

# Berlin, Maryland



Dr. Surak's Senior Seminar Class, Fall 2018

A Pollinator Friendly Place!

# Berlin Falls Park and Bee Populations



[https://m.youtube.com/watch?v=\\_hNJGy-rK2I](https://m.youtube.com/watch?v=_hNJGy-rK2I)

# Social Media Cache

Make Post | Photo/Video Album | Live Video



Hello! I'm a busy honey bee! I'm just doing my job of pollinating the world and producing some sweet honey! I don't mind sharing my product, as long as you do your part of protecting me, my habitat and other pollinators! Help decrease the decline in my population from 44% in the U.S. to an even lower percentage!



+

Poll | Photo/Video | Tag Friends | ...

Make Post | Photo/Video Album | Live Video



Did you know that not all bees live in colonies? Solitary bees, like the Mason Bee (*Osmia lignaria*), are a type of bee that makes their homes in reeds or natural holes and are better pollinators than honey bees. Help these non-aggressive, non-swarming bees by making a bee home to put in your home garden!



+

1

# Pollinator Gardens In Berlin Falls Park



## D.I.Y Home Pollinator Garden



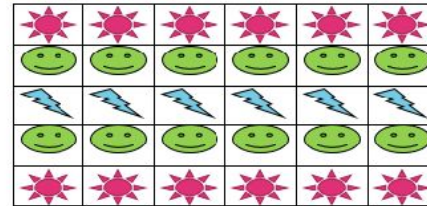
### Why?

Whether a pollinator garden seems adventurous or daunting, it is a very easy project to help support local pollinators and other animals. The gardens are typically: aesthetically appealing and easy to maintain. With pollinator gardens declining worldwide, it is important for you to do your part and build your own today! Giving these lovely creatures a place to nest and feed will help support and sustain pollinator populations.

### Benefits:

A simple native flower garden will attract butterflies, bees, bats, hummingbirds, and many other local critters. An estimate 75% to 95% of all flowering plants depend on pollinators. Supporting pollinator populations helps support healthy ecosystems, clean the air, support other wildlife, and stabilizes soil. Did you know that one out of every three bites of food you take is because of the work of these pollinators? Pollinators are responsible for adding 217 billion dollars to the global economy. Honey bees are responsible for adding between 1.2 and 5.4 billion dollars to the United States economy alone!

### Example Layout:



6-8 inches in plant height

2-3ft in plant height

4-6ft in plant height

### Materials needed:

Pressure treated lumber (for raised bed), soil, hand cultivator (if planting in ground), & plants.

### Possible Native Plants:

Goldenrod, Firepink, Veronicas, Butterfly weed ... plenty of options! Ask local nursery!

### Care for Plants:

Make sure plants have not been treated with any pesticides, pesticides will kill the pollinators. If plants are native, they will be easy to maintain! If planting in raised beds put extra soil around the plants. Do not use mulch. Weeds in your garden will help naturally fight off potential pests.

### Location:

Sunny area with some potential wind protection. Provide sticks for pollinators to rest on garden floor.

### Recommended Size for

Raised Beds: 5ft in width and 8ft in length. Length can be adjusted. Beds should be at least 1-3ft deep. You will need 1-3 yards of soil.

# Berlin Falls Park Pollinator Garden Proposal



# Bee City Educational Material



**Queen**

There is only one queen honey bee in each hive. She is the only female that lays eggs and lays about 2,000 every day.

**Worker**

The worker honey bees are the female bees that feed honey to the baby bees (larvae). They leave the hive and move from flower to flower collecting nectar that the hive needs for survival. The worker bee is the busiest bee there is. They gather and store food nonstop until they die.

**Drone**

Drone honey bees are important to the success of the colony. These bees are the male bees. Their job is to mate with the queen bee so the colony can continue to grow and become stronger. They do not leave the hive until they die.

**Importance**

What is all the BUZZ about? Honey bees play a key role in ecosystem health. As they travel from flower to flower collecting nectar, they simultaneously transfer pollen. This transfer fertilizes the plants! Every 1 in 3 bites of the food we eat are pollinated from bees. Without pollinator animals, most of the fruits and vegetables you eat, would not exist.

