Minnesota Plant Press

The Minnesota Native Plant Society Newsletter

Volume 30 Number 1 **Winter 2011**

Monthly meetings

Thompson Park Center/Dakota Lodge
Thompson County Park
360 Butler Ave. E.,
West St. Paul, MN 55118

Programs

The Minnesota Native Plant Society meets the first Thursday in October, November, December, February, March, April, May, and June. Check at www.mnnps.org for more program information.

6 p.m. — Social period

7 – 9 p.m. — Program, Society business

Feb. 3: "New Frontiers in Invasive Earthworm Research," by Dr. Lee Frelich, director, University of Minnesota Center for Hardwood Ecology. **Plant-of-the-Month:** *Viola selkirkii* (Selkirk's violet), also by Dr. Frelich.

March 3: "Shoreline Restoration Tricks and Tips with Financial Help from the Watersheds," by Rusty Schmidt, landscape ecologist, Washington Conservation District. **Plant-of-the-Month:** *Chelone glabra* (Turtlehead), by Rusty Schmidt.

March 26: Symposium. See article on page 2.

April 7: "Minnesota Mushrooms – Then and Now. A Report on Some Recent Survey Results and on the Impact of Fungal Tree of Life Studies on Mushroom Classification," by Dr. David J. McLaughlin, Department of Plant Biology, University of Minnesota. **Mushroom-of-the-Month:** TBD.

DNR increases amount of protected lands in Minnesota

by Peggy Booth, SNA program supervisor. This is a summary of her talk at the Dec. 2, 2010 MNNPS meeting.

The DNR's Scientific and Natural Area Program is responsible for protection and management of special places and rare resources, primarily through the system of designated Scientific and Natural Area (SNA) sites and our Prairie Stewardship Program.

The Prairie Stewardship Program provides assistance to private landowners of native prairie through the Prairie Tax Exemption Program, prairie stewardship planning and management assistance, acquisition of Native Prairie Bank (NPB) conservation easements, and various outreach and education activities. These include the recently released DVD called *Prairie Treasure: A Native Prairie Bank Story,* which is available free through the SNA Program. As of November 2010, 100 NPB easements protect 8,111 acres; this includes 26 new NPB easements on 2,066 acres acquired in the last four years.

Designated SNAs are units within the state's outdoor recreation system established to protect and perpetuate in an undisturbed natural state those natural features which possess exceptional scientific or educational value. As of November 2010, about 184,100 acres are protected at 152 SNAs across the state. Activities on SNAs include ecological management (such as prescribed fires and, in a few locations, deer exclosures and plant community reconstruction), monitoring, research, and educational/volunteer events sponsored by others.

During the last four years, 1,636 acres (at 23 sites) have been acquired, through purchase and/or donation and added to the SNA system. These include 10 newly created SNAs: Lester Lake SNA (Hubbard Co.), Boltuck-Rice Forever Wild SNA(Itasca Co.), Langhei Prairie SNA (Pope Co.), Englund Ecotone

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In this issue

Lake vegetation of Minnesota is topic of March 26 symposium

by Michael Bourdaghs

The Society's 2011 symposium committee has again decided to focus on a specific habitat and has chosen *Minnesota's Lake Vegetation Above and Below the Water Line*. Sessions will touch on the natural history and current conservation issues of the plants and plant communities occurring in the State's lakes and adjacent shorelines.

The Bell Museum of Natural History on the University of Minnesota Minneapolis campus has agreed to host the symposium on Saturday, March 26. A brochure with a full program listing and registration information will be mailed soon.

Shell Lake in Becker County exhibits some of the varied vegetation that will be discussed at the symposium. Photo by Erika Rowe.

