



# Minnesota Plant Press

The Minnesota Native Plant Society  
Newsletter

Volume 14, No. 3

Spring 1995

## Upcoming Monthly Meetings

Minnesota Valley National Wildlife Refuge  
Visitor Center, 3815 East 80th Street

Bloomington, MN 55425-1600 612-335-2323

5:30-6:30 PM—Board Meeting, Room B  
6:30-7 PM—Social Meeting, Room A  
7-8:45 PM—Regular Meeting, Auditorium  
9 PM—Doors close sharply at 9 PM.

**March 1**—Stan Tekiela, author, *Eatable Mushrooms: Gearing Up for Morels*; introduction to field trips; annual meeting and election of Board Members.

**April 1**—*Spring Symposium*—Minnesota's Coniferous Forests, see page 3

**April 5**—Steve Eggers, ecologist, *Minnesota Prairie Preserves: A Photographic Journal*; Plant-of-the-Month: reed-canary-grass (*Phalaris arundinacea*) by Charles Umbanhower.

**May 3**—Plant Photography Contest, Minnesota Nature Photography Club; Annual Plant Sale.

•**Spring Field Trips** (see page 3 for details)

**March 4**—Snowshoeing, Tettegouche State Park.

**March 15**—Herbarium Tour, UM St. Paul Campus

**April 26 & May 3**—Warblers and Wildflowers, Nerstrand Big Woods State Park

**April 29**—Spring Wildflower Search, LeSueur

**May 6**—Wildflower Hike, Interstate State Park

**June 16**—Gardeners' Wildflower Weekend

•To pool rides to the **Minnesota Valley National Wildlife Refuge**, please call—*well in advance*—Grace Gray who will coordinate pooling

•For **Winter Weather Emergency**, contact Diane Hilscher, or her answering phone message to find out if the **Center** is open or not.

## Wildflower Day in Williams

by Janet Boe

More than 10 years ago, while I was driving west of Baudette on Highway 11 in June, I saw enough showy lady's-slippers growing in the ditches along the road to take my breath away. Later, I learned that most persons living in Lake of the Woods County knew of this large population of the state flower and thought that this was something of a tourist attraction.

The late Larry Bernhoft, Area Wildlife Manager for the Department of Natural Resources for many years, had also taken an interest in the abundance and distribution of the orchids along the highway, and he mapped for several miles the location of each plant. Word must have gotten around because, before long, the Minnesota Department of Transportation became interested in designating Highway 11 between the fishing-resort cities of Baudette and Warroad as one of the state's Wildflower Routes—the first one. In June 1990, then-Governor Rudy Perpich was part of a grand tour that included ribbon-cutting ceremonies at each community on that stretch of Highway 11, celebrating the designation of the Route. Celeste LaValla and other wildflower enthusiasts had such a great time planning and taking part in that first celebration, that it became a yearly event.

**The state flower.**—The showy lady's-slipper, the centerpiece of this northern wildflower route, had been designated in 1902 as Minnesota's state flower. It is one of the state's 42 species of native orchids and is found in open, wet places in the north and east. Its scientific name is *Cypripedium reginae*, which comes from the Greek words *Cypris* (Venus) and *pedilon* (slipper) and the Latin word *regina* (queen). (go to page 8, *Wildflower...*)

## Garden biodiversity

Biodiversity has been a popular theme for several of our regular programs as well as topics in magazine articles. Ecologists are studying biodiversity in prairie, forest, and aquatic, even agricultural, habitats. And many biologists report the importance of biodiversity in our rain forests. But is not biodiversity applicable also to our backyard gardens?

Our backyard acreage becomes important as the wilderness area shrinks. So gardeners have an important role in preserving biodiversity. However, gardeners often restrict their plantings to two or three dozen species. "No wonder botanists are concerned about long-term survival of almost 4,300, about 20 percent, of this country's native species—plants that are critical habitat for countless other creatures" writes Janet Marinelli of the Brooklyn Botanic Garden.

In fact, she has edited a new work entitled *Going Native—Biodiversity in our Own Backyard*, published by the Brooklyn Botanic Garden. This book suggests that we re-create native habitats in our backyards that reflect the richness of the flora that is vanishing from our lands.

"What is a Biodiverse Garden?" is the title of the first chapter. Marinelli states that "Our current system of scattered nature preserves in a larger suburban landscape is not working as a biological safety net." To help preserve native species, we can emphasize planting of diverse native species and we of the MNPS do promote seed exchange of native plants as well as promote an annual plant sale in May. Perhaps we could do more.

In nine additional chapters America's top native landscape designers present sample biodiverse gardens each of which includes an extensive plant list for each region of the United States.

This 112-page book sells for \$6.95 and can be obtained from bookstores or ordered from the Brooklyn Botanic Garden, 1000 Washington Avenue, Brooklyn NY 11225, or call (718) 941-4044, ext. 260 or 261.

