

## ParkLands Foundation

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[www.parklandsfoundation.org](http://www.parklandsfoundation.org)



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## Newsletter April -May 2013

# Take a Hike In the Woods See Wildflowers

A series of wildflowers that appear in late March and April truly heralds the spring to those who enjoy our central Illinois woodlands. First, hepaticas and snow trilliums grace rich, northern slopes. After this, an increasing array of species provides a colorful spectacle until early May. Then, the forest trees' dense shade causes these plants to enter dormancy until the following spring.

Because these species must complete their life cycle in a relatively brief period (they require full sun) they are referred to as spring ephemerals (what, expectant naturalists, does the term mean?) Ephemerals often possess interesting adaptations to this life style. They may include fleshy roots to store energy throughout the long dormancy, and flowers that mature even before the leaves appear.

Sex before food!

Our walk will begin on the uplands along the south side of the Mackinaw River where several species are at home. Then it's a descent to the flood plain to find species that prefer different habitats. On the edge of the river bottom is a "seep", an area where water drains from the adjacent upland and provides a year-round moist habitat. Here, several species that require wet

feet can be found. Our goal in this area is a stand of marsh marigolds (*Caltha palustris*) that we hope are in full bloom.

The walk will take one and a half to two hours. Come prepared to enjoy some moist underfoot, but nothing strenuous.

*Dale Birkenholz*

### 2013 SPRING WILDFLOWER WALKS

**Sunday, April 21,  
1:00 p. m.**  
Meet at the Merwin Preserve  
South Gate

**Sunday, May 12  
1:00 p. m.**  
Merwin West Gate



*Jack-In-The-Pulpit Meeker Photo*

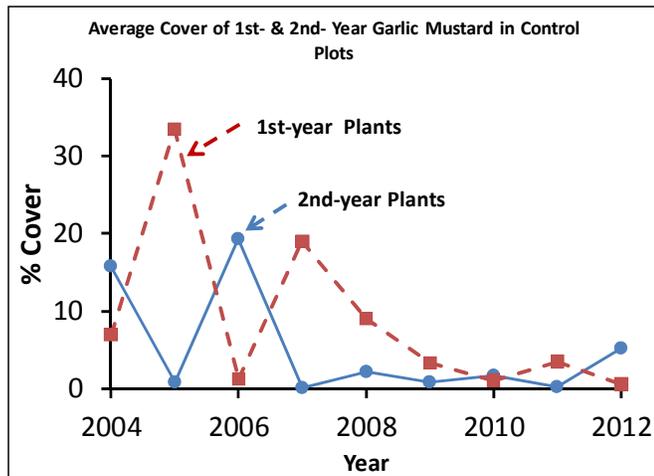
# What is The Best Way To Get Rid of Garlic Mustard?

In 1988, we first noticed garlic mustard in the ParkLands Merwin Preserve. We were surprised at how rapidly it colonized extensive areas within the preserve and seemingly eliminated extensive areas of native herbaceous understory plants. In 2004, we established an experiment in the Merwin Preserve to determine how removing second-year garlic mustard plants would affect the growth of native plant species. It is a large experiment with 240 study plots each 2.5 x 2.5 meters, from which we annually remove second-year garlic mustard, before it can produce and release seeds, from 80 plots each in April and May.

We also have control plots where we do not pull the garlic mustard. In the middle of each 'big plot' there is a permanently marked 50 x 50 centimeter plot in which we estimate cover of first- and second-year garlic mustard and native plants by species and count the number of garlic mustard plants.

We expected it would take several years to eliminate garlic mustard from our removal plots. What we found was that in our removal plots garlic mustard declined in abundance and by 2006 there was substantially less garlic mustard in the removal than control plots. However, what surprised us was that garlic mustard also declined in the control plots.

In the graph below, the alternating abundance of first- and second-year garlic mustard in the control plots is shown, as well as sharp declines in second- and first-year garlic mustard after 2007 and 2008, respectively.



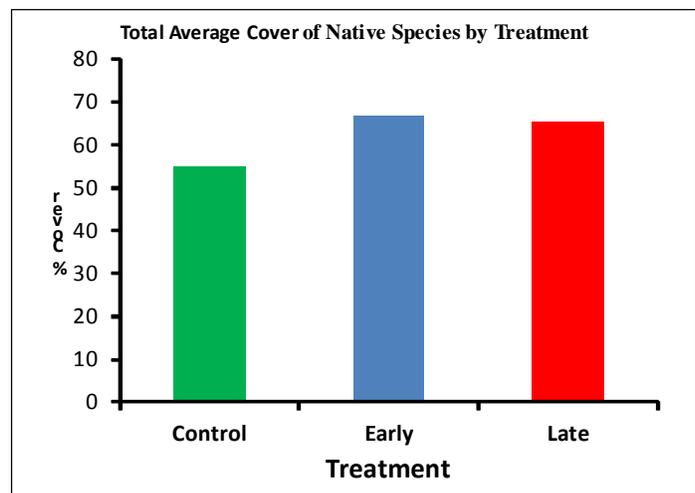
Removal of garlic mustard modestly increased the abundance of native species with the cover of native species being 55%, 67% and 65% for the control, early, and late removal treatments, respectively. (See graph below)

Our research also demonstrated that the abundance of mycorrhizal fungi, that are beneficial to about 90-95% herbaceous native plants, also increased with removal of garlic mustard. These fungi invade roots of

native plants and produce hyphae that are thread-like structures that extend out of the root. These hyphae act like supplemental roots and increase the ability of the plants to obtain inorganic nutrients, especially phosphorus, and water. Because garlic mustard produces chemicals that kill these fungi, removal of the invader should increase the growth of native plants.