Minnesota Native Plant Society's purpose

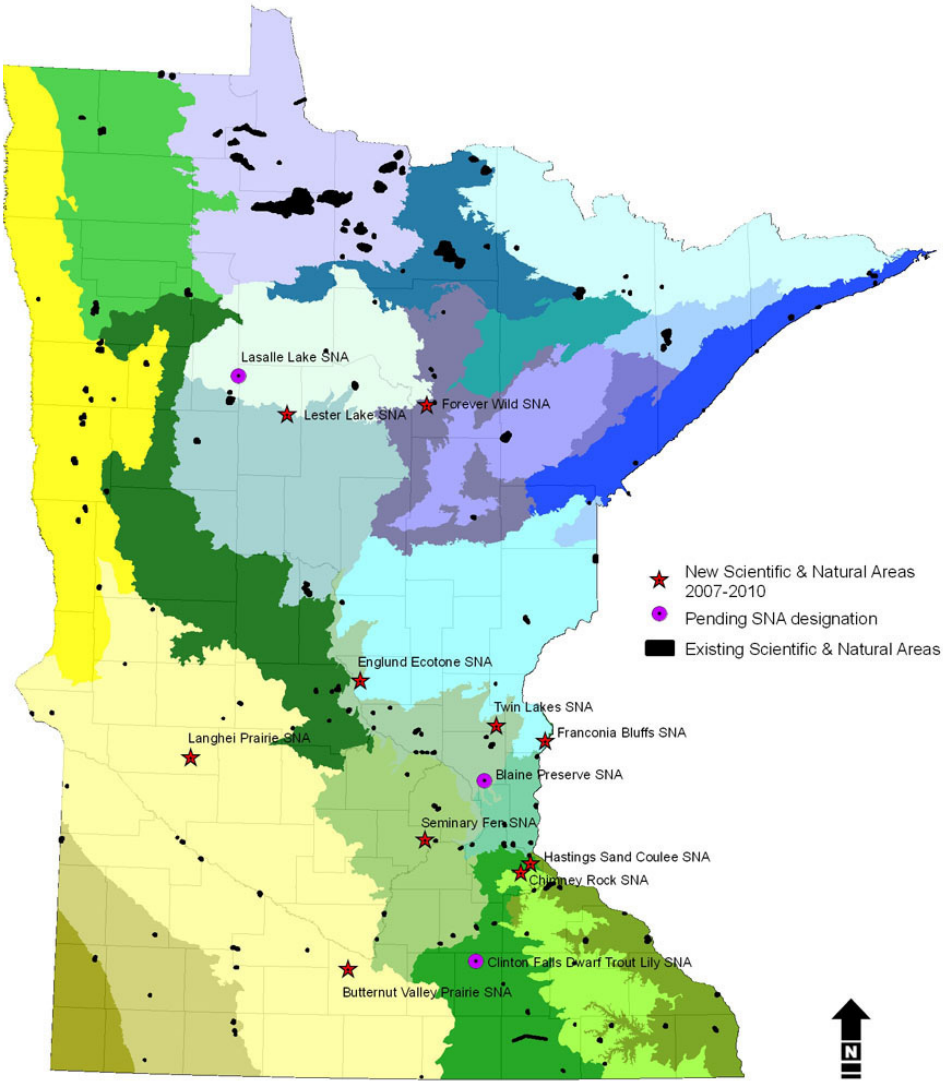
(Abbreviated from the bylaws)

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, ecosytems.
6. Preservation of native 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.

MNNPS Board of Directors

Where the new SNAs are



New SNAs

Continued from page 1

SNA (Benton Co.), Twin Lakes SNA (Isanti Co.), Franconia Bluffs SNA (Chisago Co.), Seminary Fen SNA (Carver Co.), Hastings Sand Coulee SNA and Chimney Rock SNA (Dakota Co.), and Butternut Valley SNA (Blue Earth Co.).

In addition, by early in 2011, three new sites will be added, protecting an additional 353 acres: LaSalle Lake SNA (Hubbard Co.), Clinton Falls Dwarf Trout Lily SNA (Steele Co.), and Blaine Preserve SNA (Anoka Co.). The map shows the locations of these 13 newest SNAs.

