



PRESERVE!

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Friends of the Lakeshore Nature Preserve Newsletter

Dedicated to the Preservation and Stewardship of our Woodlands, Wetlands, Prairies and Shorelines

A Clean Future for the Yahara Lakes: Solutions for Tomorrow, Starting Today

by John Magnuson

The October 10 Yahara Lakes Conference (www.nelson.wisc.edu/outreach/yahara) presented an emerging, renewed vision for the Yahara Lakes and new constructive information on how to fix our lakes. Earlier newsletters pointed out the Preserve's intimate relation with Lake Mendota (Magnuson, Winter 2006) and a civic vision for the lakes (Mollenhoff, Spring 2008). This Conference, organized by the Nelson Institute for Environmental Studies and the Yahara Lakes Legacy Partnership (www.danewaters.com/YaharaLakesLegacyPartnership.aspx), was attended by many members of our Friends group and Daniel Einstein from the University's Preserve staff. It provided a significant stepping stone toward a cleaner future for the Yahara Lakes, all the lakes connected by the Yahara River – Lakes Mendota, Monona, Waubesa and Kegonsa.

The University of Wisconsin's Lakeshore Nature Preserve's shoreline is 4.3 miles long, 20% of the total Lake Mendota shoreline, making the University the largest single shoreline owner. The Preserve benefits from actions to improve water quality and it can help reduce the pollution of the lake as well.

Dick Lathrop, a keynote speaker, pointed out that phosphorus is the most important nutrient contributing to nuisance algal blooms. Reducing nutrient loading, the amount of nutrients like phosphorus entering the lake, is key to a cleaner lake. Lake Mendota, the upper lake, has the largest watershed, most of which is agricultural. About three-fourths of the phosphorus entering the lake is from agricultural areas and one fourth is from urban land uses. The Preserve is included in the urban portion. To reduce nutrient inputs from manure and runoff, a constructive partnership between the urban and agricultural residents is essential.

Dr. Lathrop said nutrients leaving Lake Mendota at Tenney Park through the Yahara River provide about two-thirds of the phosphorus to Lake Monona, that in turn contributes two-thirds of the phosphorus to Lake Waubesa, which then contributes two-thirds of the

phosphorus to Lake Kegonsa. Thus, reducing phosphorus entering Lake Mendota has multiple benefits downstream.

Lake Mendota is an icon of the Preserve we treasure as well as an icon of our region. Steve Carpenter, a keynote speaker, pointed out that investments to reduce nutrient inputs to Lake Mendota by 50% could have net benefits to the community of \$51.2 million for Lake Mendota alone by reducing the frequency of noxious algae blooms based on an economic study by Stomborg et al. in the 2001 *Review of Agricultural Economics* updated to 2007 dollars.

How can local non-governmental organizations (NGOs), like the Friends of the Preserve, become more effective partners in cleaning up the lakes? One suggestion is to form an umbrella organization to increase coordination of NGO efforts. The goal would be to decrease nutrient runoff from both urban and agricultural lands. While agricultural runoff is more significant than urban runoff, progress is needed in both areas. Cost sharing between urban and agricultural partners is essential.

Many lessons and ideas were specifically relevant to the Preserve. The Preserve serves as a storm runoff buffer between the campus and the lake, removing associated nutrients and sediments. Storm sewers and erosion channels passing through the Preserve bypass that buffer role. However, the Preserve lands are also a source of sediments and nutrients from storm runoff. Both issues deserve our concern and advocacy. Improved management of the vegetation, water, soil, and nutrients on the Preserve and the campus can reduce storm water discharge of eroded soils, nutrients, and leaves which provide phosphorus to the lake. This action will help enhance the lake while improving the quality of the Preserve itself. We, the Friends of the Lakeshore Nature Preserve and the University itself, have important roles to play as part of the Yahara Lakes Legacy Partnership. Step one – develop a specific, plan of action and support.

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Friends of the Preserve

is a 501(c)3 non-profit organization

We Welcome Submissions to the Friends of the Lakeshore Nature Preserve Newsletter and Web Site

The Friends welcomes the submission of articles and announcements for our newsletter. We encourage people to share their checklists and other relevant Lakeshore Nature Preserve materials on the Friends of the Lakeshore Nature Preserve Web Site. For information on submitting material, call Roma Lenehan at 238-5406 or send your articles or checklists to rlenehan@charter.net. To reserve space in our next newsletter, please tell us about your material by January 21, 2009. The submission deadline is February 11.