We have shown that non-mycorrhizal plants (e.g. spring beauty, toothwort, false mermaid-weed) responded more quickly to removal of garlic mustard to removal of garlic mustard than mycorrhizal plants. The early response of the non-mycorrhizal plants may be the result of non-mycorrhizal plants responding to a reduction in direct competition from garlic mustard as it is removed, whereas mycorrhizal plants may be dependent upon recovery of the mycorrhizae before they show increased growth on the garlic mustard removal plots.

Thus our experiment shows removal of garlic mustard is beneficial to native species, but what it does not explain is why garlic mustard declined in our control plots. One hypothesis proposes that when garlic





## **Eagles, eagles, eagles**

ParkLands Foundation has had the pleasure of hosting a successful Bald Eagle nest at the Letcher Basin Nature Preserve in southeastern Woodford County for the past four years. And, in the third week of March, the parent eagles at Letcher Basin were observed bringing food to the nest. Check the ParkLands Facebook page and CILB, the Central Illinois Birders Forum <http://groups.google.com/group/CILB> for updates.

McLean County has recently seen an attempted nest (which blew down) at our Mohr Nature Preserve and a reported successful nest for two years along Kickapoo Creek west of Heyworth on private land (the Bald Eagles can often be seen flying around at Centennial Park off of Highway 136). Now we can add another nest that is near Lake Bloomington. This nest can be easily viewed from 2450 North Road. Just take that road going west of the Garver Road bridge over Lake Bloomington and after passing a large house on the right you will see a few farm buildings on the right. Pull onto the road shoulder and look due south and you'll see the nest.

**Remember not to trespass and to view just from the road.**

*Angelo Capparella, Mary Jo Adams*

## **Garlic mustard *continued***

mustard first enters an area it produces high levels of the compounds that kill mycorrhizal fungi. However, they eventually out-compete the native species and do not need high levels of these compounds. Without high concentrations of the anti-mycorrhizal compounds, garlic mustard plants are less competitive against native species and eventually decline. There is experimental evidence that supports this hypothesis found by other researchers.

Our research has also shown that the loss of genetic diversity in populations of garlic mustard

through a process called “genetic drift” may be causing a loss of vigor in garlic mustard. Nevertheless, as one of our colleagues at ISU proposed, “the best way to get rid of garlic mustard appears to be to study it.”

There certainly are areas in the Merwin Preserve where we could duplicate our removal experiment to test his suggestion.

*Roger and Becky Anderson*

## **Caring for ParkLands Properties - Stewardship Report**

ParkLands Foundation completed many restoration and maintenance projects in 2012. We plan on keeping the momentum going for the rest of 2013. ParkLands plans on hiring two part time interns for the summer starting the 20<sup>th</sup> of May and extending through the first week of August. Interns will assist with restoration activities and maintenance of the trails located within our many preserves. Interns will gain much needed experience for future employment. *Applications are due April 8; the form can be downloaded from [www.parklandsfoundation.org](http://www.parklandsfoundation.org).*

ParkLands plans on implementing prescribed fire at the Merwin Preserve, Weston Cemetery Nature Preserve, the Moon Tract, and Merwin North and South Savannas. The foundation is also currently

working on restoring the Merwin Preserve Prairie. We previously planted another six acres of prairie forbs and grasses in the fall 2012. Management, such as mowing and weed control, will need to be done until the prairie forbs get established.

Visit our website to download a copy of the workday schedule. If you would like to be added to our workday email list please send an email to [shoemaj@gmail.com](mailto:shoemaj@gmail.com).





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### Visit Us @

the ParkLands booth at the Illinois Sustainable Living & Wellness Expo  
Sat., April 11 9 - 4  
Illinois Wesleyan Univ. Shirk Center  
Emerson Avenue, Bloomington

### Attend

an event benefiting ParkLands sponsored by SEAC & SEHA, ISU's student environmental organizations  
Wed., April 10, 5 - 8  
Circus Room, Bone Student Center

### Summer Internships Deadline: April 8

Know someone who likes being outdoors? We're seeking applicants for 2 paid summer internships. Log onto [www.parklandsfoundation.org](http://www.parklandsfoundation.org) and download the application.

## Calendar of Events

Wild Ones program  
Mon., April 8, 7pm  
"Hiking Where the Wildflowers Grow"  
Susan Post, INHS  
Mennonite Church, W.  
Hovey @ Cottage, Normal

Merwin Preserve  
South Gate  
Workdays Leader:  
Jason Shoemaker  
309-531-7065  
[shoemaj@hotmail.com](mailto:shoemaj@hotmail.com)

Ill. Sustainable Living & Wellness Expo  
Sat., Apr. 11  
9am - 4pm  
IWU Shirk Center

Wildflower Walk  
Sun., April 12, 1 pm  
Merwin Preserve  
West Gate  
Leader: Roger Anderson  
309-452-5728

Wildflower Walk  
Sun., April 21, 1 pm  
Merwin Preserve  
South Gate  
Leader: Dale Birkenholz  
309-452-8086

Wild Ones Native Plant Sale  
Sat., May 18  
8 am - 1 pm  
Univ. of Ill. Ext.  
402 N. Hershey, B'ton

Invasive Species Control  
Fri., May 3, 9 am  
Cattle pasture

<http://www.wildones.org/chapters/ilprairie/nativeplantsale.html>

**NOTE:** Work dates are subject to change. Join Jason's e-mail list or log on to [www.parklandsfoundation.org](http://www.parklandsfoundation.org).