



# Minnesota Plant Press

The Minnesota Native Plant Society Newsletter

Volume 27 Number 3

Spring 2008

## Monthly meetings

Thompson Park Center/Dakota Lodge  
Thompson County Park  
360 Butler Ave. E.,  
West St. Paul, MN 55118  
651-552-7559 (kitchen)

## Programs

The MN NPS meets the first Thursday in October, November, December, February, March, April, May, and June. Check the website for more program information.

6 p.m. — Social period

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

**May 1: “Under the Cart Wheels:** Natural Communities and Native Plants Along the Pembina Trail,” presented by Nancy Sather, DNR ecologist. **Plant of the Month:** Blanket flower (*Gaillardia aristata*).

**June 5 “Music of the Leaves:** How Plants Arrange Their Leaves for Most Efficient Photosynthesis,” by Clarence L. Lehman, adjunct professor, Department of Ecology, Evolution and Behavior, University of Minn. **Native Plant Sale** following program.

## Prairie conference website is changed

The website for the 21st North American Prairie Conference, which will be held at Winona State University Aug. 4 to 8, has been changed. For information or to register, go to <http://bio.winona.edu/NAPC/index.htm>

## MN NPS website

For current information about MN NPS field trips, meetings, and other events, check the website: [www.mnnps.org](http://www.mnnps.org)

## Plants are indicators of wetland quality

by Michael Bourdaghs, wetland biologist, Minnesota Pollution Control Agency. This is an abstract of his talk at the Dec. 6, 2007 MN NPS meeting.

The Minnesota Pollution Control Agency (MPCA) has worked for over 10 years to develop a wetland biological monitoring program in support of the state and federal “no net loss” wetland policy. Biological monitoring is the use of biological community measurements to assess the condition (i.e., deviation from a natural or least disturbed state) of the resource. In this case, we measure plant communities to assess wetland condition. This is an effective approach, as plant communities can integrate multiple human impacts to wetlands over space and time in predictable patterns.

Our primary indicator is called the Index of Biological Integrity or IBI. An IBI is a multimetric index — meaning that it consists of a number of separate metrics that when combined produce a very robust index of wetland condition. Each metric is selected primarily based on its response to human-caused wetland stress, such as hydrologic alteration or excess nutrient loading. To date, IBIs have been developed for depressional marshes statewide. We have successfully applied our IBIs in a number of areas, including the Wetland Health Evaluation Program volunteer monitoring group ([www.mnwhep.org](http://www.mnwhep.org)); a wetland quality survey conducted in the Redwood River watershed; and wetland assessment under the impaired waters section of the Clean Water Act.

Looking to the future, the MPCA, in cooperation with a number of other state and federal agencies, has developed an overall wetland monitoring strategy. As part of the strategy, we have begun a statewide status and trends survey, where wetlands are randomly selected and assessed with IBIs. The survey will give us for the first time the ability to measure the overall condition of depressional marshes in Minnesota. In addition to the survey, we are continuing to develop other monitoring

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# President's column

by Scott Milburn

The Minnesota Native Plant Society has recently begun our 27th year. Perhaps our best accomplishment is that we operate entirely as a volunteer organization. We rely on our members for every task, from the financial details to the organization of the social hour before every monthly meeting. Great work is being done by our members. From our field trip coordinator Ken Arndt to our membership coordinator David Johnson, we rely on their efforts. As many of you know, Ken has been in charge of field trips for several years. Under his tenure, we have had the opportunity to explore Minnesota and have been able to reach out to new members. This task involves hard work, dedicated time, and a great deal of coordination.

Prior to every monthly meeting, paid members receive notification of the meeting. These postcards are prepared, stamped and mailed by David Johnson, who is also in charge of membership. This is quite a task, and we appreciate the effort. Volunteering is worthwhile and beneficial to advancing the Society. I ask our members to think of ways they can contribute in the future.

I would also like to point out the great effort by the symposium committee. Turnout for this year's symposium was great, and the feedback was quite positive. We are grateful for the excellent presentations and the panel discussion. We hope that folks were able to learn something new and to take with them an appreciation for one of the most amazing places in Minnesota.

On a related topic, we have built up a reserve of money over the past few years due to the symposia. As noted in my last column, we donate a portion of our funds to support various projects or groups that further the mission of the Society. This can be a challenge, because there are quite a few ways to spend our money. The board has been diligent in evaluating projects, viewing each donation as an investment. We recently funded two special projects. The first was purchasing 20 plant field guides for the Como Park High Woodland Project. The second was providing partial funding for busing kids to nature centers for the next three years.