## NEWS AND ANNOUNCEMENTS Nine State Parks and Trails Projects recommended

The Legislative Commission on Minnesota Resources (LCMR) recommended funding of \$11,536,000 for nine projects for state acquisition and development of parks, trails, and water access for both boaters and non-boaters. Of some 500 proposals received LCMR recommended 175 projects.—*LCMR Newsletter*, No. 8, Fall 1994.

## MNPS Display Board Use

All members are welcome to show our display board at events, museums, and schools, if an attendant is present or it is safely displayed. This 3 by 5 foot, 2-sided board holds information on the Society, native plants, and stewardship. Call Don Knutson if you want to use it.

## Plant photographic exhibit entry deadline is April 19

The Minnesota Botany International Exhibition of Photography has a closing entry date of 19 April 1995. The slide judging will be held Saturday, 23 April, 9 AM at St. George's Episcopal Church, 5224 Minnetonka Blvd. in St. Louis Park.

This local exhibition is sponsored by the Minnesota Nature Photography Club and selected slides are shown at the 3 May meeting of the Minnesota Native Plant Society. The entry fee for 4 slides is \$5.00. Call Terry or Kathleen Schuller for entry form at

A symposium on *The Theory and Practice of Landscape Ecology* will be held 22-26 April 1995 at the Radisson Hotel Metrodome, 615 Washington Ave., SE, Minneapolis. For details, contact Nancy Grubb

## The Minnesota Native Plant Society

Minnesota Plant Press  
Thor Kommedahl, editor

Membership dues are \$10 per year for regular members and includes subscription to the newsletter; dues for students and seniors are \$8, for family \$12, for institutions \$20, and donors \$25. Checks can be made out to: Minnesota Native Plant Society, and sent to: Minnesota Native Plant Society, 220 Biological Sciences Center, 1445 Gortner Avenue, St. Paul, MN 55108.

Four issues are published each year.

## MNPS Board of Directors

President: Rebecca Schirber

Vice-President: Diane Hilscher,

Treasurer: Ruth Phipps,

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Members:  
Arden Aarnestad,

Nancy Albrecht,

Char Bezanson,

Chase Cornelius,

Rick Jannett,

Esther McLaughlin,

Val O'Malley,

Roy Robison,

The Minnesota Native Plant Society is a tax-exempt 501 c3 organization as determined by the US Internal Revenue Service.

## Briefs from the Board

•Roy Robison volunteered to chair the new Outreach Committee.

•The Bylaws have been corrected and retyped, and copies will be included in new member packets.

•MNPS lecture posters were printed with suggestions for mailing, e.g., to nature centers and colleges.

•Board sentiment favored a metropolitan location for a symposium.

•MNPS agreed to cosponsor and support the Minnesota Landscape Arboretum prairie brochure.

•A handbook is being prepared by Rick Jannett, and a preliminary copy was reviewed.

•A 7-member committee was proposed whose charge was to study both long- and short-term goals.

•Attendance in January was 100, and in February 69.

### Financial report for 1994

|                                 |                   |
|---------------------------------|-------------------|
| Cash on hand 1 January 1994     | \$ 3619.95        |
| Income during 1994              | 7958.32           |
| Total cash                      | 11578.27          |
| Expenses during 1994            | 8286.08           |
| Transferred from checking to CD | 1393.57           |
| Balance on hand 31 December     | 1898.62*          |
| <b>Income</b>                   |                   |
| Membership & Donations          | \$ 3049.00        |
| Symposium                       | 1760.00           |
| Book (Orchids); member purchase | 2502.00           |
| Plant sale                      | 281.00            |
| Refund (overpaid bill)          | 260.51            |
| MN Hort Society speaker         | 35.00             |
| State flower show               | 25.00             |
| Bank interest                   | 45.81             |
| <b>Total income</b>             | <b>\$ 7958.32</b> |
| <b>Expenses</b>                 |                   |
| Printing & copies               | \$ 2301.39        |
| Postage                         | 623.87            |
| Speakers & articles written     | 650.00            |
| Symposium                       | 1006.25           |
| Eats                            | 611.93            |
| Books acquired to sell          | 2400.00           |
| Secretary                       | 304.00            |
| Prairie Day donation            | 100.00            |
| Retreat                         | 87.96             |
| Magazine ad                     | 30.00             |
| Phone calls                     | 21.23             |
| <b>Total expenses</b>           | <b>\$ 8286.08</b> |

\*Plus CDs at TCF:  
\$613 for 13 months @ 4.67% due 13 July 1996;  
\$1129 for 23 months @ 4.92% due 9 April 1996;  
\$2500 for 23 months due 8 July 1996.

—Ruth Phipps, Treasurer

## Spring Field Trips

Nancy Albrecht

**1 Spring Wildflower Search in LeSueur County.** Saturday April 29, 1995, 10 AM. Joint event with *Friends of the Minnesota Valley*, near Henderson. Explore a mile-long, wooded ravine at Sunny Heights farm—an 1854 homestead covering more than 600 acres enrolled in the Friends' Heritage Registry. The county has dedicated 350 acres as a wildlife refuge. There are level trails and steep slopes. The owner will share history of the area and show locations of orchids. Meet at the farmstead (1.5 hour drive from Twin Cities). Bring lunch, canteen, field guides, and notebook. Birders bring binoculars. Restroom facilities limited. For reservations and directions, call Ann Haines.

