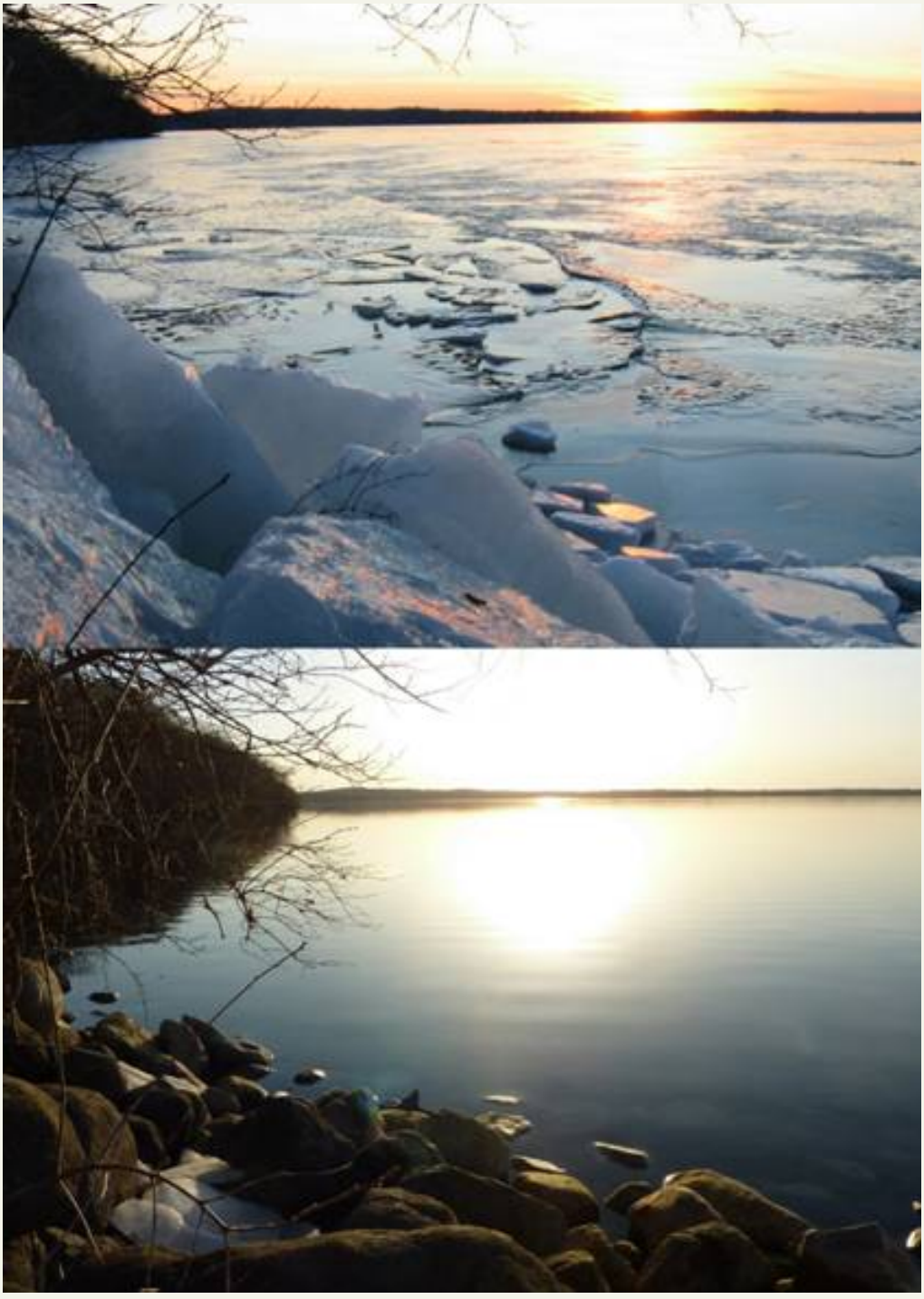
Spring 2012
Lakeshore Nature Preserve
E-newsletter



What a difference a few days makes!
Frautschi Point looking west (above) on Fri. March 9, 2012 and (below) Tues. March 13, 2012.
Photos by Bryn Scriver.