Attendees at the MNNPS meeting heard an overview about these sites, their primary native plant communities, and selected species they feature.

Lester Lake SNA in Hubbard County (above) is one of the 13 new SNAs. Their locations are identified by a star symbol on the map. The map is courtesy of the DNR. The photo of Lester Lake is by Erika Rowe.

Northfield group is building an outdoor classroom

by Arlene Kjar

Getting children outdoors into the natural world to learn about nature is the goal of Prairie Partners' next project in Northfield. This volunteer organization has received a $900 grant from the Northfield Garden Club to fund their work in the Greenvale Lone Oak Nature Area.

The major part of the project will be building an outdoor classroom, which will consist of seven benches grouped together in the prairie/woods area. A teacher will be able to instruct an entire class. The students can be seated, and then pursue their various activities in the nature area. The project will be started in the spring of 2011.

$150 was allotted for 27 species of native flower seeds. They arrived just in time and were scattered before the Nov. 13 snowfall. Some money is allotted for plants, such as ferns, for the woods and prairie.

The sign on the west side of the prairie will be restored, and a park bench will be constructed and placed where visitors may sit and enjoy the sights and sounds of nature.

Additional volunteers are welcome. For more information, contact Laura Bergdahl, 507-645-3537, or Arlene Kjar, president of Prairie Partners, 507-645-8903.

Dues are due now

The MNNPS year starts Jan. 1. If you have not paid your 2011 dues, this is a reminder. You may pay them at the Feb. 3 meeting or mail them to P.O. Box 20401, Bloomington, MN 55420.

Membership categories are:

- Individual or family, $15;
- Student or senior, $8;
- Institution, $20;
- Donor, $25;
- Lifetime, $300.

Tree rings reveal history of Minnesota forest

by Mike Reinikainen, Master of Science student, in conjunction with Dr. Anthony D'Amato of the University of Minnesota Department of Forest Resources, and Shawn Fraver of the USDA Forest Service Northern Research Station. This is an abstract of his talk at the Nov. 4, 2010 MNNPS meeting.

Dendroecology, or the dating of ecologically significant events using tree rings, was used to assess forest disturbance patterns over nine decades and to relate observed patterns to current forest composition within the Northern Wet-Mesic Boreal Hardwood-Conifer Forest (MN native plant community MHn44) in north-central Minnesota. This study was conducted to better understand and inform the management of MHn44 forest communities, which cover nearly 320,000 acres of Minnesota. Understanding how these forests change is imperative to forest management and the provision of a host of ecosystem services.

Here is how MHn44 changes:

Trembling aspen (*Populus tremuloides*) dominated the dense overstory of early forests following severe disturbances. When adequate seed, seedlings, or saplings were available, ensuing forest change was facilitated by the growth of shade-tolerant understory species like balsam fir (*Abies balsamea*) and red maple (*Acer rubrum*) in the low light conditions under the taller aspen stems. The mortality of some young aspen enhanced the growth of understory species. Such mortality occurred as a result of resource competition between neighboring aspen trees and severe forest tent caterpillar (*Malacosoma disstria*) defoliation. Defoliation events are usually brief and typically do not lead to tree death, but tree ring evidence revealed a uniquely prolonged and severe defoliation event that lasted throughout the 1950s and resulted in heavy mortality, even in young aspen. Interestingly, the recorded history of defoliations within Minnesota strongly corroborates these findings.

The mortality resulting from severe and prolonged defoliation of aspen increased species diversity roughly 20 to 30 years into stand development. Canopy gaps resulting from overstory aspen mortality led to increased growing space and increased resources for the growth of other tree species. Species like balsam fir, red maple, and, to a lesser degree, trembling aspen increased in abundance during these periods of canopy tree mortality. Over time, simple aspen stands were made more diverse due to canopy disturbance.