**2 Snowshoeing at Tettegouche State Park.** Saturday March 4, 1995, 12:30 to 5 PM. Bring snowshoes (or rent from store). Chel Anderson, ecologist and botanist, will be the leader. Meet at rest area and entrance to Tettegouche State Park, 4.5 miles northeast of Silver Bay on US Highway 61. Reservations required; the fee is \$5.

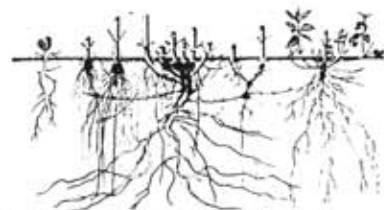
**3 Herbarium Tour.** University of Minnesota, Biological Sciences Building, St. Paul Campus. Wednesday March 15, 1995, 3:30 to 5 PM. Tour the herbarium with Curator Dr. Anita Cholewa. Reservations required; the fee is \$5.

**4 Warblers and Wildflowers.** Nerstrand Big Woods State Park, Wednesdays, April 26 and May 3, 1995, 7:30 to 9:30 AM. Tree identification and bird watching; wildflowers. Leaders Kim Chapman and Nancy Falkum and volunteer Kathryn Cassem. This park is 2 miles west of Nerstrand on County Road 40. Reservations required; park entry fee but no trip fee.

**5 Spring Wildflower Hike and Work Party.** Interstate State Park, Minnesota, Saturday, May 6, 10 AM. Meet Dave Crawford, State Park Naturalist at campground parking lot for a spring wildflower hike on the Curtain Falls Trail. Bring lunch and stay for a work party beginning at 1 PM to remove woody invaders from endangered rock outcrop prairies. Bring good walking shoes—the trail is 1.5 miles and steep—and work gloves. Reservations required. Call Dave

**6 Gardeners' Wildflower Weekend.** Deep Portage, Friday, June 16 to Sunday June 18. Enjoy a weekend in northern Minnesota at this unique learning and conference center located at Hackensack. The tour starts at the metro area with garden stops and will focus on wildflowers, northern forests and watersheds; experience classroom settings and guided hikes plus visit to local gardener's personal wildflower collection. Minnesota Horticultural Society and the Federated Garden Clubs of Minnesota are sponsors. Reservations required by May 25; cost is \$130 (includes coach bus, accommodations, meals, tours). For details, contact Mary Olson at

Vi Hague at  
or MSHS office at



**The Spring Symposium on Minnesota's Coniferous Forest Biome**, will be held Saturday, 1 April 1995 at the **Belwin Outdoor Education Center**, near Afton. Plan to bring a bag lunch, and we will eat and look at demonstrations and displays at noon. Volunteers to set up and clean up are wanted. Look for symposium brochure in the mail for registration.—Esther McLaughlin



## Giant Reed Grass

Giant reed grass [or giant reed] (*Phragmites australis* [Cav.] Steud.) is a member of the Gramineae and is a common, native species of Minnesota's wetlands. It was known earlier as *P. communis*. *Phragmites* means "hedgew-dweller" apparently referring to a common habitat, whereas *australis* means "southern". The former epithet of *communis* means "growing in clumps, common", which is applicable to this species. It is a stout perennial 2-4 m tall, typically growing vegetatively to form large colonies by rhizomes or stolons. A reed grass stolon measuring 13 m long was cited by Edward Voss, in *Michigan Flora*.

Giant reed grass produces a large inflorescence (20-40 cm) that takes on a feathery appearance when mature because of long, silky hairs. Spikelets are 3 to 7 flowered, but seeds are frequently sterile. Leaves are 1 to 5 cm broad and pennant-like. *Phragmites* is almost always found in wetlands ranging from wet meadows, to tamarack swamps, calcareous fens, and, most frequently, in shallow to deep marshes. It will grow in water nearly 2 m deep, but more typically in water from a few centimeters to 1 m deep. Few grasses can be confused with mature *Phragmites*. Wild rice (*Zizania aquatica*) is also a large, 2 to 3-cm-tall grass of aquatic habitats, but it is an annual with shallow roots—no stout rhizomes. Furthermore, wild rice has unisexual spikelets that are in separate parts of the inflorescence.

Along the Gulf and Atlantic coasts, *Phragmites* is often viewed as a weed because it can aggressively invade and dominate wetlands. The US Fish and Wildlife Service and other agencies have undertaken major efforts to control this grass, even by aerial spraying with herbicides.