Introducing the Lakeshore Nature Preserve 2012 Garlic Mustard Challenge

What is a Garlic Mustard Challenge? In its simplest form the “Challenge” is a challenge to see how bags of garlic mustard we can pull from the Lakeshore Nature Preserve and many hours volunteers can contribute to the effort this spring before the plant goes to seed sometime in late June. But beyond that it’s a way to create new interest in a routine management activity and highlight the need for on-going stewardship. It’s also a way to celebrate the continued collaborative effort between the University, the Friends of the Lakeshore Nature Preserve and other volunteers who “pull together” to control this aggressive non-native weed.

We also hope to foster new volunteers and provide ample opportunity for people to become involved in caring for the Lakeshore Nature Preserve through the simple act of weeding. Volunteer efforts over the last 10 plus years have certainly paid off as Friend and volunteer Roma Lenhan’s detailed record-keeping for the west half of the Preserve shows that the amount of garlic mustard that needs to be removed and the number hours needed to do it are decreasing over time.

We will post weekly “updates”—number of bags of garlic mustard removed from the Preserve—to the Friends of the Lakeshore Nature Preserve website and to the kiosks located at the bottom of Muir Woods, Picnic Point, and Frautschi Point. We hope you’ll check on your progress regularly.

A celebration and recognition ceremony will take place on Saturday May 5 from Noon to 1pm at Picnic Point after the regularly scheduled Friends of the Preserve sponsored workparty (9AM-Noon). Refreshments (garlic mustard pesto, anyone?) will be provided while we revel in the final tally!

For more information on how you can participate in the Challenge please contact:

Bryn Scriver, Preserve Volunteer Coordinator,bscriver@fpm.wisc.edu or 220-5560, or
Roma Lenehan, Friends of the Preserve,rlenehan@charter.net or 238-5406.

Spring semester volunteer workparties are listed below:

Date:	Day:	Meeting place:	Time:
March 24	**Saturday**	**Picnic Point/Lot 129**	**9am-noon**
March 26	**Monday**	**Picnic Point/Lot 129**	**9am-noon**
April 4	**Wednesday**	***Frautschi Point lot***	***1:30-3:30pm***
April 12	**Thursday**	***Frautschi Point lot***	***1:30-3:30pm***
April 14	**Saturday**	***Frautschi Point lot***	***1:30-3:30pm***
April 15	**Sunday**	**Picnic Point/Lot 129**	**9am-noon**
April 17	**Tuesday**	***Frautschi Point lot***	***1:30-3:30pm***
April 21	**Saturday**	**Picnic Point/Lot 129**	**9am-noon**
April 22	**Sunday**	**Picnic Point/Lot 129**	**9am-noon**
April 23	**Monday**	***Frautschi Point lot***	***1:30-3:30pm***
May 2	**Wednesday**	***Frautschi Point lot***	***1:30-3:30pm***
May 4	**Friday**	**Picnic Point/Lot 129**	**9am-noon**
May 5	**Saturday**	**Picnic Point/Lot 129**	**9am-noon**
--celebration			**Noon-1pm**
May 19—planting	**Saturday**	**Picnic Point/Lot 129**	**9am-noon**
May 20—planting	**Saturday**	**Picnic Point/Lot 129**	**9am-noon**

Bumble bee ecology

On Feb. 22 Preserve staff joined about 40 other conservation professionals and volunteers for a workshop on Wisconsin bumble bees sponsored by the Xerces Society for Invertebrate Conservation and the UW-Madison Arboretum. Jennifer Hopwood of the Xerces Society introduced us to bumble bee ecology, identification and conservation efforts.

The impetus for the workshop came in the fall of 2011, when Arboretum staff documented the presence of *Bombus affinus*, commonly known as the rusty-patched bumble bee. *B. affinus* was once common throughout much of the eastern United States and upper Midwest, but its populations have declined dramatically in recent years, and it is now absent from much of its historic range. The same holds true for three other bumble bee species in the U.S. – *B. terricola*,*B. occidentalis*,and *B. franklini.*

Bombus impatiens **(common eastern bumble bee) foraging on New England aster. Photo by Adam Gundlach.**

Worldwide, pollinators are required for approximately 35% of crop production. Here in Wisconsin, cranberries, apples, green beans, and cucumbers are just some of the crops that require pollination. Wisconsin has 20 species of native bumble bees that are important pollinators for agricultural crops as well as native plant communities. Members of the gentian family are fully reliant on bumble bees to pollinate their flowers, as *Bombus* species are the only bees strong enough to pry open the tight corolla and wiggle their way down the flower tube.