We are also fortunate to have a great relationship with the Bell Museum of Natural History and thank them for all of their help at the symposium. In closing, I hope that everyone has a chance to enjoy the Minnesota Spring and please share your enthusiasm with others.

## Conservation Actions

by Beth Nixon

Readers of this newsletter are presumed to share a passion for wild places and what they stir in the heart, be it an aesthetic sense, spiritual strength, or playfulness and creativity. This past year the MN NPS responded to a call to ensure that some semblance of this appreciation of wild places is brought to children living in Ramsey County. The public school funding gap left out busing for field trips, eliminating environmental education at area nature centers. For the next three years, our Society will provide \$300 per year for field trip busing. St. Paul Audubon Society will do the same.

The Conservation Committee is developing a member Action Alert e-mail list for letter writing. You are not obligated to write every time you receive an alert, but we hope that once or twice a year you can quickly respond to an alert with a letter. Talking points will be provided. Go to the website and contact the Conservation Committee, or sign up at the next monthly meeting.

## MNNPS Board of Directors

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## Waterfest is May 17

Lake Phalen's shoreline restoration will be celebrated May 17 during Waterfest 2008 at Phalen Park Pavilion, St. Paul. The event will include rain garden tours, watershed information and a native plant giveaway. Search "waterfest" at [www.co.ramsey.mn.us](http://www.co.ramsey.mn.us) for details.

# Rare plants found in pools on rock outcrops

by Fred Harris, plant ecologist, Minnesota County Biological Survey, Minnesota DNR. This is an abstract of his talk at the March 6, 2008 MN NPS meeting.

Temporary rainwater pools on rock outcrops in our prairie region have a unique flora for Minnesota. The two main areas of rock outcrops in the prairie region are crystalline bedrock exposures in the Minnesota River Valley and Sioux Quartzite outcrops in the inner portion of the Prairie Coteau (Pipestone and Rock counties). Sioux Quartzite exposures also occur on the outer margins of the Prairie Coteau in Cottonwood County.

Ephemeral rock outcrop pools vary from small, one-foot diameter puddles in bedrock depressions to pools of 25 feet across. All of these pools are at least eight to 10 inches deep, last for at least one to two months, and dry up by late June in most years. These ephemeral pools lack competition from the dense cover of wetland graminoids (e.g. *Carex* sp.) present in more permanent pools on outcrops.

Temporary pool species germinate and rapidly grow during the short duration of the wetland, then typically change morphology from aquatic to terrestrial forms that persist for a few weeks while stranded in drying mud after surface waters have disappeared. The plants then persist the rest of the year through extreme heat and drought as seed, spores, or other perennating parts in dried mud deposits in the rock depressions until the pools refill with rainwater the next spring.

In the early 1980s, Welby Smith described these unusual rock pools and their flora and recommended several pool-specialist species with few records in the state for

designation as state listed rare species. Also at that time, Emily Nietering completed a Master's thesis to locate many populations of these rare plants in the Minnesota River Valley. More recently, fairly systematic surveys by botanists of the Minnesota County Biological Survey (MCBS), have added to our knowledge of the species of rock pool habitats in the Minnesota valley and the Prairie Coteau, and relocated several species last recorded in the early 1900s. Rare, rock-pool specialist species include the following.

**Water hyssop** (*Bacopa rotundifolia*) — This small scroph occurs mostly in small rock depressions in the Minnesota valley, with a few records from Sioux Quartzite pools on the Coteau. Most of the available habitat for this species has been examined, and a total of approximately 20 populations of this species have been located in the state since the early 1900s. This species appears to be fairly rare in Minnesota, and MCBS staff recommend upgrading its status from Special Concern to Threatened.

**Wolf's spikerush** (*Eleocharis wolfii*) — Prior to MCBS, this overlooked sedge species had been collected in just three locations in the state, all prior to 1968 and from habitats vaguely described on specimen labels as "moist areas." In 1997, MCBS discovered this species growing on the edges of rock pools at Carver Rapids Wayside in the Minnesota valley. In the last two years, MCBS located several populations on the margins of Sioux Quartzite pools on the Coteau.