In the Midwest, little attention has been given to *Phragmites* in this regard; however, in the lower Minnesota River valley, *Phragmites* is becoming dominant. Most

disturbing is the ability of *Phragmites*, by means of its rhizomes and stolons, to spread across high-quality sedge meadow and calcareous fen communities and crowd out these species. While many attempts have been made to control purple loosestrife (*Lythrum salicaria*), *Phragmites* is doing the same thing that purple loosestrife does—invading, dominating, and forming extensive monotypes. The *Phragmites* invasion in the lower Minnesota River valley apparently started in the 1970s. One hypothesis is that an aggressive, coastal strain of giant reed grass has been introduced since the 9-foot navigation channel was dredged up to the city of Savage, in the 1960s. Just as commercial navigation in the Great Lakes inadvertently introduced several exotic species, perhaps the exchange of commodities carried by barges traversing the navigation network between the Gulf States, Mississippi River, and lower Minnesota River has introduced a coastal strain of giant reed grass. It is an interesting hypothesis.

I have been monitoring a study plot within the Savage Fen Scientific and Natural Area to measure how rapidly *Phragmites* is invading a calcareous fen community of sterile sedge (*Carex sterilis*), fen muhly grass (*Muhlenbergia glomerata*), shrubby cinquefoil (*Potentilla fruticosa*), valerian (*Valeriana edulis* var. *ciliata*), white lady's-slipper (*Cypripedium candidum*), and other fen species. In the first 3 years, *Phragmites* has advanced up to 2 m into the calcareous fen community at 13 of 21 stations, consisting of 123 new aerial shoots, which confirms 15 years of observations that *Phragmites* can slowly and steadily invade established fen communities. Whereas numerous species are found in calcareous fen communities (including special and state-listed threatened species), few species, e.g. stinging nettle (*Urtica dioica*), are found within large *Phragmites* colonies—hence our concern for loss of fen and sedge meadows and the need to find ways to control giant reed.

## Botanical potpourri

### GLEANINGS FROM NEWSLETTERS

- Putting black walnuts in a bench vise and screwing the clamp until the shell cracks is a safe way to shell them according to Dan Anderson. With a pair of diagonal pliers the shell can be snipped away to expose the nutmeats. (*Indiana Native Plant & Wildflower News*, Winter 1994)

- Symmetry improves a flower's reproductive powers. The more symmetrical the flower, the more nectar it produces and the better source of food for insects who selectively seek out such flowers according to A.P. Møller and M. Eriksson at Uppsala University, Sweden. (*Science News* 147[3]:46, 1995)

- Tree species diversity increases after a forest is disturbed, in most forest types, report M. Vasievich and S. Hobrla at the North Central Forests station in East Lansing, Michigan. (*NC News*, November 1994)

- Three more tracts of land (240 acres) have been added to Nerstrand Woods by the Minnesota Chapter of Nature Conservancy. This area represents the largest remaining block of the original Big Woods in Minnesota. (*The Nature Conservancy*, Minnesota Chapter Winter 1995)

- Exposure to electromagnetic radiation from power lines seems to increase growth of aspen, red maple and red pine, as well as algae in streams in Michigan according to Dave Reed of Michigan Technological University and Thomas Burton of Michigan State University. (*Science* 267:451, 1995)

- To study biodiversity, the National Biological Survey proposes GAP (Gap Analysis Project) which uses overlays of maps of 1) species distributions, 2) vegetation, and 3) ownership, to identify species richness and areas needing protection (gaps). (*Plant Science Bulletin* 40 [4]: 119-121, 1994)

## Benefits of Growing Native Prairie Grasses

by Bettina Darveaux

There are many benefits from using native prairie grasses along Minnesota roadsides as well as in small-scale landscaping. Native prairie grasses were found to be successful in competing with leafy spurge (*Euphorbia esula*), thereby reducing the reliance on herbicides to control this noxious weed along Minnesota roadsides. The recent use of native prairie grasses on the shoulders and in slopes of highways, where elevated salt concentration in the soil is a factor, looks promising in providing vegetative cover in this critical environment. The use of native prairie grasses in small-scale landscaping provides a low-maintenance, esthetically pleasing garden alternative.

The use of native vegetation along roadsides has many advantages, one of which is the potential to provide better competition with invading weeds. In some recent research, we explored the ability of native prairie grasses to compete with leafy spurge using an integrated vegetation management approach. Field experiments were located in leafy spurge-infested areas and consisted of plots seeded with various perennial grasses in monoculture and in combinations. The effects of both the grass and herbicide treatments on the above-ground cover of leafy spurge were evaluated.

In the grass treatments the native prairie grasses little bluestem (*Schizachyrium scoparium*), side-oats grama (*Bouteloua curtipendula*), and buffalograss (*Buchloe dactyloides*) were well established and they significantly reduced the coverage by leafy spurge. The herbicide treatments picloram at 1.0 lb/acre and imazethapyr at 0.25 lb/acre effectively controlled leafy spurge but only for about 1 year. The use of native prairie grasses as part of an integrated vegetation management program is a feasible long-term approach to control leafy spurge along highway rights-of-way in Minnesota.