In later decades, periodic tent caterpillar defoliation of aspen and extensive defoliation of balsam fir and white spruce (*Picea glauca*) by Eastern spruce budworm (*Choristoneura fumiferana*) caused elevated mortality of the respective host species. We observed the greatest mortality within populations of balsam fir. While these events reduced diversity of overstory species, they created canopy gaps and contributed large amounts of aspen and balsam fir deadwood material to the forest floor. In the absence of deer herbivory and the presence of adequate seed source, such material may further contribute to the diversification of these forests by providing the necessary substrate for germination of more "finicky" species like Eastern white cedar (*Thuja occidentalis*) and white spruce. Otherwise, regeneration of balsam fir and trembling aspen was highly successful where shrubs like beaked hazel (*Corylus cornuta*) and mountain maple (*Acer spicatum*) were less abundant.

In all, this study pinpoints critical moments in the development of one of Minnesota's most abundant aspen-types, moments where managers may be able to intervene to enhance the diversity and ultimately the ecological function of these forests. Retrospective studies using dendroecology can be used to better inform the management of our changing forest resource.

Pilot program aims to halt new invasive weeds

The City of Maplewood has joined forces with the Ramsey County Cooperative Weed Management Area to begin a pilot monitoring program aimed at stopping new invasive plant species in their tracks. Early detection will allow quick action to prevent buckthorn-like takeovers.

Volunteers are needed to help monitor more than 10,000 acres of parks, trails, open spaces and natural areas. These volunteers will hike on and off trails during optimal detection periods for each species. They will mark locations and report weeds for removal. An informational meeting will be held at 7 p.m. March 22 at the Maplewood Nature Center. Each volunteer will choose a monitoring area. GPS units will be available during training and for each monitoring period. Call 651-249-2170 to register.

For additional information, contact Carole Gernes, Ramsey County Cooperative Weed Management Area coordinator, at 651-792-7977, or carole.gernes@rwmwd.org.

MNNPS website

For information about Society field trips, meetings and events, check the website: www.mnnps.org

Conservation Corner

Current status of rules for wild rice protection

by Beth Nixon

One goal of the MPCA is to protect those surface waters used for the production of wild rice. The quality of these waters will permit their use for irrigation without significant damage or adverse effects upon any vegetation usually grown in the waters.

The current state water rule establishes pollutant standards to be used as a guide for determining the suitability of waters for such uses, including the production of wild rice. The standards specify sulfates at "10 milligrams per liter, applicable to water used for production of wild rice during periods when wild rice may be susceptible to damage by high sulfate levels."

Other substance, characteristic, or pollutant standards for 4A waters are bicarbonates (5 mE/L); boron (0.5 mg/L), minimum (6.0) and maximum (8.5) pH values; specific conductance (1,000 uMhos/cm at 25C); total dissolved salts (700 mg/L); sodium (60 percent of total cations in mE/L); and radioactive materials (not to exceed the lowest concentrations permitted to be discharged to an uncontrolled environment as prescribed by the appropriate authority having control over their use).

When evaluating any facility or project with potential wild rice impacts, the MPCA will consider all available information to determine which surface waters are used for the production of wild rice. If any surface water is determined to be a wild rice water, the MPCA will evaluate whether there is a reasonable potential for the discharge(s) to cause or contribute to a violation of the applicable water quality standard. If a reasonable potential exists, then the MPCA will establish an appropriate water quality-based effluent limit in the facility permit to protect the applicable water quality standard and the designated uses of the water as a wild rice production water.

The 1997 Statement of Need and Reasonableness (SONAR) was for amending Minnesota Rules Chapter 7050 and 7052 and designated wild rice waters in the Lake Superior Basin. The amendments were to be of limited scope but did call potential additional benefits to these classes of people: those who harvest wild rice for food, recreation, or as an income source; sportspersons, particularly waterfowl hunters; and cultivated wild rice producers and supporting industries. Water level fluctuation (greater than six inches) was identified as the most critical influence on sustained wild rice production. The amendments were considered a starting point to examine additional water quality criteria for wild rice protection to be addressed in future rule-making amendments.

