Monthly meetings

Minnesota Valley National Wildlife Refuge
Visitor Center, 3815 East 80th St.
Bloomington, MN 55425-1600
952-854-5900

6:30 p.m. — Building east door opens
6:30 p.m. — Refreshments, information, Room A
7 – 9 p.m. — Program, society business
7:30 p.m. — Building door is locked
9:30 p.m. — Building closes

Programs

The MNPS meets the first Thursday in October, November, December, February, March, April, May, and June. Check the Web site for more program information.

May 6: “Recent Research on Little Bluestem (Andropogon scoparius);” Plant-of-the-Month: Little Bluestem, both by Mary Meyer.

June 3: “Native Ferns,” by Tom Bittinger; Annual plant sale. (See article on page 5.)

Spring Wildflower Guide

Do you know where to find wildflowers in the Twin City metro area? The MNPS booklet, Guide to Spring Wildflower Areas, Twin Cities Region, gives the locations and access rules of 42 parks and natural areas and lists many of the plants that may be seen in each location. The booklets cost $5 ($4 for members) and are available at all MNPS meetings.

MNPS Web site
http://www.stolaf.edu/depts/biology/mnps

MNPS e-mail: MNPS@HotPOP.com

MNPS Listserv

Send a message that includes the word “subscribe” or “unsubscribe” and your name in the body of the message to: mn-natpl-request@stolaf.edu

Interactive key to Minnesota’s woody plants being developed

by George Weiblin, University of Minnesota. He announced this new key during his talk at the Feb. 5 meeting.

An interactive key to the woody plants of Minnesota is being developed at the Bell Museum of Natural History at the University of Minnesota with the goal of providing an easy-to-use guide to identification of all woody plant species occurring in the state. Interactive keys have many advantages over traditional keys, and this one is designed to be accessible on the Web to anyone with a basic knowledge of botany. To use the key, go to http://geo.cbs.umn.edu/treekey/navikey.html

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Traditional keys involve a series of choices that divide organisms into smaller and smaller groups, eventually leading to a species description. Each choice leads further down a particular path, and users become lost if a wrong choice is made at any point. Keys can be very difficult if the user does not have complete information at hand, or is not skilled in the art. For example, suppose that a key asks whether a plant has fleshy fruits or dry fruits, but the plant in question has not yet flowered. Information technology provides a robust alternative in which users query a database according to whatever information is available.

What is unique about the Interactive Key to the Woody Plants of Minnesota is the web interface that allows anyone with a web browser free access to this identification tool. We hope to expand this resource from 277 species of woody plants to more than 4,000 species of plants and fungi recorded in the state. In the future we hope to enhance the key with digital images and information on leaves, twigs, flowers, fruits, and fungi.

We welcome your comments, corrections and suggestions, as we are still in the development phase of this project. Please send feedback to Dr. George Weiblen (gweiblen@umn.edu) or Dr. Anita Cholewa (chole001@tc.umn.edu).
New board members are elected

MNPS members elected two new board members and re-elected one current member at the March 4 meeting. Ken Arndt and Ron Huber will succeed Board Members Linda Huhn and Joel Dunnette in June. Jason Husveth was re-elected to the board. Officers will be elected at the June board meeting.

Ken Arndt is an urban forester for Pioneer Engineering and also does native plant salvage work. He is a graduate of the University of Minnesota.

Ron Huber does county survey work on beetles and lepidoptera for the state. He also identifies these insects for the Science Museum and University of Minnesota collections, as well as for various museum collections around the country. He has a great interest in natural resource uses and is learning more about native plants. Ron is a frequent attendee at our meetings.

Jason Husveth, our current president and field trip chair, is an ecologist with Critical Connections Ecological Services, Inc.

The MNPS Board of Directors has nine members who serve three-year terms. Those whose terms expire in 2005 are Karen Schik, Janet Larson and Doug Mensing. Those whose terms expire in 2006 are Shirley Mah Kooyman, Scott Milburn and Dianne Plunkett Latham. Treasurer David Johnson and Minnesota Plant Press Editor Gerry Drewry regularly attend the board meetings, which are open to all members.

