



Native Plant Society of Northeastern Ohio
Spring Ephemerals & Their Response to Climate Change
Field Trip



12 April 2015

Greetings Everyone,

At our 2014 annual meeting, Anna Osvaldsson, who was one of two grant awardees for 2014, presented an overview of her research project. Anna is a graduate student at Case Western Reserve University. Her project focuses on native spring ephemerals and their response to climate change. It was a beautiful day to catch up with Anna and her advisor Jean Burns to learn how her research was progressing and to see her research project in person at Case Western Reserve University's Squire Valleevue Farm. Judy Barnhart's narrative provides an excellent overview of our visit.

It was a delight to get another chance to visit with Anna. The Native Plant Society wishes her much success in her chosen field of study as well as all areas of her life.

Please visit [our website](#) to learn more about native plants, our society, upcoming programs and field trips, and other resources that can help you with your curiosity and your quest to learn about our natural world.

Sincerely,

Lisa K. Schlag

Native Plant Society of Northeastern Ohio

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On a beautiful spring morning, eighteen people turned out to hear about graduate student Anna Osvaldsson's climate change project on the influence of changing winter snow cover on spring ephemeral plants. Anna, who received one of the \$500 grants last fall at the Native Plant Society of Northeastern Ohio's annual meeting at the Pine Lake Trout Club, is a graduate student of Professor Jean Burns. In addition to Anna's project, other student projects were also visible in the old community garden. Additional projects underway are looking at how interactions between invasive garlic mustard and the invasive earthworm, *Lumbricus terrestris*, affect the growth of mayapple and how light pollution affects amphibian development.



Anna's project contained 320 plots arranged in 12 rows separated by weed cloth. This was the first year of her three-year project. With plenty of snow fall this past winter, Anna spent the winter removing snow from a quarter of the plots and at the end of winter she removed snow from half of the plots and added snow to a quarter of plants, thus simulating different climate scenarios. Each plot contained one of the 20 spring ephemeral species including: trilliums, toothworts, violets, wild geranium, rue anemone, trout lily, mayapple, bloodroot, jack-in-the-pulpit, and blue cohosh with each species in every row and each row corresponding to a snow treatment.

Approximately 75% of the flowers were taken from large populations located in the woods surrounding the CWRU farm property. The remaining flowers came from the Prairie Moon Nursery as either bareroots or seeds.



Half of the plots contained bags of seeds that were overwintered in each snow treatment. These bags will later be transferred into growth chambers to check for germination. The group spent a while searching the plots for signs of emerging seedlings which were few in numbers due to the late spring.



In the near future leaf litter and shade cloth will be added to simulate forest conditions. Being a former community garden, weedy species will need to be removed.



Each row contained a soil temperature probe. These probes recorded the temperature every 30 minutes throughout the winter to track freeze-thaw events in the soil. Anna used her grant award to purchase the soil temperature probes.

With few species visibly up in the plots, the group headed into the woods with Dr. Jean Burns to look for wildflowers. Jean took us to a knoll covered with wild leek where hepatica, rue anemone, bloodroot, spring beauty, blue cohosh, and trillium were blooming.

Judy Barnhart