The wild rice rule update, recognizing the important resource value, was placed in Class 4A Agriculture and Wildlife Waters, where the language already existed for the sulfate standard adopted in 1973. The first part prescribes the qualities or properties of the waters of the state that are necessary for the agriculture and wildlife designated public uses and benefits. However, the 1997 amendment, subpart 1, now specifically speaks to ecological uses and benefits of wild rice, this being the only plant resource specifically called out.

MNNPS welcomes new members

The Society gives a warm welcome to 19 new members who joined during the fourth quarter of 2010. Listed alphabetically, they are:

Laura Aldrich-Wolfe, Moorhead;
Peggy Booth, St. Paul;
Jeff L. Emmel, Brooklyn Center;
Doug, Sheila Grow, Minneapolis;
Terri and David Hanke, Shakopee;
David Hanson, Coon Rapids;
Pam Larson Frink, White Bear Lake;
Jenny Lewis, Winona;
Jordan Manuel, St. Louis Park;
Chris Niskanen, Stillwater;
Curt Olen, St. Michael;
Laura Pipenhagen, Zimmerman;
Stephen D. Poole, Eagan;
Michael Reinikainen, Minneapolis;
Priya Shahani, St. Paul;
Karen Sutherland, St. Paul;
Steve Travers, Moorhead.

2010 MNNPS treasurers' report

Ron and Cathy Huber, MNNPS treasurers, have prepared a summary of the Society's accounts, as of Dec. 31, 2010. Assets totaled $17,065.15. Expenses ($17,661.87) exceeded income ($9,831.28) by $7,830.59, primarily because the Society made $7,550 in donations that support its purpose.

Major items in the report include income from membership dues, $3,215. Plant sale income was $566. Symposium income was $5,275; its expenses totaled $3,857.40, for net symposium income of $1,417.60. Dakota Lodge rent for seven months was $2,078.24.

President's column

by Scott Milburn

New DNR Commissioner

My past column touched on the November election and political appointments. One of the most important positions that affect the mission of the Society is commissioner of the Department of Natural Resources (DNR). The newly appointed commissioner, Tom Landwehr, has the resume and background that are appropriate for this position and is in stark contrast to his counterpart in neighboring Wisconsin. Commissioner Landwehr will have to deal with budget constraints and vocal interests for every issue. However, I am optimistic that Tom understands natural resource management and that there is a difference between management and depletion.

State needs volunteers

I would also like to point to something that Governor Dayton mentioned during his inauguration speech. He requested that every capable adult volunteer one day of their time a month. As an all-volunteer organization, we are reliant upon our membership to step forward and donate their skills and time as well. I ask that each one of us contribute in some capacity, either directly with a non-profit natural resource organization, or with a state agency such as the Minnesota Pollution Control Agency or the DNR. These agencies and non-profits are likely to see reduced budgets and private donations in upcoming years, and we can help. One thing to consider is how much we can accomplish as a volunteer army. If each member donated six hours of time in one year, that would amount to a full work year for one person.

Society donations

On a contrary note, we are in a different position financially. Much of our revenue comes from either memberships or symposia. What we charge for memberships and programming has not increased in cost to our members this last decade. Yet, the Society has been in a position of building up our treasury over this time. This is due to keeping our costs low, with our members contributing where needed. We are fortunate to be in a position to donate this excess revenue, with the board not taking this responsibility lightly. In just the past few years, we have donated with the approach of investing these dollars where it benefits many versus a limited few. We have also looked for opportunities to invest rather than declaring an open checkbook to those that are interested.