Look it up on the Web

What plants will grow on different types of sites? The Minnesota Department of Transportation has answers, and now they are posted on the PlantSelector Web site. This interactive program contains data on more than 650 woody and herbaceous plants. Users may consider nearly 50 different site and plant traits while looking for a plant that is a perfect fit. You will find it at www.plantselector.dot.state.mn.us

Native Plants Online is the Lady Bird Johnson Wildflower Center resource for native plant information. It contains information about recommended native plant species, businesses and organizations in different states. Go to http://wildflower.avatartech.com/Plants_Online/Index2.html

Minnesota Native Plant Society’s purpose

(Abbreviated from the bylaws)

This organization is exclusively organized and operated for educational and scientific purposes, including the following:

1. Conservation of all native plants.
2. Continuing education of all members in the plant sciences.
3. Education of the public regarding environmental protection of plant life.
4. Encouragement of research and publications on plants native to Minnesota.
5. Study of legislation on Minnesota flora, vegetation and ecosystems.
6. Preservation of special plants, plant communities and scientific and natural areas.
7. Cooperation in programs concerned with the ecology of natural resources and scenic features.
8. Fellowship with all persons interested in native plants through meetings, lectures, workshops and field trips.

MNPS Board of Directors

President: Jason Husveth, cc@ecology@att.net

Vice-President: Linda Huhn, 612-374-1435.

Secretary: Joel Dunnette, dunnette.joel@mayo.edu

Shirley Mah Kooyman, shirley@arboretum.umn.edu

Janet Larson, janetlars@plink.com

Scott Milburn, smilburn@ccesinc.com

Douglas Mensing, dougm@appliedeco.com

Karen Schik, Secretary #2, kschik@fmr.org

Dianne Plunkett Latham, plunketttd@mn.rr.com

Treasurer: David Johnson, MNPS@HotPOP.com

Listserv Coordinator: Charles Umbanhowar, ccumb@stolaf.edu

Minnesota Plant Press editor: Gerry Drewry, 651-463-8006; fax, 651-463-7086; gdrewry@infionline.net

Technical or membership inquiries: MNPS@HotPOP.com
Welcome, new members

by Jason Husveth, president

Greetings, Native Plant Society members! Spring is finally here, and it’s time to start enjoying the native plants and natural areas that make Minnesota so special. The skunk cabbage is flowering, and I have heard that snow trillium is in bloom at Eloise Butler Wildflower Garden.

I am pleased to report that our 2004 Symposium, “Our Historic Landscape, The Ecology of Woodlands and Savannas in the Minneapolis / Saint Paul Metropolitan Area,” was a great success. I would like to especially thank all of our speakers, who graciously gave their time to prepare and present a varied and informative selection of topics concerning the ecology of these habitats. The society owes a debt of gratitude to all who contributed to the planning and preparation for the symposium.

In October 2003, Karen Schik took a lead role in planning and pulling together much of this year’s symposium. Shirley Mah Kooyman, Linda Huhn and I assisted Karen with the planning, arranging speakers, and advertising the symposium. A special thank you to Ron and Cathy Huber, who stepped in and masterfully handled the duties of registration when Shirley became ill. We are grateful to Ken Arndt, Janet Larson, Scott Milburn, Doug Mensing and many others who volunteered their time and energy on the day of the symposium to make sure everything went as smoothly as possible. Finally, a debt of gratitude to the Anoka Conservation District staff for generously allowing us the use of their computer projector when we were unable to get ours to work.

Maybe the most exciting thing about the symposium is that we had over 50 new memberships and membership renewals! If you are new to the society, I want to welcome you on behalf of the board and all of our members. If you are renewing after a brief hiatus, I want to welcome you all back to the society as well.

We currently have two field trips planned for the spring season, and several others in the works. Doug Mensing and Joel Dunnette have taken the lead on planning our Spring Wildflower Weekend in Whitewater State Park in southeastern Minnesota for the weekend of May 7 - 9. If you were unable to make the trip last year, I highly recommend you join us in exploring the flora of Whitewater State Park and Whitewater Wildlife Management Area. The spring ephemeral displays are magnificent.

Doug Mensing, Scott Milburn, and I will lead a day trip to the Louisville Swamp Management Unit of the Minnesota Valley National Wildlife Refuge on Saturday, May 22. Other members are working on organizing additional field trips throughout the summer. These will be announced at the May and June membership meetings, as well as on the MNPS Web site. Mark these dates on your calendar and join us in the field.