Students Group Supports the Preserve

Students of the Lakeshore Nature Preserve is a small, dedicated, growing group of UW-Madison students from many academic disciplines whose mission is the restoration and protection of the Lakeshore Nature Preserve. The members provide ecologically oriented events, promote awareness of the value of this unique natural area on campus, and serve as a resource for students and faculty looking for ways to interact with and learn about the environment. They also help campus groups in search of volunteer projects connected with the Preserve.

Past and Current Projects

The group was formed in 2006 by a group of student volunteers working with Rebecca Kagle, a restoration ecology graduate student from the Department of Landscape Architecture (see Muir Woods article, *FCNA News*, Fall 2005). The early projects focused mainly on Muir Woods and included improving the trails using wood



Work in Muir Woods (Britt Ricci)

chips and log edging and removing of invasive species. Over the past year, the group has grown and has expanded its work party activities to include not only Muir Woods maintenance tasks but also work in Caretaker's Woods, Frautschi Point, and the Central Lakeshore Path. Outreach activities include the creation of a group t-shirt and last fall's natural materials art project with the after-school program at the Eagle Heights Community Center. This event was a big hit with both the children and the students and resulted in both groups learning more about the natural world.

Future Plans

Students of the Lakeshore Nature Preserve plans to continue promoting the Preserve and hopes to inspire other students to become involved by enlarging and displaying some of the exceptional photographs taken by Glenda Denniston in various places in the Preserve. In the spring they will be working on erosion control techniques along the Lakeshore Path and researching the most efficient and cost effective approach to deal with stormwater run-off damage. In addition, the group will continue to monitor and care for the space that started it all, Muir Woods. To view the group's t-shirt, photos, and calendar of activities, visit www.slnp.wetpaint.com or contact Amy Jo Dusick at dusick@wisc.edu.

Announcements

Save the Date! Friends of the Preserve Annual Meeting April 7, 2009

James F. Kitchell, Arthur Hasler Professor of Zoology and Director of the Center for Limnology at UW-Madison, will be our speaker.

Preserve Will Have New Signs

With leadership from UW Landscape Architect Rhonda James and participation from the Friends and the Preserve Committee, new Preserve signs were designed and prototypes tried in the field. They feature a distinctive "Preserve" look and color choices fitting the natural environment. Next summer you will see way-finding signs along trails, interpretive panels describing Preserve history and environment, gateway signs at major entry points, and "kiosks" providing information about events, ideas about what to do (and what not to do) in the Preserve, maps, and photos.

Help Us Find New Board Members

If you or anyone you know is interested serving on the Friends Board, please send the name(s) to Nominating Committee Chair, John Magnuson at jjmagnus@wisc.edu. On the Board you can meet people, support and learn about the Preserve, and have fun.

Caring for Edges, Essential Parts of the Preserve

by Roma Lenehan

"We can be ethical only in relation to something we can see, feel, understand, love, or otherwise have faith in."

Aldo Leopold, *A Sand County Almanac*

Although humans persistently create edges, we tend to lack the respect Aldo Leopold asks us to feel for the land. Instead of loving the edges, we tend to view them as areas to ignore or waste areas for dumping materials. We need to change our attitude toward edges in order to restore urban natural areas like the Preserve.

What Are Edges?

Any area where two ecosystems come together, like lake and shore, or prairie and woods, is an edge and has edge effects. Species diversity is higher in edges because species of both habitats occur as well as species like the Catbird, Raccoon, and Rabbit that specialize in edges. Edge effects continue a significant distance into both habitats, causing changes in plant and animal composition.

Importance of Edges in the Preserve

The Lakeshore Nature Preserve has only 300 acres, but more than four miles of Lake Mendota shoreline and an even greater amount of interior edge. Anywhere one habitat joins another, including a road or trail within a habitat, an edge occurs. Some Preserve areas, like the Howard Temin Lakeshore Path, are mainly edge. Most people only experience the edges, seeing the Preserve from roads, parking lots, the Lakeshore Path, or trails. If visitors' impressions of these edges are negative, their impressions of the Preserve will be negative.