Earlier in the year, we donated $1,300 to the Bell Museum to assist with costs associated with the digital transformation of the Sand Country Wildlife film by the late Walter Breckenridge. This was a great opportunity to help preserve the legacy of "Breck" and his contributions to natural history. Especially now, it is an important time to think about donating to worthy entities, given the economy and budget forecasts. In December, the board was ambitious and decided to donate additional funds. It was decided that these funds would go to four different entities that are in line with our mission as an organization. We will once again be supporting the efforts of Welby Smith to further his publications on Minnesota plants with a donation of $2,500. Those who have knowledge of his latest work, the *Trees and Shrubs of Minnesota*, understand why it is so important to have this high quality educational resource material available. I am happy to report that the *Trees and Shrubs of Minnesota* is now up for a second printing.

The board also decided to donate to the *Minnesota Conservation Volunteer*, the Bell Museum, and toward the funding of educational kiosks at several of the new Scientific and Natural Areas. Each of these three entities received $1,250 in this round of contributions. Overall, the Society donated $7,550 in 2010, and that should be considered a smart investment for the future.

Oriental bittersweet has invaded state

Oriental bittersweet (*Celastrus orbiculatus* Thunb.) has been found in Winona and on rights-of-way in Anoka, Hennepin and Ramsey counties, the Minnesota Department of Agriculture announced in December. "Oriental bittersweet is considered a serious threat to our forests, based on what it has done in Eastern states," said Monika Chandler, an invasive plant specialist for the department.

The vine is established in many Eastern states and in Canada. Single vines can grow up to 66 feet in length and four inches in diameter. They can strangle and smother trees, dominate the forest canopy, reduce forest productivity and block sunlight from ground-story plants. Their "berries" (capsules) are yellow. Native American bittersweet (*Celastrus scandens*) has orange capsules.

To report an infestation, call the department's pest hot line, 651-201-6684 or 1-800-545-6684, or send an e-mail to arrest.the.pest@state.mn.us

Plant Lore

by Thor Kommedahl

What is pussy willow?

Pussy willow is a shrub or small tree named *Salix discolor* in the willow family (*Salicaceae*).

How did it get its names?

Salix is the classical Latin name for willow. *Discolor* refers to the contrast in color between the upper and lower leaf surfaces. "Pussy" denotes the furry male catkin, which is appropriate, as catkin means kitten in Polish.

What does the plant look like?

The pussy willow shrub has an extensive root system and usually multiple stems. The leaves are elliptical with a smooth upper green surface and a felt-like, lower whitish surface. The flowers are either male or female, borne in structures called catkins. The male catkin is the silky "pussy," and a female catkin comprises fruits as capsules containing seeds that are dispersed by wind.

Where does the plant grow?

Pussy willow is an opportunistic shrub that grows quickly along streams, swamps, and moist to wet locations, but rarely on prairies, in most Minnesota counties.

Are there medicinal properties?

The Greek physician Dioscorides in the first century prescribed willow bark for treating fevers and pain. The active ingredient was later identified as salicin, then salicylic acid, which centuries later was modified to acetylsalicylic acid and synthesized as aspirin.

What is the legend of pussy willows?

The legend hangs on a Polish tale about willows rescuing kittens from the river. Dot McGinnis wrote a poem, excerpted as follows:

...To reach the kittens was their goal;
A rescue mission, heart and soul.
...Tiny fur like buds are sprung
Where little kittens once had clung.

Do we value pussy willows in our culture?

Its extensive root system enables the shrub to hold soil together, valuable for erosion control, but sometimes incompatible with garden or landscape plants. By collecting stems in late winter and bringing them indoors, they will bloom and serve for table arrangements.

Pussy willows are harbingers of spring!

New field guide identifies aquatic Wisconsin plants

Aquatic Plants of Wisconsin: a Photographic Field Guide to Submerged and Floating-leaf Aquatic Plants, by Paul M. Skawinski, published by Wisconsin Lakes, 2010, $34.