In addition to field trips, be sure to participate in our native plant sale, which will be held immediately following our June 3 meeting at the Minnesota Valley National Wildlife Refuge. We will hold the plant sale out of doors this year, to allow for more space to arrange and display the plants that our members donate.

There are many ideas in the works for the future of the society. I have begun discussing holding our regular monthly meetings through the summer, possibly on Saturdays, in various natural areas. This would provide opportunities for our membership to experience and learn about our native flora and natural areas first-hand in the field during the growing season. I would enjoy hearing from the membership regarding regular summer meetings starting in 2005. I consider it a privilege to serve as president of this diverse and growing society. I encourage each of you to contact me or a board member if you have ideas for ways to make the society even better. I hope you all enjoy the beautiful spring weather, and I look forward to seeing you at the monthly meetings and on this spring’s field trips.

Two field trips planned in May

MNPS members have organized two field trips in May. One is a weekend at Whitewater State Park, May 7 - 9; the other is a botany walk through Louisville Swamp Management Area, near Jordan, on May 22.

Doug Mensing and Joel Dunnette will lead several wildflower walks during the Spring Wildflower Weekend, May 7 – 9, at Whitewater State Park in southeastern Minnesota. The society has reserved camping area #2. Participants should bring their own camping equipment and food. The society is only providing the campsite and guides. A fee of $5 per person will be collected to cover the cost of the group campsite. For more information, contact Doug Mensing at dougm@appliedeco.com

Jason Husveth, Doug Mensing and Scott Milburn will lead the Louisville Swamp walk on May 22. It will begin at 9 a.m. at the trailhead, which is about 4.5 miles south of Shakopee. Take Hwy. 169 to 145th St, go past the Renaissance Festival entrance and cross the railroad tracks. The Louisville parking lot will be on your left. The walk will end at about 2 p.m., so bring a lunch. This event is limited to 30 participants. More details are on the MNPS Web site. To sign up, contact Jason Husveth at jhusveth@cesinc.com
2004 Symposium is a Great Success

By Karen Schik, Symposium Chair

The Minnesota Native Plant Society has a history of excellent annual symposia, and this year was no exception. On Saturday, March 27, nearly 160 participants packed the Bunker Hills Activity Center to attend “Our Historic Landscape: The Ecology of Woodlands and Savannas in the Minneapolis/St. Paul Metropolitan Area.”

The day got off to a rocky start with Powerpoint projector difficulties, the bane of new technology. Fortunately, staff from Anoka Conservation District saved the day by fetching their projector from their nearby office. Once underway, participants were treated to an entire day of thoroughly interesting and informative presentations. Hannah Dunlevitz became the first speaker, due to the technical difficulties. Her descriptions of savannas and woodlands provided an excellent overview of these communities and laid the groundwork for the following talks. No doubt there will be many new visitors this season to all the wonderful places she described where native savanna and woodland remnants can be found.

Dr. Cynthia Lane, Ecological Strategies, followed with a more detailed look at the insect world of savannas, especially focusing on the interesting life history of the karner blue butterfly, a state endangered species. Because savannas and woodlands are now rare plant communities in the state, they also harbor numerous rare plant species. Barb Delaney provided interesting details and wonderful photographs of many of those rare plants. John Moriarty, Ramsey County Parks and Recreation, finished the morning with a comprehensive view of most of the vertebrate animals that find residence in savannas and woodlands. He demonstrated how gophers are a keystone species. Many animals depend on them either as a food source or for the underground shelter they create.

After a wonderful lunch of organic food, the equipment was finally ready for our keynote speaker. Dr. Ed Cushing, University of Minnesota, gave a stimulating and intriguing geologic history of the plant communities. Using maps, he showed how they are very strongly tied to the soils in the area, which formed from different glacial processes. Oak barrens occur on sandy soils, maple-basswood forests occur on heavier till soils of sand, gravel and silty clay. Topography was also a strong influence, with prairie in flatter areas. Fire, which also shapes plant communities, was determined in part by the topography.

Steve Chapman gave an overview of native American uses for many native plants and showed how important their discoveries were to present day uses of plants. Some plants, such as wild rice, are more important regionally, but others, such as corn and squash, are used worldwide.

