

What's happening in the meadow at Barkingfield Park?

Restoration work is in progress in the lower meadow area to simultaneously

- Improve rain water management on-site using contour swales
- Enhance the meadow environment

Why is rain water management important?

- Reduce flooding
- Prevent erosion
- Increase groundwater supply
- Improve stream water quality

The increased heavy rainfalls in our area are a major concern for flooding. When all the rain that falls on a site is not absorbed into the ground, the rainwater, also called stormwater, runs off quickly across the landscape into streams and neighboring properties and flooding occurs. Properties can be damaged and both water quality and quantity are impacted. If rainwater flows off site, across the land, and is not infiltrated back into the ground as healthy ecosystems work, critical ground water supplies do not get replenished. When groundwater levels drop, this becomes a concern to Kennett Township where over 70% of our residence draw drinking water from groundwater supplies. As stormwater travels across the landscape it picks up pollutants such as fertilizers, pesticides, road salts and oils, animal waste and soil. The desired state is to have all rainwater that falls on a site, stay on that site and ultimately seep back into the ground. That way flooding and erosion are minimized and our drinking water supply and streams are protected.

What is the contour swale project at Barkingfield?

- Swales will be cut following the contours of the land, level with the grade with no outflow designed in
- Swales on contours catch the rainwater and hold it in place allowing it to be absorbed back into the ground.
- Level swales reduce rain water runoff and the quantity of rainwater that contributes to flooding.

Local landscape architect Margot Taylor, whose home property in Kennett is a model for sustainable landscaping practices, proposed this project. Taylor's property demonstrates similar rainwater management systems across her site and effectively manages a 5" rain event. Impassioned to help Kennett and educate others she is generously donating her time and expertise to lead the design and implementation of the Countour Swale Project at Barkingfield Park. This project will benefit the site and serve as a demonstration of how easy this can be for others to do similar projects on their own properties. Three countour swales will be constructed and foot trails realigned and integrated. Contour swales effectively stop the flow of sheet rainwater runoff, capture it, hold it, and ultimately get the rainwater back into the ground!

What is the meadow improvement project at Barkingfield?

- Current meadow is dominated by dogbane and non-native grasses.
- Dogbane is native but is highly aggressive and of limited pollinator value
- Existing vegetation to be killed back with two treatments of herbicide
- Reseeding with diverse deer-resistant native pollinator mix will be done in late fall
- Seeds will start to sprout in the spring, but full establishment of the meadow will take 2-3 years.

The original park plan for Barkingfield Park included a large sunflower plot along with butterfly and pollinator garden areas. The sunflowers were planted, but were quickly eaten by deer. The subsequent growth has been managed by mowing schedule, but has become dominated by non-native cool season grasses and dogbane. While dogbane is a native flowering plant, it spreads very aggressively so the meadow has very limited diversity and the pollinator value of dogbane alone is fairly low. The desire is to establish a meadow with a larger diversity of plants with blooms across the seasons from spring into late fall. This diversity benefits our native butterflies and pollinators and provides a more attractive meadow for the enjoyment of residents and visitors.

The existing vegetation needs to be killed back in order to establish a more diverse population. The existing meadow will be treated with herbicide in late June and again in the early fall. The meadow will then be seeded in late fall and growth of the new plants will start next spring. It is expected that any new seeding will take 2-3 years to fully establish, so while there will be growth next spring it will mostly be directed to establishing the new plants and growing deep roots. We will have to mow to keep weed growth down so there will be few blooms. But the beauty of the new meadow will start to emerge more fully the following spring.

Will the herbicide use hurt insects, birds, and other wildlife?

- Herbicides are designed to kill plants, not insects or mammals.
- Pollinators are harmed by widespread herbicide use due to loss of host plants for breeding such as often occurs in large agricultural use.
- Herbicide use at Barkingfield will be limited use for meadow establishment
- Pollinator host plant populations will be increased, not eliminated!

Insect populations can be hurt by over use of herbicides when the plants that they depend on for food are eradicated. An example of this is the nationwide loss of milkweed habitat that has endangered the Monarch butterflies. While the butterfly is not directly harmed by the herbicide, the widespread use of herbicide to kill native plants including milkweed and replacement with planted crops has resulted in loss of breeding sites and food supply for their caterpillars has caused a dramatic decline in their numbers.

At Barkingfield Park, herbicide will be used for two applications for the initial establishment of a replacement meadow with much higher pollinator value than the existing habitat and then herbicide will be used on a very limited basis to maintain that habitat. The benefits to our native pollinators, birds, and other wildlife will greatly outweigh the short-term loss of the current habitat.

This photo of a diverse pollinator meadow in Laurel Delaware is an example of the types of plants that will be seeded at Barkingfield meadow.



Photo: University of Delaware Extension, Sue Barton.

<https://sites.udel.edu/suebarton/2018/07/10/more-meadows-2/>