Bumble bees are active both earlier and later in the day than other pollinators. They accomplish this through muscular thermogenesis – the bumble bee equivalent of jumping jacks – whereby they shiver their flight muscles to create heat. This allows them to be active early in the spring, late in the fall, and on cloudy, damp days, when other pollinators are less likely to be active.

Shivering flight muscles also allow bumble bees to perform buzz pollination (or sonication) of certain flowers, such as cranberries, blueberries, eggplants, tomatoes, and other species in the Solanaceae family. In our prairies and savannas, Midland shooting star (*Dodecatheon meadia)* also is a benefactor of buzz pollination by bumble bees.

Bumble bees form annual colonies in North America. Queen bees overwinter in the ground, often in insulated locations such as abandoned rodent dens. When the queens emerge in the spring, they begin searching for nest sites. This is the time of year when you'll often see the plump queens hovering back and forth just above the ground. Once the proper site has been located, the queen begins laying eggs that will form the work force of the colony. Eggs hatch within a couple of days, and the larvae begin to feed on a mixture of pollen and nectar provided by the queen. The larval stage has four instars of development, and the adult bees emerge approximately five weeks later. The first cohort to emerge is comprised entirely of female workers that begin foraging for the colony. Later in the summer, the colony reaches its peak and begins producing males and potential queens, which leave the nest to mate. Mated queens search for sheltered locations and enter diapause to overwinter. The rest of the colony dies as colder temperatures of late fall set in.