Degrading factors of woodlands and savannas was the next topic, presented by Doug Mensing, Applied Ecological Services. He gave a clear synopsis of the characteristics of a healthy system, causes of degradation, and subsequent effects. One interesting slide showed the dramatic decline of plant and bird species in natural communities after buckthorn invasion. Doug also outlined basic restoration and management strategies.

Kim Chapman, also from Applied Ecological Services, followed with a more philosophical view of lessons learned from savanna restorations in the Midwest. He introduced the term “polymorphous” to describe the changing nature of savannas and how this means different things to different people. He also discussed restoration efforts and showed how some components of the system are often overlooked. Forbs, for example, often regenerate well, but grasses and sedges do not. Ground cover also establishes well at dry sites, but not at mesic sites because there is more weed competition and damage from grazing.

Fred Harris wrapped up the day with a discussion of an oak savanna and prairie restoration project at Pine Bend Bluffs along the Mississippi River in Dakota County. The most challenging exotic plant to control at the site has been cheatgrass (Bromus tectorum). Carefully timed burning seemed to provide the best results.

In addition to the speakers, many people contributed huge amounts of time and energy to helping make the symposium a success. Special thanks go to Jason Husveth and Shirley Mah Kooyman, co-chairs of the symposium committee and MNPS board members. Jason, in particular, donated countless hours in many months of planning, organizing, and trouble-shooting. When Shirley became ill, Cathy and Ron Huber jumped in to take over the registration work. Board members Linda Huhn, Dianne Plunkett-Latham, Doug Mensing, Scott Milburn, Joel Dunnette, Ken Arndt and David Johnson all helped with preparation tasks and the event itself. Members who volunteered at the event include Kathy Colla, Dorothy Paddock, Mary Nolte, and Melissa Arikian. Many thanks also go to all the people who attended the event.

The result of all this good energy was that the society raised over $2,000 from the symposium and gained 58 members. These funds will go far toward continuing to promote outreach and education about Minnesota native plants.
Would you like some sawdust with that?

by Ethan Perry

Remember last year when the Minnesota Legislature threatened to prohibit the Minnesota Department of Transportation from using native seeds in roadside planting? Well, researchers from the University of Minnesota Department of Agronomy have published a study that demonstrates yet another benefit of roadside prairies: weed control. Dana Blumenthal and his colleagues compared weeds in plots of seven-year-old prairie restoration to plots of well-established old field on sandy soils. Weeds had declined by 94% in the restored plots. (Weeds were defined agriculturally, so old field grasses — Kentucky bluegrass and smooth brome — were not considered weeds, while some natives, such as ragweed and horseweed, were.)

These researchers also looked deeper into factors that give either weeds or prairie species a competitive advantage over the other. In a study that hasn’t been published yet, they added weed seeds to the same experimental plots. As expected from the first study, many fewer weeds became established in the prairie plots. When they added nitrogen to the soil, however, the benefits of restoration were reduced. Nitrogen is often a limiting nutrient for plants. The experiment suggests that prairies can exclude some weed species because prairie plants are better competitors for scarce nitrogen. When nitrogen is plentiful, the weeds have a better chance. This also explains why restoring prairie is often easier on sandy soil than on nitrogen-rich loam.

How can we use our knowledge of nitrogen to help restorations? In a third study, the researchers tilled various amounts of carbon (in the form of sawdust) into the soil before planting both prairie and weed seeds. Soil microbes respond to increased carbon by immobilizing nitrogen, reducing the amount available to plants. The highest level of carbon addition resulted in fewer weeds and more prairie.

Most other carbon enrichment experiments have not been so successful, but researchers at the U of M Department of Horticulture have just published a study of carbon enrichment to control reed canary grass. Rank mats of this grass have smothered acres and acres of wetlands across the Midwest. Laura Perry and her colleagues grew reed canary grass and a native sedge (Carex hysterocina) together in a greenhouse. In untreated wetland soil, reed canary grass had five times the biomass of the sedge, but when sawdust was added, the sedge was six times more abundant than the grass.

Is it just coincidence that of the few studies finding a benefit to carbon enrichment, two were conducted in Minnesota? Actually, no. Laura, who happens to be my sister, and Dana, who happens to be her husband, point out that they both used much greater amounts of carbon than previous studies. Even if adding carbon to soil proves impractical for actual restoration projects, we can still reduce nitrogen inputs in order to benefit native species. Buffer vegetation around wetlands can significantly reduce the amount of nitrogen reaching them in runoff. We can also try to minimize the amount of nitrogen released by burning fossil fuels, which then falls in the rain. But maybe, bizarre as it sounds, site preparation for some future restorations will include tilling sawdust into the soil.