Many animals use edges or use several habitats daily or seasonally. The tendency to use edges is intensified in the Preserve, where all habitats are relatively small and a significant portion of the total available natural area is edge. Local Red-tailed Hawks live on the edges, nesting in the woods and hunting in the open areas. Many breeding songbirds nest in the woods and later in the season feed their fledglings on the edges. Some migrating songbirds, like Palm and Tennessee Warblers, preferentially feed in the forest in the spring and the fields and prairies in the fall.

Challenges of Edges

Edges provide restoration challenges. Where two habitats meet, two groups of plants and animals meet and compete. Often the edge, such as a road in the woods, is opened up to sun, providing opportunities for sun loving plants to invade. Frequently the edge is more disturbed than the interior, creating opportunities for invasion by opportunistic native pioneer and non-native weeds. In edges, humans shoes, vehicles and dogs, water, and birds and other animals often introduce new

seeds. As a result, new invasive plants often start on the edges. Once established on the edge, invasive plants can move into the adjoining habitats. In some cases, people view edges as useless and dump material (trash, mulch, branches), creating areas of disturbance which become expanding eyesores. When natural habitats are small, as in the Preserve, edges become a primary source of invasive species, complicating restoration.

Management of Edges in the Preserve

Many of the ongoing projects involve trying to restore edges, including the main Frautschi Point trails, Frautschi Point gully and field edge, Picnic Point base lake edge, Eagle Heights Woods edge, and Upper Bill's Woods Planting Area.

Main Frautschi Point Trails – Along the Frautschi Point driveway and Lakeshore Path, Preserve Management, Friends volunteers, and paid employees have cooperated in restoration. Buckthorn and other invasive brush have been removed. In several areas, like "Sedge Point," below the western branch of the driveway, native plants have returned naturally. In other more disturbed areas, including west of "Sedge Point," hundreds of native plants were planted.

Eagle Heights Woods Edge – The project, begun to increase sunlight to the University Houses Gardens, involves a narrow strip of edge between the weedy Gardens border and the woodland. Disturbance and increased sun have allowed invasive trees and weeds to spread. Intensive weed management and planting plants and seeds should enable the area to become a native border rather than a source of invasive weeds.

Upper Bill's Woods Planting Area – Across from the Grounds Storage Area, an area disturbed by the storage of mulch is being restored to an oak savanna and woodland by the Friends. Like most edge areas, this area continues to require vigilance and maintenance by volunteers to control weeds and over aggressive plants.

Edges as Precious Resources

Humans evolved to live on the edges, often next to water or woods. Yards, with scattered trees and grass, are a re-creation of an edge. In natural areas like the Preserve, visitors spend most of their time on the edges. Edges must become valued resources, to be treasured and loved, not areas to be ignored or abused. Restoring and caring for edges requires long-term commitments of labor and money. In this way we will set an example, encouraging all people to adopt Leopold's land ethic.

Looking Back: A History of the Friends

The Friends of the Preserve's anniversary on September 19 provided an opportunity to examine the organization's history and accomplishments, some restoration lessons learned (page 7), and the changes in the Preserve due to the restoration efforts of multiple groups (page 8).

In 2000, most of the field projects, begun with the permission of Field Manager Cathie Bruner, were small-scale and without coordination, except for the Biocore Prairie restoration. In 2000 the Preserve (then called the Campus Natural Areas) was separated from the Arboretum and a new governing Committee created (see box page 5). In 2001, under the auspices of the Committee, the Friends were formed (see page 5).

Purpose of the Friends

From the beginning, the Friends has been an organization that "serves as an advocate for active stewardship of the" Preserve (Charter, 2001). The organization is a membership organization which "intends to support, encourage and contribute to the University's efforts" to increase the Biodiversity of the Preserve, educate people about the Preserve, encourage the appropriate use of the Preserve, and support it by supplying volunteers and money (Statement of Goals, 2002, published *FCNA News*, Spring 2003, page 3). The Friends supported the Preserve and its governing committee (see box page 5) and worked in the field under the supervision of Field Manager Cathie Bruner.