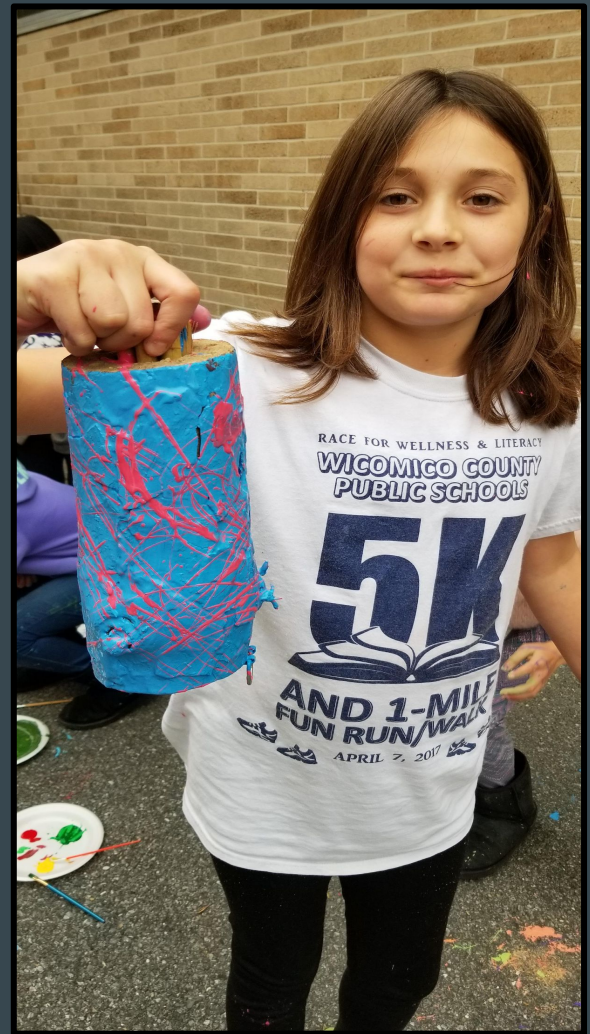
Although there are many types of pollinators, honey bee health is vital to plants, animals and us. YOU can make a difference in your community by understanding the importance of Honey Bees.

[www.BeeCityUSA.com](http://www.BeeCityUSA.com)



The Town of Berlin  
Honey Bees  
Bee City USA

# Bee Boxes in Berlin Falls Park



# Berlin Falls Park Educational Signage

## Meet the Pollinators

**House Fly**

Pollinators are essential components of ecosystems. One in every three bites of food relies on pollination. It is vital that every community understands how to keep pollinators healthy.

**Hummingbird**

Pollinators include honey bees and butterflies that travel from flower to flower, collecting nectar and simultaneously transferring pollen.

**Bat**

Pollination leads to fertilization which is when the plant produces seeds for reproduction. Most plants rely on pollinators to initiate the transfer of pollen.

**Butterfly**

Pollination happens when the pollen from one species of plant, travels to another plant of the same species.

**Beetle**

**Flower Parts**

- Corolla
- Petal
- Stamen: Anther, Filament
- Pistil: Stigma, Style, Ovary
- Sepals
- Calyx

## Pollinators in Peril

Pollinated plants are necessary for food production, preventing erosion, as well as provide one-half of the world's oils, fibers, and raw materials. Pollinator plant species also are responsible for carbon sequestration, which is the process that removes carbon dioxide from the atmosphere and locks it in the solid form of plants.

In recent years pollinators have experienced a rapid decline in population. This decline is attributed to the loss of native habitats, pollution, misuse of chemicals, disease, and changes in climatic patterns. We have pollinators to thank for every 1 in 3 bites of food we take.

Pollinators are responsible for pollinating 90% of wild plants and tree species, and they are responsible for 75% of overall plant pollination. Without pollinators, many of our everyday foods would no longer be available.

We can help honey bees thrive by planting native pollinator gardens and converting towns and cities to pollinator friendly places through programming encouraged by Bee City USA.

## Pollinator Homes

A pollinator garden is an area that promotes pollinator health. Within a garden, plants like goldenrod, firepink, veronica, and butterfly weed support honey bees by providing nectar in the flowers that the bees take to their hive. Honey bee hives need this nectar because they use it to make honey to eat!

**Butterflyweed**

**Golden Rod**

**Bee box frame**

Other structures like bee boxes are perfect for honey bees to stay healthy and make new colonies. Bee boxes include, but are not limited to, frame hives, top-bar hives, and Warré hives.

Throughout the garden you will notice bee boxes constructed by Sablary University students and decorated by students attending local elementary schools. Each hole drilled into the boxes provides a safe place for a solitary bee to lay their eggs.



# A Special Thank You to...

Berlin Town Administrator, Laura Allen

Berlin Water Resource Administrator, Jane Kreiter

Berlin Project Coordinator, David Deutsch

Berlin Falls Park Committee and Jack Orris

Berlin Intermediate School

Lower Shore Land Trust Volunteer, Joe Leib

Executive Director of Lower Shore Land Trust, Kate Patton

Berlin Town Council Member, Dean Burrell

Dr. James Hatley, Emeritus Professor Salisbury University

Professor Seth and Art 495 Design Agency, Salisbury University