Plant sale to be held outdoors

The annual MNPS native plant sale will be held June 3 at the Minnesota Valley National Wildlife Refuge. For the first time, the sale will be held outdoors, rain or shine.

Plants will be arranged on the low walls near the building entrance. They will be grouped according to habitat (sun or shade). Woody plants will be in a separate area. In order to provide more time for the sale, we need the cooperation of every member. The June meeting will start early, at 6:45 p.m. The sale will start at about 7:30 p.m., after Tom Bittinger’s talk on native ferns.

Plants must be delivered early. Bring your plants after 5 p.m. and no later than 7 p.m. Each plant must be individually potted and labeled. Include your name, the location where the plant was grown, the plant’s common and scientific names, and any other pertinent information, such as seed source. Do not put a price on the plant. However, you may designate special plants to be considered for the silent auction. Plants that arrive after 7 p.m. or are not potted and labeled on arrival may not make it into the sale.

Dave Crawford, park naturalist at Wild River State Park, and Gerry Drewry are co-chairs of the plant sale. Dave will price the plants, select some for the silent auction, ensure that only native plants are in the sale, and specify the habitat if there are questions. If you would like to help at the sale, call Gerry at 651-463-8006.

Biodiversity exhibit

May 2 will be the final day to see the exhibit “Biodiversity 911: Saving Life on Earth” at the Bell Museum of Natural History on the University of Minnesota Minneapolis campus. For information, call 612-624-7083.
Native plant species abound in Papua New Guinea

by Dr. George Weiblen
Assistant Professor, Department of Plant Biology, Curator of Flowering Plants, Bell Museum of Natural History, University of Minnesota.

This is an abstract of his talk at the Feb. 5 MNPS meeting.

The tropical island of Papua New Guinea is about as far from the Minneapolis neighborhood that I call home as you can get. New Guinea’s forests are one of the last great biological frontiers on earth, and their incredible diversity is what first attracted me to this far-away place.

For instance, the island has at least 20 times more species of plants than are found in Minnesota. Nobody knows exactly how many because much of Papua New Guinea remains unexplored. Countless new species await discovery, if only biologists can locate them before it’s too late. This tropical forest wilderness is slightly larger than the state of Texas, an area that continues to shrink under intense pressure from industrial logging and a growing local population.

I first went to Papua New Guinea in 1992 in an effort to catalogue the diversity of tropical trees, but I keep returning because of the people I met there. Over the years, my botanical research has developed into an ongoing exchange with local residents whose future critically depends on the fate of the forest.

Papua New Guinea doesn’t have national parks protecting its biological riches. Instead, 98 percent of the country is owned according to tribal tradition, which means that environmental protection is the sole responsibility of landowners. This unique situation is a challenge for biologists confronted by a rising tide of species extinction in tropical forests worldwide. Tribal land ownership in Papua New Guinea means that a botanist can’t so much as set foot in the forest without intruding on somebody’s backyard. Local people share the names and traditional uses of native plants with botanists like me in the hope that this information can be preserved for future generations in the face of tremendous cultural change.

Additional information is available at http://geo.cbs.umn.edu

Volunteers needed to search for rare lilies and orchids

by Linda Huhn

Could you help find rare dwarf trout lilies or orchids? Nancy Sather is again conducting the Natural Heritage and Nongame Research Program’s rare plant search and monitoring program.

The hunt for dwarf trout lilies will start April 20 in Nerstrand State Park and other locations in Rice and Goodhue counties. It will continue through the month of April.

Orchid work will be conducted July 5 - 14, primarily in Polk, Pennington and Kittson counties in northwestern Minnesota.

People with GPS capabilities are especially needed for both projects. To volunteer, contact Nancy Sather at nancy.sather@dnr.state.mn.us

Send her your e-mail address, phone number and specific information on when you could work.

Plant Lore

by Thor Kommedahl

What is goldenseal?

Goldenseal is *Hydrastis canadensis*, in the buttercup family. Other names include ground raspberry.