**Mudwort** (*Limosella aquatica*) — This small, annual scroph is uncommon throughout its

circumboreal range because it is limited to ephemeral pools. It occurs as a thin, floating-leaved aquatic form that reverts to a more succulent-leaved terrestrial form when stranded in mud. MCBS located numerous new populations of this species on the Prairie Coteau in the last two years.

**Hairy water clover** (*Marsilea vestita*) — Prior to MCBS, this aquatic, heterosporous fern was last recorded in Minnesota in 1938 at Pipestone National Monument. In 2007, MCBS documented several new populations of this species on Sioux Quartzite pools in Pipestone and Rock counties. Upright, terrestrial forms persist in drying mud where they produce sporocarps. Seeing this tiny plant is really a matter of being in the right place at the right time.

**Prairie quillwort** (*Isoetes melanopoda*) — In Minnesota, this aquatic, heterosporous fern ally is a northern disjunct from the rest of its range in the United States. Prior to MCBS surveys, the species had been known from Pipestone National Monument and Blue Mounds State Park. In 2007, MCBS located several new populations of the species, including a large population at the new Touch-the-Sky National Wildlife Refuge in Rock County.

**Pygmy weed** (*Crassula aquatica*) — This tiny succulent plant in the *Crassulaceae* had been recorded once in Rock County in 1945. In 1983, several deep-water plants of the species were discovered in Namakan Lake in Voyageurs National Park. In 2007, two individuals of the dwarf, terrestrial form of this species were found stranded on mud in Rock County. This plant also occurs in vernal pools in California, where it was found to perform the crassulacean acid metabolism (CAM) mode

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# How do moose affect northern forest ecology?

## *Lessons from Isle Royale National Park*

by Peter A. Jordan, Department of Fisheries and Wildlife, University of Minnesota. This is an abstract of his talk at the Nov. 1, 2007 MN NPS meeting.

### **Background**

Isle Royale National Park in Lake Superior has long been famed not only as a beautiful and biologically diverse wilderness, but also for the intensively studied, long-term dynamics of wolves and moose there. Ecologically, however, documenting how these two elements interact does not provide a full understanding of this ecosystem, because the forage-vegetation segment must be included as well.

We have been measuring woody plants and the impact of moose upon them since the 1960s and are now connecting those data to trends in the moose and wolf populations that have been tracked by others — along with our estimating winter moose numbers from pellet counts.

I joined the long-term moose-wolf project in the 1960s to monitor the animals, but also began establishing permanent plots on which upland shrubs and trees were inventoried, along with how these were affected by the foraging of moose (as well as snowshoe hares). This sampling system was gradually expanded into an island-wide network of plots wherein many relevant variables are re-measured annually, along with some less-often as needed.

### **The issues**

Moose feed primarily on woody plants, taking leaves and new twigs of deciduous species during the growing season, then their dormant twigs plus the foliage of some conifers during the rest of the year.

Density of moose at Isle Royale has long been higher than in most other northern regions of the world where they occur. They first arrived on the island in the early 1900s, and by the 1920s had grown to several thousand on this 204-square-mile island, causing conspicuous damage to the forests.

As we measure and interpret long-term ecological effects, the question arises, have moose caused the forests on Isle Royale to become far different in composition and/or structure than those on the adjacent mainland where moose are either not present or at much lower densities?

### **Plant diversity at Isle Royale**

For students of native plants, it's interesting that, as a habitat for plants, the island supports a considerably greater diversity of species and forest types than similar-sized areas on the surrounding mainland. For example, orchid species here number 32 (as of 1993), and there are a number of relict species associated with West Hudson Bay plus the far West.

The cold, but winter-long open, waters of Lake Superior provide more moderate temperatures year round, particularly underlying more cool and damp summers. Its topography includes sharp, parallel ridges and depressions, plus swamps and bogs, along with numerous inland lakes.

Briefly, the major forest types include northern-hardwood sugar-maple and yellow-birch; extensive mixed stands of white birch, quaking aspen, balsam fir and white spruce; boreal forests of balsam fir; patches of jack-pine/black spruce; and extensive northern white-cedar in lowlands. Moose forage heavily on most of the common broad-leaf tree and shrub species, but only on one common conifer, balsam fir.

### **Impacts of browsing by moose**

Moose impacts on common, widespread deciduous species are most severe on quaking aspen, white birch, mountain ash, mountain maple, serviceberry, cherry species, and beaked hazel; and somewhat less so on yellow birch, sugar maple, Canada fly honeysuckle, and bush honeysuckle; but almost nil on thimble berry, speckled alder, and all bog shrubs. Probably most critical is the stripping of deciduous leaves during the growing season, being more damaging than removal of twigs from those same plants in winter. One rather rare species, the highly preferred, big-leaf aspen, appears vulnerable to complete extirpation from the island by moose.