Originally a Group of Volunteers

It began with a simple question about a white flower. Kathie Brock found an unknown plant in Eagle Heights Woods. She asked what it was and if it was bad. The plant was Garlic Mustard and it was very bad. Within a short time, Tom and Kathie Brock were organizing Garlic Mustard work parties in the Campus Natural Areas (now the Preserve) for Greg Armstrong, then the Director of the Arboretum. For several years, from April 1997 through 1999, they led regular Saturday volunteer work parties, removing Garlic Mustard and cutting Buckthorn and Honeysuckle. Bob Goodman, Henry Hart, Tom Helgeson, Susan Slapnick, Glenda Denniston, and others joined them. The Brocks helped the Arboretum raise money to support the area and hire Cathie Bruner in 1997 as Field Manager. In the process, the Brocks generated a list of names that the Friends used to do their first, very successful, membership mailing. Tom put up signs, developed a map brochure, and collected material about the area's history. They created awareness of the Preserve (then the Campus Natural Areas) as a special place, separate from the UW Arboretum, that needs care. The Friends owe a big debt to the early work of Tom and Kathie Brock.

Volunteers

Begun as a volunteer organization, the Friends continue to provide hundreds of hours of volunteer work annually. The Friends first volunteer project, the Eastern Bill's Woods Project (see page 8), continues to prosper. The Friends cooperate with the Preserve management in several projects including those at Frautschi Point, in the savanna edges of the field, and at the edge of Eagle Heights Woods. In addition, the Friends organize Garlic Mustard work parties and the Garlic Mustard Pull-A-Thon and devote hundreds of hours to controlling Garlic Mustard annually.

Financial Support

The Friends have raised more than \$150,000 to support the Preserve, assisting Management to accomplish its goals. Some things the Friends have done:

- Increased plant diversity by purchasing and planting thousands of native local ecotype plants in Bill's Woods; Frautschi Point along the Big Oak Trail, Gully and field edge; and other places.
- Enabled the Preserve to restore and stabilize the Raymer's Cove parking lot and the adjoining erosion gully and build a stairway to the Cove to prevent future erosion by providing \$10,000 to match a Department of Natural Resources grant.
- Provided 800 hours of work by paying the team of five Audubon Interns in 2007 and 2008.
- Aided in the control of Garlic Mustard and other invasive species by providing \$18,120.
- Enabled Preserve management to hire personnel, maintain the Preserve, and do other desirable tasks by providing money.
- Informed hundreds of people about the Preserve and recruited active supporters through the Friends membership, educational, and outreach activities.

Education and Outreach

See page 6 for accomplishments of the Friends in its education and outreach programs.

Major Fund Raising with the UW Foundation

Friends Board members, Blair Mathews and Dick McCoy, under the auspices of the Development Committee, a Committee that includes Friends members, Preserve staff, and members of the Preserve Committee, have raised significant amounts of money to support the Preserve. Most of this money was raised in cooperation with the Alumni Association as reunion class gifts of UW classes. In this way, they raised more than one hundred thousand dollars for Muir Woods and the Lakeshore Path from the Classes of 1953 and 1963. The Class of 1955 generously gave almost \$200,000 to

restore Tent Colony Woods. Most recently, Blair and Dick raised over \$100,000 in honor of Bill Cronon in the very successful 2007 Bill Cronon's Priorities fund raiser for the Preserve Stewardship Fund.

Participation in UW Committees

The Friends President is an ex-officio member of the Lakeshore Nature Preserve Committee and Friends members have participated in its subcommittees. Members worked on the Master Plan, participating by serving on subcommittees, helping draft reports, and contributing to discussions. They also provided photographs and text for the award-winning Preserve website.

Lakeshore Nature Preserve Committee

In the fall of 2000 the Campus Natural Areas was separated from the Arboretum and placed under a separate university governing committee, the Campus Natural Areas (now the Lakeshore Nature Preserve) Committee, composed of three faculty members, three academic staff members, and three students. A new separate Committee would have time to focus on all the challenges of a small, intensively used, piece of land on the UW Campus. Therefore, the Committee, under John Harrington, was charged with overseeing the management of the area. The Committee worked on developing a Master Plan, concentrating on the biological aspects of the plan. The Friends participated in the planning process, attending meetings and providing input. In fall 2004, Bill Cronon became Chair of the Committee. The area was renamed the Lakeshore Nature Preserve in 2005. Under Bill Cronon, the Committee completed and publicized the Master Plan, which incorporated Big Woods, Willow Creek Woods, and a portion of Observatory Hill into the Preserve. The Plan included plans for human usage and hardening selected areas of the Preserve to sustain this human use. Bill Cronon also oversaw the development of an award-winning website to raise awareness about the Preserve (www.lakeshorepreserve.wisc.edu). Currently Ray Guries is Committee Chair. The Committee interprets the Master Plan, sets priorities, and makes policy.