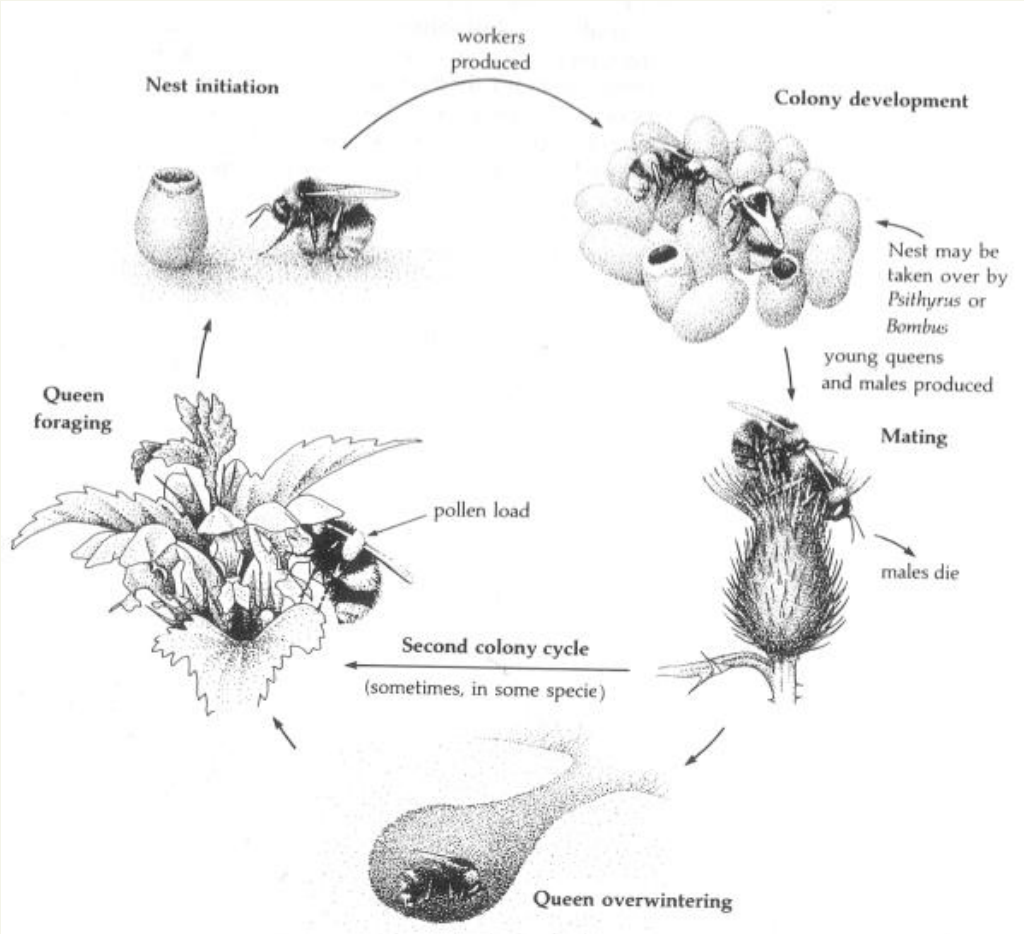


Image: http://www.bumblebee.org/

In addition to habitat loss, wild bumble bee populations are increasingly threatened by the spread of disease from commercially produced bees. Changing climate and seasonal phenology may also affect bumble bee survival, as periods of warm weather in early spring may rouse queens from their hibernation before the plants they feed on have emerged.

When managing for bumble bees, one of the most important factors to keep in mind is providing adequate forage throughout each season. Whether it's in your home garden or a restored prairie, fostering a plant community that provides flowering plants from early spring through late fall will help to ensure that bumble bee colonies are robust during the growing season, and that queens are well fed prior to their winter dormancy. The Lakeshore Nature Preserve with its restored natural areas and extensive organic gardens may be especially attractive for pollinators.

A more thorough review of bumble bee ecology can be found at www.xerces.org/bumblebees

The *Friends of the Lakeshore Nature Preserve* July 22 fieldtrip, led by Susan Carpenter, will focus on native pollinators in the Preserve gardens and restored landscapes.
For details and a complete list of Friends sponsored field trips go to their website.

We want to know which species of bumble bee are buzzing around the Preserve. Please contact Bryn Scriver, bscriver@fpm.wisc.edu to learn techniques for "collecting" bumble bees with your camera.

Spring 2012 Burn Season

The spring of 2011 brought beautiful weather, but winds that prevented prescribed burns from being conducted in the Preserve. Given the Preserve's location in an urban matrix, the appropriate winds ensure that smoke is dispersed away from University Hospital, Eagle Heights Apartments, and other areas of concern. The lack of burns last spring turned out to be only a minor setback, as it paved the way for the first fall burns conducted in the Preserve's history.

Fire creeps as smoke rises in front of the white oak at Raymer's Cove in November 2011. Photo by Cathie Bruner.

This spring, Preserve staff plan to build on that success by continuing to expand the use of fire as a management tool in other areas of the Preserve. Several small restoration areas have been planted with fire-adapted prairie plants. Such species thrive under a regular burn regime. Fire serves multiple purposes, including removing leaf litter and thatch, controlling cool-season weeds and tree seedlings, improving germination of native seed, and stimulating growth of fire-dependent plant species – the blackened soil warms faster than unburned areas, accelerating growth of warm-season plants.

Until recently, prescribed burns focused on Biocore Prairie in the heart of the Preserve. Last fall, burn units expanded outside of the prairie to other areas in the western portion of the Preserve. This spring, a number of small burn units are planned in the eastern end of the Preserve. Though these locations pose logistical challenges given the close proximity to buildings, roads, and pedestrian paths, it also provides opportunities for educating the campus community about the importance of fire in land management. Prescribed burns are carried out by trained personnel, and are conducted under conditions that meet the prescriptions laid out in the prescribed burn plan.

The Fuss Over Invasives

by Jenna Mertz, Preserve intern

To any regular walker, jogger, or passerby of the Lakeshore Nature Preserve, it is a common sight: the pulling, plucking, cutting, yanking, and piling of unwanted vegetation. Whether it is in the form of interns wielding handsaws and clippers poking through the brush, volunteers stuffing black garbage bags full of leafy undesirables, or staff toting plastic “backpacks” of electric blue herbicide, invasive species management is always visible at the Lakeshore Nature Preserve. But what qualifies a plant as “invasive?” Why is so much effort directed at controlling these species, and most importantly, why should users of and visitors to the Lakeshore Nature Preserve be concerned about this issue?