Vegetation must be maintained

adjacent to highway rights-of-way to control soil erosion, reduce hazards to motorists, improve highway appearance, and improve water flow to ditches or drainages. Cool-season, introduced grasses such as species of *Bromus* or *Poa* have traditionally been planted adjacent to roadways in Minnesota, but are unable to persist in this extremely harsh and very salty roadside environment. Short-statured native prairie grasses are currently being considered by the Minnesota Department of Transportation for this application because these grasses have many characteristics suitable for roadsides.

Some of these characteristics include good seed germination to give an initial flush of growth from overwintering plants (that typically occurs in late May or June after roadside salt accumulations have been flushed from soil by spring rains); deep root systems that enable plants to reduce soil erosion; and a generally short plant that reduces the need for frequent mowing. Both laboratory and field experiments are currently being done to evaluate native short grass prairie species used in several recently developed Mn/DOT roadside seed mixtures for their ability to germinate and provide adequate vegetative cover in the highly sodic, poor soils of highway slopes.

In addition to their usefulness along roadsides, native prairie grasses are also attractive and suitable for the garden. The native grasses provide interesting color and textures throughout the entire year, even in winter. After native prairie grasses have become established, which can take approximately 2-3 years, they require little maintenance and can provide years of seasonal interest.

*This is a summary of a presentation to the Minnesota Native Plant Society on 4 January 1995. Bettina is in the Plant Biology Department at the University of Minnesota, St. Paul.*

## Old-growth forests are under study in Minnesota and Wisconsin

In Minnesota, old-growth forests are being studied at the Lowry Woods, in western Hennepin County. The objective of investigators Cindy Hale of the University of Minnesota—Duluth and Kurt Rusterholz of the DNR Heritage Program, working with David Mladenoff of UMD, is to develop descriptions of the structure and composition of old-growth maple-basswood forests, oak forests, and black ash swamp forests. These forests are to be compared with younger, more disturbed forests.

In Wisconsin, old-growth forests dominated much of the northern state's landscape before the European settlers came, but now only small fragments remain. Craig Lorimer, Sally Dahir and Matt Singer of the University of Wisconsin's forestry department are investigating hemlock-hardwood forest growth in northeast Wisconsin and the Upper Peninsula of Michigan. Their research is focused on identifying characteristics of existing old-growth forests as a blueprint for restoring younger stands.

Openings or gaps in the forest canopy that occur when trees die create a multilayered vegetation, a feature often missing in second-growth stands. Such openings are important to some bird species. Moreover, yellow birch among other species requires gaps for their survival. Gaps can vary in size from 10 to 1,400 square feet, and the rate of formation is about 7 percent of the stand area per decade, according to Sally Dahir. This means that an entire forest can go through a nearly complete turnover about every 140 years.—*Material selected from the Nature Conservancy, Minnesota Chapter Newsletter, and the University of Wisconsin College of Agriculture and Life Sciences Quarterly, Winter 1994.*



## Minnesota Land Trust: Preserving Native Landscapes

by Renay Leone

The Minnesota Land Trust, like the nearly 1,000 other land trusts across the country, is a non-profit, tax-exempt organization dedicated to the preservation of open space. Like many other land trusts, we were formed to protect a certain area, farmland and bluffs in Washington County (in 1991), but after 2 years we expanded to become the Minnesota Land Trust, with chapters to be formed across the state. Currently, there are three chapters: Central Minnesota, with its focus on St. Cloud, Paynesville and Alexandria areas; East Metro, including Washington and Ramsey counties, plus parts of Chisago and Dakota counties; and West Metro, with Hennepin and Carver, plus part of Scott, counties as its territory.

The main focus of our work is to protect land from damaging development, to work with private landowners, local governments, corporations, and developers. We are not a governmental entity, so all efforts are voluntary and involve private agreements.

By far the most popular tool we use is the *conservation easement*. Unlike other easements for access or utilities or the restrictive covenants found in suburban subdivisions, the conservation easement covers the entire property and lasts forever. It prohibits subdivision of the parcel or development into multiple residential or commercial lots. Beyond that, a landowner can specify what he or she wants to be included in the easement. If the property is a family farm, there may be a desire to continue farming most of the tillable acres, with certain sensitive areas of woods or bog with native plants, set aside and kept as-is. The easement can allow 1 or 2 additional houses to be built, if that is important to the landowner and it does not negatively affect the conservation value to be protected.

There are several tax benefits available to a landowner who donates an easement over his or her property. First, an income tax deduction is available for the charitable donation of the easement. An appraisal must be done to determine the difference in value of the property before and after the easement is signed. That difference is considered a charitable donation on the landowner's tax return. Other tax benefits can include a reduction in property tax, depending on the current zoning and city or county tax base, and reduction or elimination of estate tax. All these benefits depend on the landowner's individual tax situation and should be discussed with an attorney or tax planner.