How did the Friends start?

The first organizing meeting was March 2001 at the University of Wisconsin Foundation. The Campus Natural Areas Committee representative and the Management suggested that the participants organize a group to support the Campus Natural Areas. Beginning April 11 and continuing through the spring and summer, an informal group, which became the "Steering Committee," met at Roma Lenehan's house.

Subcommittees did much of the work. The drafting Committee, which included Richard McCoy, Tad Pinkerton, Glenda Denniston, and Dan Doeppers, wrote the Charter, Bylaws, and Articles of Incorporation. The Outreach (now Communications) Committee, chaired

by Roma Lenehan, created informational material and prepared for the membership drive.

On September 19, 2001, at the first general membership meeting, the organization officially began. Attendees approved the Charter and Bylaws and confirmed the fourteen Steering Committee members as the first Board of Directors of the Friends of the Campus Natural Areas: Jane Camerini (President), Glenda Denniston, Dan Doeppers, Henry Hart, Tom Helgeson, Roma Lenehan (Secretary), William Mann, Blair Mathews, Richard McCoy, Bill Muehl (Vice President), Tad Pinkerton (Treasurer), Harriet Riley, Susan Slapnick, and Mary Trewartha.

The Friends Board has actively supported the Preserve and participated in Preserve planning. During Jane Camerini's tenure as President, from 2001 to 2004, the Friends organization was established and received non-profit status, the Bill's Woods Project was developed, and a functioning organization was created. Richard McCoy, President from 2004 to 2007, participated in Preserve planning and increased Friends visibility by his successful development efforts. Ann Burgess, President since 2007, has worked to deepen the partnership between the Friends and its University colleagues and to involve new Board members as the founding Board members' terms have expired.

Membership

The initial membership drive began October 5, 2001. Harriet Riley, the membership chair, hand addressed 589 membership letters. The letters were sent to people from the Brock volunteer and supporter list, the list of people who attended the public planning meetings, and other suggested names. New members received the first Friends newsletter. By year end the Friends had 128 members, a remarkable 22% response rate. An anonymous donor matched all initial membership donations, dramatically increasing the money collected.

Gradually, the membership has increased today to 290 supportive members.

Future Outlook

The Friends have an exciting future. Now that the Preserve Master Plan is in place, members can help the Preserve Management and Committee fulfill the Plan. The volunteer program will be providing additional opportunities for volunteers to care for the Preserve throughout the year. New educational materials and field trips continue to be developed. The Friends can provide money to support desired Preserve projects. The organization has joined the Yahara Lakes Legacy Partnership (see page 1) and will be working to improve Lake Mendota water quality. The Friends will continue to support the Preserve by providing volunteers, financial support, and educational opportunities.

Education Raises Awareness and Support for the Preserve

The Friends of the Preserve has provided multiple opportunities to learn about the Preserve over the last seven years through its newsletter, *PRESERVE!*, Annual Meetings, publications, field trips, and website. These forums have increased awareness of the Preserve and its needs, boosting membership in the Friends and support for the Preserve (see page 4 article).

The Friends Newsletter

The newsletter, edited by Roma Lenehan since its inception, is published three times a year. When the Committee changed the area name from the Campus Natural Areas to the Lakeshore Nature Preserve in 2005, the newsletter, originally called *FCNA News*, was renamed *PRESERVE!* The newsletter educates members and the public about the Preserve and its ecology, informs people about Preserve news and Friends efforts, and promotes Friends volunteer and outreach programs. All of the newsletters are available on the Friends website, allowing people to view previous articles. In addition, a single previous newsletter issue is available for \$2 and three issues for \$5.