Severe impact on conifers involves only two species — balsam fir, which would be the most abundant tree were its reproduction not so heavily suppressed, particularly at the western end, and American yew, which has been reduced to tiny, very short twigs without ever bearing “fruit.” White pine, only sparsely present, shows moderately heavy browsing on saplings, but scattered individuals are regularly outgrowing the moose. Cropping of conifers in winter does involve removal of productive foliage, more akin to summer leaf stripping than winter twig removals. White and black spruce and jack pine, plus junipers are essentially never used. Red pine, very rare there, is apparently not used much if at all.

### **Long-term effects upon forests**

Moose browsing has suppressed reproduction in most upland tree species along with the most common conifer since the late 1920s, when the recently arrived moose reached an unusually high number. The overall effect has been to alter composition and structure of much of the island's forest, an effect that can only be seen as mature trees that were present before moose arrived eventually die out, but are

not being replaced by their own or other palatable species, as would normally occur.

Successful escape of highly palatable trees occurred only once in the 20th century. That was after a very large fire in 1936, followed by re-vegetation by birch and aspen so widespread that moose could not suppress the saplings. Otherwise, inability of young trees to escape the reach of moose has led to openings in the canopy, forming what we call “spruce-moose savannas.”

In these savannas, most woody plants remain as hedged shrubs, while herbage becomes abundant, as in meadows. This affords moose prolonged access to browse, but the plants eventually decline in size and productivity due to chronic, year-round (for deciduous ones) cropping. Meanwhile, slowly but surely, white spruce, being totally unpalatable and free of competition from other woody species, occupies the site, eventually dominating the canopy. This creates a habitat of no value to moose other than as cover.

When, after many years, the spruce reaches mature size and high density, it becomes subject to wildfire. However, the time lapse since preferred browse species died out may be so long that their roots and seeds may no longer be present, hence leaving the post-fire vegetation with little preferred forage for moose as normally occurs where mixed stands burn. There has not been time for observing whether this will occur at Isle Royale, i.e. a couple of centuries, but it is certainly a relevant question for researchers at Isle Royale.

The island, as a national park, cannot be managed to produce vegetation that favors certain valued animals, as might be done on private or Forest Service land. In contrast, the island is a setting where diverse or unexpected trends in natural ecosystems can be studied without concern for a particular end

result (as long as said trends are not caused by us humans).

Should you visit the west end of Isle Royale, no doubt stopping at the Windigo Ranger Station, a good impression of moose effects can be seen at a moose-exclosure located close-by. Constructed in 1979 where prior vegetation was similar to that outside the exclosure today, you can appreciate that as soon as moose were excluded, long-hedged firs, aspens, and other preferred hardwoods grew quickly, reaching their nearly full height within 15 or so years, while the vegetation outside has remained as before — a savanna. Around the outside, the mature firs and most mature white birch present in 1979 have since died and fallen.

*Note: A power-point with colored graphics was used for this talk. For a copy, contact Peter at [pajordan@umn.edu](mailto:pajordan@umn.edu)*

## Tip of the season

by Beth Nixon

“It won’t hurt if I just dig one.” Whether digging wild orchids on private property or in public places, taking one is a bad idea. Many of us love to own things of beauty and pleasure. Orchids seem to foot that bill for native plant lovers. We must be mindful that their beauty is beholden to like kinds, other orchids, mossy surfaces, undescribed networks of subterranean hyphae, the ecology of rotting matter — a symbiology of mystery we can never create on our windowsills and gardens. Choose not to extract the mystery and awe from wild places. Cultivated orchids are commercially available, but remind yourself and others to check sources before purchasing. Search for a meadow full of wild orchids that can only bring beauty as a collective whole. Enjoy them, but take only pictures.

## Rock-pool plants

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of photosynthesis while it is a submerged aquatic plant (as do species of *Isoetes*).

**Mud plantain** (*Heteranthera limosa*) — This species in the *Pontederiaceae* was previously known from only two locations in Minnesota. MCBS documented two new populations of this species in rock outcrop pools sustained by runoff and groundwater seepage in Rock County.