There are many opportunities for conservation easements to accomplish a landowner's goals. They can even help in situations where a landowner wants to donate land to a government agency but isn't convinced the land will be kept in its natural state. The easement terms apply to the land no matter who owns it. As the holder of the easement, The Minnesota Land Trust is obligated to enforce its terms. We monitor all easement properties at least yearly and will take whatever action is necessary to stop any violation of the easement terms.

Some of the parcels on which we currently have easements include: a 255-acre farm next to a river near Alexandria, 50 acres of woods and meadow in western Hennepin County, 5.5 acres of oak woods in the middle of Bloomington, and the Belwin Nature Center in Afton. It is not required that property contain endangered or threatened plants or animals for the land trust to consider it worth protecting. Any undisturbed open space—woods, wetlands, prairie, bluffs, lakeshore or farmland—will be considered.

For more information, call or write: Minnesota Land Trust, 70 N. 22nd Avenue, Minneapolis, MN 55411; (612) 522-3743.

## Gateway Trail Wildflower Project

by Gary Perrault

One of the projects I've been designing over the past year will soon give bike riders and roller bladers new vistas as they travel along the 19-mile asphalt Gateway Trail.

During the summer of 1994, Phase 1 was started by creating a series of wildflower zones along the Gateway Trail through North St. Paul along a 1-mile strip parallel to Highway 36. The Wildflower Project was initiated to beautify the trail and entrances to North St. Paul. This became a mile-long urban wildflower demonstration area along what used to be the Soo Line Railroad. The Gateway Trail is the most used state trail in Minnesota.

When it is finished, 4-5 acres of vegetation, some previously mowed, will have been converted into native grasses and wildflowers. Trail users interviewed last spring had described this section of trail as one of the worst areas because of its appearance, traffic noise, and lack of "natural" scenery.

Science teachers from North High School are using the trail areas as outdoor classrooms. Students have gained hands-on experience in planting 1,100 wildflowers last October and in sowing seed on 10,000 square feet of land. Students in other classes have sampled soils to study soil profiles and textures. Still other students have been measuring distances and elevations to learn about land contours. This spring the project will continue with more planting and seeding. Biology students will start several species of wildflower seeds in class to learn about germination and growth rate.

Work on this project has had the support of many groups: MN DOT, DNR, City of North St. Paul, NE Metro Environmental Coalition, YMCA Earth Svc. Corp., North St. Paul Green, the North High School Science Department, Wakefield Garden Club, and the North St. Paul Business Association.

—Gary is an environmental horticulturist working with non-profit groups on project development and design

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Summary of a talk given at the February 1 meeting of the MNPS

## Update on the Endangered Species Act

The Endangered Species Act (ESA) is in danger of being dismantled under the title of *Job Creation and Wage Enhancement Act* (Title 8 of the Contract with America), according to Tim Eichenberg, of the Center for Marine Conservation. He reported that this action would 1) prevent government agencies from listing species as threatened or endangered; 2) make virtually impossible the designation of critical habitat to protect vital breeding, and migration areas of endangered wildlife; and 3) block regulations which prevent public resources, such as fisheries, from being over-exploited.

The Merchant Marine and Fisheries Committee has had jurisdiction over the Endangered Species Act for the past 21 years of the law's existence. Gerry Studds, representative from Massachusetts and sponsor of HR 2043 has chaired this committee for the past 2 years. In the reorganization of the House of Representatives, one of the first committees selected for dismantling was the Merchant Marine, and members of this committee will be shuffled to other committees.

Don Young, Representative from Arkansas, is the new chair of the *Public Lands and Resources Committee* (formerly Natural Resources), and this committee will have jurisdiction over the Endangered Species Act in the House of Representatives.

John Chafee, Senator from Rhode Island will chair the Senate Environment and Public Works Committee. Senator Chafee has strongly supported the ESA in the past and was the leading cosponsor of S.921 in the previous Congress.

Those who want to support ESA should write to Don Young in the House of Representatives, and John Chafee in the Senate to urge passage of the Endangered Species Act. Some think that the best hope of saving ESA is in the Senate.

The Endangered Species Act can protect the United States in many ways according to the Endangered Species Coalition of the Audubon Society. Some of these ways are as follows:

- *The medicinal value of species.* ESA safeguards species that we rely on for medicines, even for cures not yet discovered.

- *Moral obligation.* ESA helps ensure a healthy environment for future generations.

- *Ecosystem protection.* ESA protects forests that improve air quality and wetlands that filter water.

- *Early warning systems.* Threats to human existence are identified.

- *Private property.* ESA protects private property from corporations that benefit from destruction of the natural world.

- *Economic value.* ESA protects jobs and strengthens the economy.

One can write to each of our two senators and our representative as follows: The Honorable (name of senator), US Senate, Washington, DC 20510; and The Honorable (name of representative), US House of Representatives, Washington, DC 20515.

The Endangered Species Coalition comprises 164 groups.