In order to raise awareness of the history and evolution of the Preserve, the newsletter has included historical profiles of many areas of the Preserve: Big Woods (Winter 2006, p 3), Biocore Prairie (Fall 2001, p 3, and Winter 2005, p 5), the Class of 1918 Marsh (Fall 2002, p 7), Eagle Heights Woods (Spring 2002, p 7, and Spring 2003, p 7), Frautschi Point (Spring 2003, p 8), Lake Mendota (Winter 2006, p 1), Lakeshore Path (Winter 2004, pp 1, 4), Muir Woods (Winter 2006, p 5), Picnic Point (Spring 2004, pp 3-4, and Winter 2005, p 3), Tent Colony Woods (formerly North Shore Woods, Spring 2002, p 3, and Winter 2002, p 3), University Bay (Winter 2002, pp 5-6), and Wally Bauman Woods (Winter 2003, p 3).

The newsletter also has had information about plant and animal life in the Preserve, including invasive species, restoration, and interesting wildlife. Multiple articles about Preserve birdlife have appeared, including articles about the seasonal occurrence of birds (Spring 2005, pp 3, 8), the Breeding Bird Study (Fall 2001, pp 2, 5), and migratory bird stopovers (Fall 2002, p 3).

Submissions are always welcome (see page 2).

Field Trips

The Friends of the Preserve has had over 100 field trips, about a third of them co-sponsored by other groups like Madison Audubon Society and the Natural Heritage Land Trust. Over 750 people have attended the trips organized by the Friends, learning about a wide range of topics. The Friends sponsor annual field trips

about birds, butterflies and dragonflies, ecology and restorations. Previous field trips examined Preserve geology, trees, mammals, and plants. Especially popular are history field trips, including archeology, Native American and cultural landscape history.

Annual Meetings

The Friends have hosted a wide variety of interesting and well attended Annual Meetings, beginning in 2002 with Stanley Temple's talk on Urban Natural Areas. At the 2003 Marsh Celebration, Tom Brock spoke about Class of 1918 Marsh history, Kenneth Potter talked about the watershed, and Quentin Carpenter led a field trip to the restored Marsh. In 2004 Bill Cronon spoke about "Cultures of Nature" and in 2006, as head of the Preserve Committee, he spoke about caring for the Preserve after the Preserve Master Plan. In 2005 Daniel Einstein spoke about the cultural history of the Preserve. In 2007 John Magnuson spoke about Lake Mendota and its constant change. Last year David Mollenhoff spoke of civic vision and challenged members to become committed to improving Yahara Lakes water quality.

Other Publications

The Friends published a Friends Brochure with a trail map. In addition, they hand out a variety of other material, including the Lakeshore Nature Preserve Bird Checklist, the results of the Breeding Bird Study, and "Garlic Mustard Myths."

Website

In addition to information about the Friends and Friends events like field trips and meetings, the Friends Website, waa.uwalumni.com/lakeshorepreserve, has a map, descriptions and beautiful photos of each of the areas, and all the newsletters and other publications. Preserve history is also explored. For instance, the Class of 1918 Marsh section has extensive information including the text of the original signs that were placed along the trail. The website includes a great deal of material on bird, plant, and animal life. The Friends also contributed photographs and ecological information to the innovative Preserve Website, www.lakeshorepreserve.org, developed by the Preserve Committee, which has an award-winning interactive map and a great deal of historical material.

The Future

The Friends are planning for next year. The Annual Meeting will be April 7, 2009, and feature limnologist James Kitchell. Join us for the meeting or a field trip!

Ten Lessons Learned along the Way

by Glenda Denniston

1. Start with a vision

Have a clear image of what you would like a restoration to look like when it's finished. This is far more important than any preconceived step-by-step protocol or experimental plan of action. If you don't clearly see your goal, failure is inevitable.

2. Learn to look at the future

First, learn to see the future. The seedlings and saplings tell you what's ahead for an area. Imagine the ground layer plants fully grown. If you don't like what you see, change it. Deal with the small plants first.

3. Get 'em when they're young

Don't wait for invasive plants to grow big and strong. Pull first year Garlic Mustard, and bag second year Garlic Mustard before it has a chance to seed. Pull tiny Buckthorn and Honeysuckle seedlings when you first notice them. Bag Buckthorn berries and seed heads of other invasives before they have a chance to reproduce. Start with the outliers, gradually working toward the middle of a patch. Don't let them spread.