**Slender plantain** (*Plantago elongata*) — This tiny, annual, stemless plantain is a western species that reaches the easternmost edge of its United States range in southwest Minnesota. Previously known from one recent and two old collections in Minnesota, MCBS documented just one new population in spite of much searching.

Though more populations of these rare plants have been located in recent years, they are confined to a very specific habitat with a very limited range in Minnesota. Furthermore, the persistence of the native flora on many rock outcrops in Minnesota’s prairie region is threatened from overgrazing or rock mining. Efforts to protect these special habitats have included public land acquisition, environmental review of proposed mines, and a recent and successful program to purchase perpetual conservation easements in Renville and Redwood counties.

Public awareness and concern about the plight of these places have been instrumental for furthering the cause of protecting these habitats in the Minnesota River Valley. It appears that there is somewhat less public awareness about the unique outcrop flora in the inner Prairie Coteau region. Continued public education about these places and assistance for landowners who would consider protection options should be a priority.

# Birds need native plants

*"Bringing Nature Home: How native plants sustain wildlife in our gardens," by Douglas W. Tallamy, is published by Timber Press.*

*Book review by Joel Dunnette*

I'm a nature nut and enjoy native plants for themselves and for their embodiment of our place in the world. I started liking native plants for the wonder and variety of interesting insects they attract and support. But I now have another reason to plant, maintain and encourage the use of native vegetation.

In "Bringing Nature Home," Dr. Tallamy explains in an entertaining way how the diversity of our native plants supports a much wider variety and volume of insects than non-native plants.

Why should people care about this? Well, although more people enjoy birds than insects, the availability of an abundance and variety of insects is critical to birds as they raise their young. Baby birds eat a lot — and what they eat is mostly insects.

Gardens of exotic flowers are starving the wild birds so many of us love. Yards of mowed grass, with a few non-native shrubs, are no place to raise a bird family. Native plants have evolved to live with native insects. Each species has its own kinds of insects that live on and with it. These insects not only use native plants, but do so without destroying them.

Native plants support production of two to five times more insect food than do non-natives. Non-native flowers are unfamiliar to our insects and may be "pest free," but what many people call pests are essential to raising young birds. In fact, most insects are not harmful to humans or crops. We assume guilt by association, so most people try

# Field trips planned

*by Ken Arndt*

We have a great line-up of field trips this summer. Due to limited registration, all of the field trips are for MN NPS members only, except the May trip to Barn Bluff in Red Wing. That trip is open to the public. For more detailed information on any of the field trips or to register for a trip, go to the field trip page of our website ([www.mnnps.org](http://www.mnnps.org)). You can also register at our general meetings.

On April 26, at 1 p.m., Barr Engineering Senior Ecologist and MN NPS board member Daniel Jones will lead a hike in **Nerstrand Big-Woods State Park** near Northfield. Participants will view the early spring ephemerals of this maple-basswood community and get to brush up on their woodland plant ID with Daniel.

**"Walk with Thoreau"** in **Red Wing** May 24. Writer Dan Dietrich and naturalist Bruce Ause will lead this trip, which is sponsored by the Anderson Center in Red Wing. This event is free and open to the public. The day will begin at 9 a.m. in the main gallery of the Anderson Center with brunch and a brief talk by Dietrich on Thoreau's trip to Red Wing. This will be followed by a walking tour of Barn Bluff from 10:30 a.m. to 12 noon. Led by Dietrich and Ause, the tour will retrace Thoreau's exploration of the bluff and locate the many plants and flowers noted in his journals and letters.

The weekend of June 7 and 8 will be a return trip to the **Prairie Coteau** region of southwestern Minnesota with DNR Botanists/Plant Ecologists Fred Harris and Nancy Sather. From rock outcrops at Touch the Sky National Wildlife Refuge to calcareous fens at Sarah Mason Wildlife Management Area and a few other sites between, participants will have a close look at many different plant communities. Surveys for the prairie moonwort (*Botrychium campestre*) and small white lady's slipper orchid (*Cypripedium candidum*) are also planned.

On July 19, we will go north to George Crosby Manitou and Split Rock Lighthouse State Parks with DNR Botanists/Plant Ecologists Chel Anderson and Lynden Gerdes, to follow up this year's symposium topic, the **North Shore Highlands**. This all-day hike will take society members

to kill nearly every insect they see. This harms the birds we love.

If we want a world filled with wonder and a variety of creatures, and we continue to take up nearly all productive land with our houses and shopping malls, then we need to provide the native plants that are essential for the survival of the species we value.