How did it get these names?

*Hydrastis* is made up of two words meaning water and to act, referring to the plant’s active juice. The goldenseal name comes from the yellow scars left on the rhizome by the stem that emerges each spring. It has been called ground raspberry because of its resemblance.

What does the plant look like?

It is a low, perennial herb with leaves and fruit similar to raspberry, has a fleshy rhizome with yellow interior, hairy stems, two alternate leaves that are palmately five- to seven- lobed, and flowers with three sepals but no petals and mostly greenish-white stamens. The fruit is a globose berry made up of many miniature, one- to two- seeded drupes.

Where does the plant grow?

It thrives in rich soil of shady woods and moist places at the edges of wooded lands. It flowers from April to May and fruits in June. It is native to Minnesota in southeast counties. Because of overharvesting, it is almost extinct.

Did American Indians use this plant?

The Indians valued the root as a tonic, to improve digestion, to treat eyes, and as a dye. Pioneers adopted the goldenseal in their folk medicine.

Does it have medicinal uses?

Root teas were made to treat membranes in mouth, throat, and uterus, and a tea (wash) was a remedy for eye infections. Until the 1980s, root components were part of commercial eyewash preparations. Goldenseal may help in treatment of tuberculosis, according to a 1998 study. It contains the alkaloid berberine.
Memories of Nerstrand Woods
by Jean McIntosh. She was a secretary in the University of Minnesota Department of Botany for many years.

As a botany major at the University of Minnesota, I joined the Linnaean Club and participated in its activities, especially field trips. In the spring of 1939, Bruce Ledin introduced us to Nerstrand Woods. He never could remember which road to take to get out of Northfield, so we approached the woods from all different directions. (There weren’t many road numbers on country roads.) I finally made a chart of the road on the return trip so we could go the most direct route. The club members lobbied the Legislature, and we think we helped make the area a state park in 1945.

During the latter years of World War II, there was gas rationing (1943, 1944), so we couldn’t drive down there. However, the Chicago Great Western train went from St. Paul through the town of Nerstrand and on into Iowa. It left St. Paul at 8:30 a.m. and took an hour or so to reach Nerstrand. It was just a mile hike west to the woods. The family who lived on the southwest corner of the crossroads halfway to the woods let us use their pump to get drinks of water. It wasn’t until the early ‘50s that any paths or picnic facilities were put in. We brought our lunches, and carried vasculums to collect samples of all the plants that grew there. The collection was later donated to the Herbarium of the Botany Department.

We usually hiked back to town by 4:30 or 5 p.m. and bought quarts of ice cream at the little store. The clerk cut them in half, and we each ate a pint out of the carton. The train to St. Paul came at about 6 or 6:30 p.m. The fare was very reasonable. One trip it rained part of the day, and we were a bedraggled bunch when my mother picked us up at the depot in downtown St. Paul.

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Illinois botanist to teach about grasses, sedges and rushes
by Scott A. Milburn

A growing number of plant identification courses offered around the country are not affiliated with academic institutions. These courses tend to be targeted towards an audience of wetland regulators and wetland consultants, and are usually taught by professors who have now transitioned into training professionals in such a manner.

One of the most prominent of these professors is Dr. Robert H. Mohlenbrock, who has retired from Southern Illinois University. He will come to Minnesota in June to teach, in partnership with Jason Husveth and Scott Milburn, a class on the grasses, sedges, and rushes of Minnesota. For more information regarding the course, contact Jason or Scott at 651-433-4410.

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Minnesota Native Plant Society
Member Registration

Name ____________________________________________________________________________________

Address __________________________________________________________________________________

City _____________________________________________ State ____________________ Zip ____________

Phone (work) _____________  Phone (home) _____________  e-mail ________________________________

New member? _____  Renewal? _____  Is this a gift? _____  From __________________________________

$12 _________  Individual $15 ________  Family (2 or more related persons, one address)
$8 _________  Student (full time) $8 ________  Senior (62 or over or retired)
$20 _________  Institution $25 ________  Donor

Please complete the form above, check the appropriate membership category, and enclose your check made payable to the Minnesota Native Plant Society. Mail this form and your check to the Minnesota Native Plant Society, University of Minnesota, 250 Biological Sciences Center, 1445 Gortner Ave., St. Paul, MN 55108