### Minnesota has a list of threatened and endangered species

Revisions recommended in 1994 will be finalized in February 1995 and published in the state register. The *Minnesota Endangered Species Act* (M.S. 84.0895) requires that the DNR create and maintain this list, and that DNR consider revisions to the list every 3 years.

To obtain a copy of the current *List of Endangered, Threatened, and Special Concern Species*, a set of proposed revisions, and/or a copy of the *Endangered Species Act*, write to Richard Baker, Section of Wildlife, Minnesota Department of Natural Resources, Box 7, Lafayette Road, St. Paul, MN 55155; (612) 297-3764.

## Plant Lore

### What are bluets?

Bluets are plants in the madder family (Rubiaceae), closely related to bedstraw, with the genus name of *Hedyotis*, previously known as *Houstonia*. It has many other common names, e.g., Quaker-ladies or Quaker-bonnets. Plants are 4 to 8 inches tall.

### When do bluets bloom?

These hardy perennials flower in midspring and get an early start from rosettes only an inch or two in diameter that have overwintered. A single flower stalk grows from the center of the rosette.

### What are the flowers like?

They are usually white or pale purple, even deep purple, depending on species, and of two kinds. In one type, the male parts are long and the female parts are short. On the other type, the reverse occurs. On any given plant there is only one kind of flower, apparently to ensure cross pollination.

### How are bluets pollinated?

One of the many insects that visit bluets is the bee fly that can hover over the blossom like a hummingbird. It resembles a small bumblebee and its mouthparts can reach into the long tubes to suck out the nectar.

### What kinds of fruits do bluets produce?

Bluets produce small capsules with two chambers, each of which is filled with tiny, loose, black seeds. Winds shake the pods to disperse seeds.

### Do plants reproduce only by seeds?

No, it also produces rhizomes that produce new rosettes in fall or the next spring.

### Where are bluets found?

They usually grow in dry, sandy or rocky, undisturbed, open areas in the state.



## Environmental concerns are addressed in memo on federally landscaped grounds

A presidential memorandum on *Environmentally and Economically Beneficial Practices on Federally Landscaped Grounds* was released for comment in a notice published in the *Federal Register*. Comments were received from many groups that included state and federal agencies, conservation groups, municipalities, and native plant societies.

The priorities in the memorandum are to:

- Use regionally native plants.
- Design, use or promote construction practices that minimize adverse effects on the natural habitat.
- Seek to prevent pollution by, among other things, reducing fertilizer and pesticide use, using integrated pest management techniques, recycling green waste and minimizing runoff.
- Implement water-efficient practices, such as the use of mulches, efficient irrigation systems, audits to determine exact landscaping water-use needs, recycled or reclaimed water and plants in a manner that conserves water and controls erosion.
- Create outdoor demonstrations incorporating native plants, as well as pollution prevention and water conservation techniques, to promote awareness of the environmental and economic benefits of implementing this directive.

Agencies are encouraged to develop other methods for sharing information on landscaping advances with interested nonfederal parties. (*Landscape Architecture News Digest* 27[1]:1995)

Starflower (*Trientalis borealis*) has an elegant, dainty silvery flower that grows in woods alongside of violets—some call it May-star. It is a perennial rhizotomous herb native to Minnesota.

## Wildflower Day in Williams

(continued from page 1)

**Flower structure.**—The feature of the plant that draws our attention immediately is its unusual-looking flower. As one of the most evolutionarily advanced flowers of the world, the lady's-slipper flower structure includes lots of fusing and twisting of parts, all to accommodate the small animals that pollinate the plant. The most striking part of the flower is the lip (the part that someone thought looked like a "lady's slipper"), which is actually an enlarged, inflated petal.

**Slow growth.**—Years ago, when my mother was a small-town elementary school teacher, someone brought her a huge bouquet of showy lady's-slippers. She was at once amazed and dismayed because she knew about another unusual feature of these species: they have a very long, complex, and difficult-to-duplicate process of developing from seed. The tiny orchid seeds require an association with a specific fungus in the soil to germinate and grow, and it takes 15 to 20 years for seedlings to develop into mature plants. Fortunately, once a plant develops it lives for many years unless someone uproots it. For this reason, these orchids need all the help that they can get and are protected by state law. Luckily, my mother's young pupil didn't uproot the plants, but he did prevent the plants from producing seeds in that year.

**Habitat.**—Low, flat land crisscrossed by sandy ridges, compliments of glacial Lake Agassiz thousands of years ago, makes Lake of the Woods County ideal orchid country. Although lady's-slippers are found all along Highway 11, as well as along other roads in the county, there seems to be a concentration of them near the city of Williams. Here, in this city of 300 people located near the ancient Campbell Beach of glacial Lake Agassiz, drinking water is available from a flowing well at Lady'slipper Park. Four miles to the west, a state forest campground—Blueberry Hill—is located in a stand of jack pine on the sandy beach ridge. Zippel Bay State Park, on the

shore of the Lake of the Woods, 10 miles northeast of Williams, was abandoned by early settlers disgusted with its sandy soils; it is now a public playground with several campgrounds, a boat ramp, a swimming beach, and hiking trails.