This book is full of useful information, but is also fun to read. Dr. Tallamy is an entomologist who truly loves nature and clearly communicates that love. If you care about birds even a little, you will enjoy reading this book.

to the interior forests of the north shore and down to the shore of Lake Superior itself for a look at the many different plants found in this part of northern Minnesota.

Saturday, Aug. 2, Steve Eggers, senior ecologist for the St. Paul District Corps of Engineers, will lead a canoe trip in **Weaver Bottoms**, along the Mississippi River in southeastern Minnesota. Members will canoe into the bottoms, where American lotus and cardinal flower will be in bloom, nine-foot tall wild rice stands will grace the river, and a diverse assemblage of emergent, floating and submergent aquatic vegetation will be seen.



# Plant Lore

by Thor Kommedahl

## What is starflower?

Starflower is *Trientalis borealis*, in the primrose family, a common spring flower native to Minnesota woodlands.

## How did it get its names?

*Trientalis* in Latin means “a third of a foot” because it averages about four inches tall; *borealis* means “of the north,” and the plant is appropriately called northern starflower. Because the petals resemble a seven-pointed star, it is named starflower. Some refer to this plant as a “plant of sevens” because it usually has seven petals, seven sepals, seven anthers, and sometimes even seven leaves. Plants with flower parts in sevens are rare.

## What does the plant look like?

It is a four-inch tall perennial with rhizomes and tubers (one to four per plant). The four to seven simple leaves appear at the stem tip in a whorl without petioles, or very short ones, and are slender and conspicuously veined. Usually single, sometimes two to three, white flowers with five to nine, but usually seven, petals per flower appear from May to June. Pollination is by native bees. Fruits are berry-like capsules splitting into five sections with many tiny seeds. However, asexual reproduction by tubers is more important than reproduction by seeds.

## Where do these plants grow?

They are understory plants in rich woods and bogs in conifer-hardwood and boreal forests in North America and are abundant in patches.

## Are they medicinal or poisonous?

The tubers are neither edible nor poisonous and have no medicinal properties.

## Is it a garden plant?

Gardeners shy away from this plant in gardens because plants

aren't showy enough, have a short blooming time, and go dormant in mid-summer. Starflower is susceptible to smut caused by *Urocystis trientalis*, and voles prefer to eat infected over noninfected plants.



*Trientalis borealis* photo by Peter Dziuk

## Wetland quality

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methods. Chief among these is the Floristic Quality Assessment (FQA). FQA relies on the Coefficient of Conservatism which is a numerical rating of an individual species' affinity to natural habitats. FQA may allow us to move beyond depression marshes and assess all the different wetland types in Minnesota.

For more information on the MPCA wetland biological monitoring program, please visit our webpage at: [www.pca.state.mn.us/water/biomonitoring/bio-wetlands.html](http://www.pca.state.mn.us/water/biomonitoring/bio-wetlands.html)

# Native Plant Sale is June 5

by Ken Arndt

It is time to get ready for this year's MN NPS native plant sale at our June 5 meeting. This annual sale helps raise money for the Society. We encourage members to divide or propagate their own native plants and donate them to our sale.

We will hold the sale outside of Dakota Lodge on the patio area that overlooks Thompson Lake, as we did last year. We ask that all plant material arrive by 6 p.m., so our volunteers will have time to get the sales area set up. The sale will take place after our speaker's presentation. All members and non-members will be allowed to participate. When the plant sale begins, volunteers will be first to select plants, followed by those who donated plant material, then by other members, and finally by visitors.

We ask that only native plants from the region (Minnesota/western Wisconsin) be included in the sale. No cultivars (horticultural selections) should be brought to the sale (e.g. 'Goldstrum' black-eyed Susan or 'Gateway' Joe-Pye-weed). Plants should come from your own property or other private property with that owner's permission, not from public property. Do not bring any plants dug without permission.

Place the plants in typical nursery containers with adequate water and soil. Label them with both common and scientific names. Prices will be marked by volunteers. We will have plant guides to help with labeling.

Try to dig your plants at least two to four weeks before the sale, especially if you are dividing your plants. That way the plants have time to get through transplant shock.

A few volunteers are needed to help with setting up the sales area and assisting members with their plants. To volunteer, contact Ken Arndt at [ken.arndt@mnnps.org](mailto:ken.arndt@mnnps.org)

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Spring 2008