4. Be persistent. Be stubborn. Be vigilant.

Buckthorn and other invasive shrubs, whether simply cut back, cut and herbicide-treated or girdled, often grow back. Keep cutting back new shoots and dig out old stumps. Keep after them until they're gone. Clearing often invites new invasives, which thrive in the increased light. Be vigilant.

5. Expect to be surprised

Don't just assume that there is nothing of value in an area to be restored. First impressions are often wrong. Places that appear to have no native plants of value sometimes hold treasures in their soil bank. When invasives are removed, native plants not known to be present sometimes make their appearance. Frautschi Point has shown many surprises: savanna grasses, sedges and flowers, woodland ephemerals and uncommon ferns.



Nodding Onions (from Seed Bank), Frautschi Pt. (G.Denniston)

6. Avoid scorched earth techniques

This is a corollary to Lesson 5. Don't kill off everything and then try to create an ecosystem – it seldom works. Desirable seeds, fungi and insects are killed along with the undesirable ones. Restoration takes time. Work gradually and incrementally. Plant whenever you remove. Replace disturbed soil.

7. Recycle and replace

Return removed plant material when possible, especially in woodland restorations (of course this should never be done if doing so would reintroduce viable seeds or roots of undesired plants). We don't know everything about the needs of plants, including the role of mycorrhizal fungi. Let things rot in place, return them as mulch, or even inoculate with rotting sticks from healthy native woodlands.

8. Let nature be your teacher

Be prepared to learn from your mistakes. Plants don't always grow where they're "supposed to grow." Spread seeds of plants which thrive – they know what they want. Just because you've read that a species does well in a certain soil type doesn't necessarily mean it's true.

9. Know what works and what doesn't

Keep good records and consult them regularly. Change your protocols when you see they're not working, and record any changes in protocol. There is much to be learned from mistakes.



Native Plant Diversity in the Gully (G. Denniston)

10. Keep your eye on the goal

Constantly reassess. Keep comparing your restoration community with healthy natural communities of the same type. Is anything missing? Is anything over- or under-represented? Consider what might remedy this. Above all, always aim for the highest native diversity appropriate for your area.

Preserve Restoration and Field Work

In the spring of 2001, except for Biocore Prairie, the restoration projects in the Preserve* were small and relatively new. The Preserve* Committee was waiting for a Master Plan to initiate new major projects. Only Biocore Prairie had an approved plan. Due to the lack of planning and funding, most projects had not yet started. Today there are too many projects to discuss.

Eastern Bill's Woods

In 2001, Eastern Bill's Woods was a troubled area with potential. In the Upper area, mulch piles had been removed, but the area was uneven and covered with weeds (see photo). Runoff was creating erosion gullies in the surrounding woods. Volunteers were beginning the restoration of the wooded section of the area, planting woodland plants in the shade. After the open area was leveled, the planting of prairie and savanna seeds and plants began. Today, due to the hard work of Glenda Denniston (GD) and other volunteers, the open portion of the Upper Bill's Woods is a beautiful savanna (see photo). Aggressive weed management and repeated planting have enabled native plants to establish themselves in this heavily disturbed area. The native plants limit erosion and provide beauty to visitors and food and habitat for insects, birds, and other animals.



Upper Bill's in 2001 (GD)



And Three Years Later (GD)

The oak woods itself was choked with Buckthorn, forming an impenetrable thicket that created dense shade. Due to the shade, few desirable ground layer plants grew, but Garlic Mustard thrived. In 2002, the Friends began to restore the wooded portions of Eastern Bill's Woods. Non-native shrubs, like Buckthorn, were gradually removed and replaced with scattered native shrubs. Hundreds and eventually thousands of native plants were planted. Slowly, despite an explosion of Buckthorn and Garlic Mustard, the diversity of the woods was restored. Previously hidden plants, like Trout Lily, Jack-in-the-Pulpit, and Mayapple reappeared. The bird and plant watchers enjoy the increasingly diverse, more open oak woodland.

*Actually the Campus Natural Areas until mid-2005.