**Wildflower Day.**—During the week of bloom for showy lady's-slippers, about the third week in June, a day is set aside for reveling in their beauty and abundance: it is called Williams Wildflower Day. This event is organized by the Williams Gardeners, with members from Baudette to Warroad, and this Day attracts nature buffs from across the state. The afternoon celebration includes a slide program on wildflowers, refreshments by garden club members, a guided wildflower tour that includes orchids and other wildflowers in bloom, and an exhibit of paintings by local wildlife and wildflower artist Thomas Parr Williamson. There is a drawing for one of his prints. All then adjourn to the roads and ditches to admire Nature's handiwork, and look for ever-larger clusters of blossoms, snapping pictures of "the best ones", perhaps coaxing a new friend to guide the trip to a rare cluster of all-white "showies".

This year the Wildflower Day celebration will take place on Saturday, June 17, from 1 to 4 PM at St. Joseph's Catholic Church in Williams. If you must miss the celebration, but would like to see the showy display of lady's-slippers, be sure to visit them during their blooming period, from mid-June to early July. For more information about this Day, call Celeste LaVilla at The Rustic Planter, in Roseau (218) 386-2744. Williams is 15 miles west of Baudette.

For more information on the showy lady's-slipper, consult Welby R. Smith's book, *Orchids of Minnesota*, University of Minnesota Press. Also, see *Vascular Plants of Minnesota*, by G.B. Ownbey and T. Morley, University of Minnesota Press.(ed.)



# Illustrated Field Guides for Minnesota Wildflower Watchers

prepared by Char Bezanson, St. Olaf College

This is a list of guides useful for identifying plants in Minnesota and Eastern North America

## *Guides specific for Minnesota or the Great Lakes Region*

•**Northland Wild Flowers: A Guide for the Minnesota Region.** Moyle and Moyle, University of Minnesota Press, 1977. Especially good for spring flowers. 300 photos.

•**Wildflowers and Weeds.** Courtenay and Zimmerman, Prentice-Hall, 1978. 700 small photos. No grasses.

•**Roadside Plants and Flowers.** Edsall, University of Wisconsin Press, 1985. Weeds and native plants of Midwest and Great Lakes areas. Approximately 125 plants and more than 250 photos.

•**Wildflowers of the Northern Great Plains.** Vance, Jowsey and McLean, University of Minnesota Press, 1984. 400 species, 650 photos. Good for prairie plants; no grasses.

•**Wildflowers of the Tallgrass Prairie: The Upper Midwest.** Runkel and Roosa, Iowa University Press, 1989. 130 prairie plants including grasses. Plants arranged in order of bloom.

•**Common Wildflowers of Minnesota.** Monserud and Ownbey, University of Minnesota Press, 1971. Out-of-print, but search used bookstores. 306 plants, no grasses; line drawings.

•**Pods: Wildflowers and Weeds in Their Final Beauty.** Embertson and Conrader, Charles Scribner, 1979. More than 150 species, dry fruits autumn and winter. Photos of plant in flower, dry fruit and inflorescence, and plant used in dry arrangements.

•**Ferns of Minnesota.** Tryon, University of Minnesota Press, 1980. Keys and color photos, line drawings, and distribution maps.

•**Orchids of Minnesota.** Smith and Wong, University of Minnesota Press, 1993. Field guide and scholarly treatise. 43 species in Minnesota. Color photos, line drawings, distribution maps. Biology of orchids.

•**Vascular Plants of Minnesota: A Checklist and Atlas.** Ownbey and Morley, University of Minnesota Press, 1991. Not a field guide. Book of distribution maps of Minnesota plants.

## *Guides to Eastern North America, including Minnesota*

•**The Audubon Society Field Guide to North American Wildflowers: Eastern Region.** Niering and Olmstead, Alfred Knopf, 1979. East coast to Rocky Mountains. A photographic guide; 700 flower and fruit photos, arranged by color.

•**Wildflowers: Northeastern/Northcentral North America.** Peterson and McKenny, Houghton-Mifflin, 1968. USA and adjacent Canada. 1300 species arranged by flower color and shape, line drawings. Field recognition characters. Excludes trees, shrubs, grasses and ferns.

### Remember

No one field guide is appropriate for all uses. Minnesota is located at the juncture of the Eastern Deciduous Forest and the Great Plains grasslands, so guides that cover eastern United states may be sketchy for prairie plants. Similarly, western plant guides may not include woodland species. Technical keys are useful for professionals and serious hobbyists, but often do not provide for ways to check identification against a picture. Many guides are incomplete. The solution may be to use several guides. Most of these sell for \$10 to \$20 and are available at bookstores at the University of Minnesota or the Minnesota Valley National Wildlife Refuge bookstore, or other bookstores by special order. The classical manuals are **Gray's Manual of Botany** by Fernald (8th edition) or **Manual of Vascular Plants** by Gleason and Cronquist.—Char Bezanson

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