What is an Invasive Species? Plant life in the Preserve can be divided up into three categories: that which is “native,” that which is “non-native,” and that which is “invasive.” Native plants are defined as plants that had already established themselves in North America prior to European settlement or have since arrived by natural means of dispersal. Non-native plant species, on the other hand, are plants that have been introduced by humans, either intentionally or accidentally. While many non-natives don’t pose serious threats to the quality of a native plant community and can even be helpful (take the potato and other food crops, for instance), some can be highly aggressive and harmful; these are known as “invasive” species.

Invasive species aren’t merely nuisances like the occasional weed or dandelion; they are much more disruptive and can negatively impact not only the environment, but also the economy and human health. They tend to have high reproductive rates, produce many seeds, and can cover large areas and persist in them for many years. As a result, they displace native plants through competition for nutrients, sunlight, and pollinators, and decrease biodiversity. Invasive species have no natural controls to keep them in check and therefore tend to decimate and dominate native plant communities; this is why oceans of garlic mustard can often be seen in what was once a diverse woodland plant community. Volunteers and Preserve staff diligently pull, pluck, and cut in an attempt to artificially become those lost biotic controls.

Why Should We Care? Invasive species negatively impact the beauty, health, and functionality of the Lakeshore Nature Preserve. Single species stands of dame’s rocket displace native phlox, and porcelainberry vine engulfs and smothers what could have been viable, native walnut trees. Vibrant natives are replaced by monocultures of tangled and bulky invasives, displacing with them the pollinators, birds, and animals dependent on these plants. Invasive control is so vital to the Preserve because without it, walking, bird watching, enjoying the beauty of natural wildflowers, and hiking would be difficult or impossible. Constant vigilance, and the constant dedication of volunteers of staff, is needed to manage and eliminate these harmful invaders.

Some of the Preserve's least wanted plants: (right) Eurasian bush honeysuckle; (then clockwise starting in upper right corner) leafy spurge, Japanese knotweed, common teasel, garlic mustard, porcelain berry, dames' rocket, common buckthorn, and purple loosestrife. Photos by Glenda Denniston, Adam Gundlach, and Bryn Scriver.

Picnic Point: Nicer than ever…continued

University Communications released a story on the improvements to Picnic Point on March 14, 2012. You can read it herehttp://www.news.wisc.edu/20441.

In addition to the changes made possible by the Ebling Picnic Point fund, volunteers and Preserve staff began removing buckthorn in November 2011, moving west from the project site which at the time was marked by an abrupt dense edge of buckthorn. The initial clearing sought to create a gradual transition between the project site and the surrounding woodland. Through the winter, we have continued removing buckthorn west toward the narrows. The removal efforts will slightly increase views to the lake, decrease competition with native vegetation, and ease access to the area for managing other undesirable species, namely garlic mustard.

In recent years the woodland floor has been mostly devoid of vegetation (lots of bare soil) except for some large patches of trout lily which has persisted in the understory because it's a spring ephemeral which completes its growing cycle before the leaves open on trees and shrubs. This spring we will plant some shrubs and small trees to replace some of the buckthorn that was removed to maintain cover and food sources for wildlife.

Volunteer groups involved in the clearing since Nov. 2011:

- Alpha Phi Omega
- American Indian Science and Engineering Society (AISES)
- Arnold Air Society
- Bradley Residential Learning Community
- Friends of the Lakeshore Nature Preserve
- Hmong American Student Association (HASA)
- Horticulture 120 students
- Kronsage, Cole and Sullivan Halls (KroCS)
- ROTC
- Student Leadership Program, Leadership Through Volunteering Committee
- UW Marketing Club
- UW Triathlon
- Plus many individual volunteers!

THANK YOU!

This beautiful winter scene of Picnic Point, painted by Sally Bilder is part of 2012 Dane County Cultural Affairs Commission Art Calendar.