Review by Russ Schaffenberg

Because we need more awareness in the general public about aquatic plants, and more people to watch for invasive species, this book is a good thing and should help the cause. It is portable and has photos, which many people prefer. At only 6" x 9" x ½" thick, this glossy, spiral-bound book is small and portable but contains a lot of information and 280 photos.

Salix discolor *male catkins (top) and leaves. Photos courtesy of Welby Smith.*

On the back cover is stated: "*Aquatic Plants of Wisconsin* is a full-color, photographic guide to Wisconsin's true aquatic plants, highlighting 120 species. This guide is designed to be comprehensive and user-friendly for professionals and casual users alike."

The book uses leaf shapes and arrangements to separate plants into eight groups; then you look through that section to identify your plant. In the Appendix, traditional keys are also provided for three of the genera, *Myriophyllum, Utricularia* and *Sparganium*, courtesy of Dr. Robert Freckmann, who served as a technical advisor. When you open the text, you see two species presented on the two facing pages, with the photos on the right page and the text on the left. The text states the name, habitat, status, water type, distribution, form, what other plant looks most similar to it, and a short paragraph on identification. Key characteristics are in bold type.

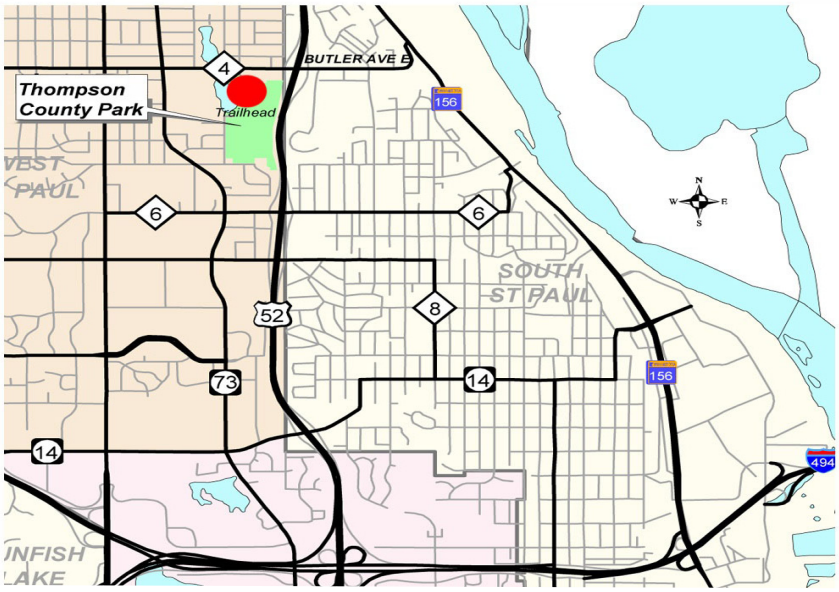
This book will encourage more people to learn about aquatic plants and watch for invasive species. Until now, the popular and widely used 1997 Wisconsin DNR/Lakes Partnership publication, *Through the Looking Glass: A Field Guide to Aquatic Plants* (DNR #FH-207-97), has filled this niche. It remains an excellent book. It is 8½" x 11," paperback, has illustrations rather than photos, and separates plants into four groups: emergent, free-floating, floating-leaf and submersed.

Both books include several non-vascular aquatic plants, such as liverworts and algae. Skawinski did not include emergent plants (cattails, wild rice, etc.). He did include a few sometimes puzzling species that are typically terrestrial/emergent but often have aquatic forms, such as *Galium, Glyceria, Sagittaria, Berula,* and *Juncus pelocarpus*.

Minnesota Native Plant Society
P.O. Box 20401
Bloomington, MN 55420

Winter 2011

Thompson County Park:
360 Butler Ave East, West St. Paul, MN 55118



Directions:
Take MN Hwy. 52 to the Butler Ave. E. exit in West St. Paul.
Go west on Butler 0.2 mile to Stassen Lane.
Go south on Stassen Lane to Thompson County Park.