!



Hoop house entrance

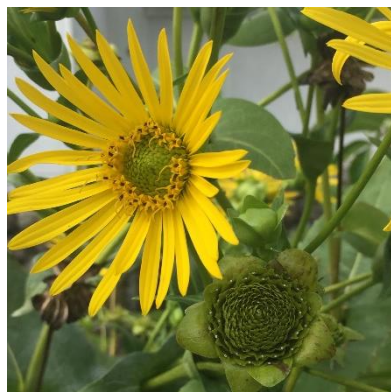
As you enter through the central door, you'll see there is a garden path that winds to the right. Follow this path and you'll be amazed at all the flowers still in bloom along it. Here are some highlights of the beauties you'll encounter.



Elephant's foot

Just inside the center door entrance, look down to your right and you'll see a very special plant called elephant's foot (*Elephantopus carolinianus*). Elephant's foot is an endangered species in New Jersey. It grows easily from seed and can tolerate hot, dry conditions; think great plant for a climate change mitigation garden.

As you scan the garden, you can't miss the yellow bloomer that stands tall above all the others. Though it looks like a sunflower, this is the cup plant (*Silphium perfoliatum*). The leaves are very large, up to 10 inches long and 6 inches wide. The opposite pairs are joined together at the stem, forming a cup (hence the name). The cup fills with water when it rains and makes a little bird bath for visiting hummingbirds and goldfinches.



Cup plant

Strolling along the path you soon come to a clump of white flowers that resemble the heads of turtles. These are, you guessed it, turtlehead. When bumblebees visit, they crawl inside the "mouths" of the turtles and make them look like they are talking. You can learn a more about fascinating turtleheads [here](#).

As you make the turn to loop along the back wall of the hoop house, there are two patches of tubular flowers that pollinators also love. Look for the blue lobelia (*Lobelia syphilitica*) and its cousin, the



Turtlehead

cardinal flower (*Lobelia cardinalis*). The blue is a bumblebee favorite and the red is a hummingbird magnet. Both beauties bloom from late summer through fall and no garden should be without them. Learn more about Lobelia [here](#).

These are just a few examples of the floral diversity in the Hoop House. Continue to follow the path through this beautiful wildflower garden and discover all the other lovely surprises that await. Just follow the buzzing bees and enjoy!



Vervain



Cardinal flower and blue lobelia



New England aster



Thoroughwort



Goldenrod



Ironweed

Activities You Can Do in the Hoop House

Once you are inside the Pollinator Hoop House, walk the path and see how many of the plants shown in this article you can find.

Observe the plants. See which ones have pollinators collecting nectar and honey. What kind of pollinators do you see? Honeybees?

Butterflies? Moths? Beetles? Hummingbirds? Record your findings. Which flower has the most pollinators? Bumblebees work as a team, usually collecting nectar and pollen from one floral species at a time. Do you see Bumblebees? Can you identify the plant they are working?

If not, then consider downloading the mobile app called [iNaturalist](#). iNaturalist is a National Geographic sponsored identification and observation tool. iNaturalist allows you to take a photo and submit it to the app and it will provide likely possibilities of what you are observing. For instance, if you take a photo of the turtlehead flower, the app will show you photos of what the plant is likely to be.

Turtlehead is the first choice they provide. It's very useful, very cool and you can share your observations with others.

If you want to avoid the technology, then bring a pad and pencil on your stroll and begin a nature [journal](#). If you are a regular visitor to Duke Farms, visit the Hoop House on every visit and keep a record of your observations.

Climate Change

Gardens with native plants are sustainable. They are adapted to their local soils, water, weather, and climate so they need less maintenance than plants introduced from other parts of the world. Native plants in our landscapes provide numerous benefits in this time of rapid climate change including heat and drought resilience, water conservation, soil conservation, pest resistance, and ecosystem sustainability. But perhaps the most critical function of native plants is maintaining diverse habitats for wildlife. If you want to make a sustainable native garden in your own yard then a good place to start is to read the Duke Farms Distance Learning Portal article on how to make a [butterfly](#) garden and start planning one for next year. The Hoop House can be a major inspiration in such an endeavor.

Want to grow native flowers in your garden? Buy plants from native nurseries and **never collect them from the wild!** [The Native Plant Society of New Jersey](#) is a great resource to help you find where to buy them or to get more information.

Urban Gardens are for Native Plants, Too

Many people believe that you need an enormous yard to grow native plants, and that is not true! City gardeners can easily establish a wide assortment of native plants while using small spaces. This city gardener filled her tiny area between a front porch and the sidewalk with elephant foot and blue



Obedient plant



Inside the Hoop House

mistflower. Both plants tend to “expand their territory”, but here the sidewalks create a nicely contained area and it’s a paradise for city dwelling pollinators. These plants have certainly not been “tended” and have been yet to be bothered by adjacent pedestrian and car traffic, imperfect water conditions, deficits in the soil, and harsh baking summer sun. By using the Pollinator Hoop House as a guide, you may get some ideas for your city space. As an added benefit...no grass = no mowing!

Additional Resources

- [Learn more about pollinators, meadows and native plants](#)
- [Learn more about the flowers in this post](#)
- [Duke Farms Habitats](#)



Photo source: K. Reilly

To Extend Your Learning

The Pollinator Hoop House is a great place to get up close and personal to plants that you may see growing naturally in a meadow. For example, some goldenrod may look like this out in the meadow, but you can see the intricate details when you have it in your hand. Using simple magnifying lenses or just the features on your phone will help you discover the small wonders.



Meadow at Duke Farms



Photo source: Farmville Herald



Learning about the Duke Farms Pollination Hoop House aligns with the newly-adopted NJ Student Learning Standards and Next Generation Science Standards.

Adopted 2020 New Jersey Student Learning Standards (NJSLS)

Climate Change

New Jersey is the first state in the country to require climate change curriculum across all content areas and at a K-12 level. As stated by the NJDOE:

On June 3, 2020, the State Board of Education adopted the 2020 NJSLS in the following content areas:

- Career Readiness, Life Literacies, and Key Skills;
- Comprehensive Health and Physical Education;
- Computer Science & Design Thinking;
- Science;
- Social Studies;
- Visual and Performing Arts;
- and World Languages.

These standards truly represent a foundation from which districts will build coherent curriculum and instruction that prepares each New Jersey student with the knowledge and skills to succeed in our rapidly changing world. They will put New Jersey again at the forefront of national education by including the following:

- Climate Change across all content areas, leveraging the passion students have shown for this critical issue and providing them opportunities to develop a deep understanding of the science behind the changes and to explore the solutions our world desperately needs.

For more information about NGSS, Climate Change Curriculum or how you can use the Pollination Hoop House with your class or for a family adventure, contact Kate Reilly, Manager of Education at kreilly@dukefarms.org.