Biocore Prairie

The only large scale restoration in the Preserve in 2001 was the two acre Biocore Prairie, begun in 1997, which was featured in the Friends first newsletter, the Fall 2001 *FCNA News*. Weeds continued to provide an ongoing challenge to the initial prairie restoration. Plans to restore an additional three acres had been approved, but not yet implemented. In addition, in the fall of 2001 Mara McDonald began banding birds in this area to study the changes in bird populations as the habitat changed from old field to prairie.



Previous Old Field (GD)



Restored Biocore Prairie (GD)

Today the Biocore Prairie includes 13.9 acres of colorful prairie restoration. Although weeds continue to be a challenge in some areas, a diverse prairie has been established, replacing the simple old field. The prairie provides food and shelter for insects, birds and animals and provides learning opportunities for Biocore and other students. At the Biocore Prairie Bird Observatory Mara and her volunteers continue to band birds, educating people about birds. The transformation from old field to prairie, first envisioned by Ann Burgess and Curt Caslavaska, carried out by hundreds of students, paid workers, and volunteers, and now supervised by Janet Batzli and Seth McGee, is incredible.

Frautschi Point

The early efforts to improve the newly acquired Frautschi Point opened up the large open grown oak, created a view to the lake, and cleared and planted prairie seeds in the driveway "triangle." Unfortunately, by 2001 these areas were dominated by objectionable weeds, especially Garlic Mustard and Buckthorn. Tom Sinclair's 2003 Campus Natural Areas Video has pictures of the volunteers in the dense Garlic Mustard at the Frautschi Point "triangle" about this time.

Since then, significant restoration progress has been made. The Big Oak Trail, a new trail built in 2004 by Glenda Denniston with the aid of students, connects the two big open grown oaks and forms a loop through the

eastern portion of the property. This path proceeds through areas that were formerly solid Buckthorn and Honeysuckle. The Friends has done extensive planting of purchased plants and donated seeds along the Big Oak Trail. In addition, slightly larger restorations, funded with Friends money, continue at the first oak, in the cedar grove, and around the second oak into the field edge. These small-scale savanna restorations have become quite diverse and attract a variety of butterflies and other insects.



Hummingbird on Cardinal Flower, Gully Restoration (C Bruner)

The savanna edge along the field edge and gully is another rapidly evolving restoration. Initially this area was a wall of brush so thick that the second big oak could not be found in the summer. Clearing by the ROTC on their volunteer work days and by other volunteers opened up the gully and revealed the oaks along the fence line. After clearing, Canada Thistle and Burdock from the adjacent field took over the area. Glenda Denniston's intensive weed control and planting in the gully has significantly slowed the water and decreased the erosion in the upper gully. In addition, the native plants provide food and shelter for wildlife. Glenda and her volunteers have planted Bur Oaks and other native plants in some areas along the field edge.

Eventually the savanna edge restoration will meet the Biocore Prairie, creating a continuously restored area.

Lakeshore Path and Muir Woods

Among the first restorations under the new Preserve Committee, the Muir Woods (see *FCNA News*, Fall 2005, page 3) and Lakeshore Path restorations were partially funded by class gifts from the Classes of 1953 and 1963. Mostly using student volunteers, graduate students worked to eliminate invasive species, stop erosion, and restore native plants in these highly visible parts of the Campus. The creation of views along the shore on the Howard Temin Lakeshore Path by removing non-native shrubs and planting wildflowers has transformed the Path.

Picnic Point

The restoration of Picnic Point began last year, with the opening up of the shore edge at the base to allow visitors to see University Bay and the Capitol. Planting is proceeding in those areas and invasive shrub removal is continuing. Restoration of Picnic Point will accelerate in the next several years.

Willow Creek Woods

The restoration of Willow Creek Woods began in 2007. In this area near Native American Effigy Mounds, an understory of small, invasive trees and shrubs has been removed to "daylight" a group of large open grown oaks. Currently only grass is visible under these beautiful old oaks, but the planted savanna seeds will appear in future years.

What's Next?

Clearly the Preserve has changed greatly since 2001. The Preserve will continue to improve because of these and other ongoing projects, like the Tent Colony Woods restoration (see *PRESERVE!*, Winter 2007, page 1), as well as future restorations. Who knows what the next seven years will bring?

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