Native Plants for Sustainable Landscapes: Establishment and Management of Lakeshores and Gardens

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Table of Contents

Sustainable Landscapes and Management ......................... 3
Benefits of Sustainable Landscapes .......................... 4
Site Considerations for Designing a Sustainable Landscape 4
  A brief list of plants found in upland, wet meadow, emergent, and submerged zones (Table) .......................................................... 6
  Some common native plants (Table) ........................................ 8
Implementing a Landscape Plan ................................. 9
Maintaining the Sustainable Landscape ..................... 11
  Examples of common beneficial insects (Table) .................. 12
Appreciating the Sustainable Landscape ..................... 12
Native Plant List ..................................................... 13
Sources of Native Seeds and Plants ......................... 18
Suppliers of Erosion Control Materials ..................... 18
Information Resources ............................................. 18
  Videos ............................................................................. 18
  Publications ...................................................................... 19
  Organizations and web sites ........................................... 19
Native plants can be used around homes and in gardens to create sustainable landscapes. Most native plants are perennial and have extensive root systems that hold soil and slow runoff. Persistent stems, leaves, and flower parts which remain through the winter also reduce runoff, especially in the spring, as snow melts and rainfall begins before new growth is present. Particulate matter accumulates around these native plants and the plants themselves absorb chemicals such as nitrogen and phosphorous that would otherwise enter the runoff.

Native plants have many positive characteristics. Native plants used as buffer strips along water margins slow runoff and absorb nutrients. They are also self-sustaining, and they support wildlife including beneficial insects, pollinators, and native birds.

Successfully growing native plants requires an understanding of the evolutionary adaptations plants make to specific light and soil moisture conditions. Prairie plants have adapted to dry, sunny uplands, while woodland plants tolerate shade. Wet meadows contain plants species tolerant of sun and wet soils, while plant species in the emergent zone grow with their stems above water and their roots in water. Submerged or floating leaf plants have stems and leaves under water with some parts above water.

Once established, these landscapes can be managed by using principles of Integrated Pest Management, which emphasize lower pesticide usage. These sustainable landscapes require less chemical treatment, reducing the amount of chemicals put into the environment which have nontargeted effects on the ecosystem, its plants, and its animals.

This bulletin contains information on sustainable landscaping in watersheds, sustainable management of such landscapes, lists of vendors who sell native plants and erosion control materials, and an extensive list of recommended native plants. Landscapes and their management are described for drier upland gardens as well as shoreline buffer strips.
Benefits of Sustainable Landscapes

Sustainable Landscapes Protect Water Quality
• **Erosion is reduced.** Since upland plants hold soil and shoreline plants reduce wave and ice action, erosion is reduced and soil is less likely to erode into the water.

• **Runoff volume is reduced.** Upland landscapes and shoreline buffer strips slow down water so it soaks into the soil, rather than racing down to the lake.

• **Herbicides, pesticides, and fertilizers are reduced or eliminated from runoff.** Plants adapted to their environment often require fewer pesticide and fertilizer treatments.

• **Plant nutrients are removed from lake water.** Plants absorb nutrients which would otherwise increase the growth of water-clouding algae.

Sustainable Landscapes Increase Biodiversity
• **Increased numbers of plant and animal species help make a landscape sustainable.** A variety of plant species provide food and shelter for birds and beneficial insects which reduce insect pest outbreaks.

• **Fish habitat is enhanced with aquatic vegetation.** Emergent vegetation provides habitat for spawning fish and fry. Water quality improvements increase fish production.

• **Native plants and animals are conserved.** Many plants have become rare as their habitats have been converted to farms and towns. Native plants in home landscapes support a food web including birds, insects, and other animals.

Sustainable Landscapes Provide Social Benefits
• **Property values are increased.** Beautiful vistas from the home and water are created by the use of native plants. The variety of colors and plant forms, the energy and activity of birds and insects, and the seasonal changes of both plants and animals provide diversity and visual enjoyment. The house may be partly hidden by vegetation for greater privacy and a natural looking lakeshore. Trees and shrubs reduce noise of jet skis and boats. A landscaped lot adds value to the house.

• **Little maintenance is required on established landscape.** Initially, some weeding may be necessary. Once the plants have become established, there will be less time spent on mowing, planting of annual bedding plants, chemical spraying, and trips to the compost site with leaves and grass clippings. Less time, energy, and money is spent on maintenance and time is gained for backyard butterfly or bird watching, or other activities.

When designing a sustainable lakeside landscape, information is needed about the lot and adjacent lakeshore, including water runoff patterns, so that erosion can be prevented and water quality improved. Microhabitats must be identified so that suitable plants can be chosen and adequate numbers of plants can be grown or ordered. The ordinary high water level of the lake must also be determined since Minnesota Department of Natural Resources regulations apply to areas below this level. All this information can be organized and summarized into a plan based on your needs and preferred property uses. If desired, there are landscape design firms which can be hired to help develop plans.

The Minnesota Department of Natural Resources has an excellent book on landscaping, *Lakescaping for Wildlife and Water Quality*, by Carrol L. Henderson, Carolyn J. Dindorf, and Fred J. Rozumalski. Ordering information can be obtained from the Gift Shop (651-228-9165) or Minnesota’s Bookstore (651-297-3000).
Planning to complement activities

Landscape to complement your activities. For example, if a large lawn is not needed, parts of an existing lawn can be replaced with ground covers, perennials or shrubs. Note areas where views may be enhanced or screened with vegetation. Do not disturb areas with natural vegetation. Plan to install bird feeders and bird houses and benches to sit on to enjoy the view.

Accessories in the landscape are signs of a cared for and well-managed property. These elements of care show neighbors that the property is not neglected, and they are especially valuable in unconventional landscapes.

Correcting and avoiding erosion problems

Storm water management needs attention since water carries soil into the lake and cuts gullies. If serious erosion problems are developing, seek the advice of your watershed district, or county extension specialists.

Some erosion can be reduced by proper landscaping. Tour your property during heavy rain to observe runoff patterns. Work with your natural topography, and keep water quality in mind.

Steep slopes need careful planting to control erosion. Gardens should not be located on steep slopes unless the area is terraced perpendicular to the slope. Paths on the shore from house to water line should run diagonally rather than straight down a hill. Eroded paths should be replaced with steps. Hard surfaces that allow water to run off should be replaced with porous surfaces such as gravel or mulch.

Selecting plants

Native plants are hardy, do not require fertilizer once established, and provide food and habitat for native animals. Most native species are perennial, and they also maintain themselves by reseeding on the same site. In contrast, popular bedding plants such as petunias and geraniums often provide little value for wildlife and must be replanted each year.

Though many exotic perennials can be adapted to local climates, they may not be as valuable in supporting beneficial insects such as predators, pollinators, and butterflies. Horticultural varieties of native plants, which could also be used, have been altered in ways that reduce their value as food to animals. For instance, double flowers provide little nectar to butterflies, bees, and beneficial insects.

It is also important to know that the use of some exotic plant species is illegal. Buckthorn and purple loose-strife, for example, are exotic plants that escaped from cultivation and have become serious pests in natural areas.

Identifying microhabitats or zones

Habitats within the landscape need to be identified based on light and moisture regimes so that proper plant species can be added to each such microhabitat. Dry, sunny locations support prairie vegetation, while areas under trees are preferred by shade-tolerant species. Places with wet soils support wet meadow vegetation. An emergent zone is an area of shallow water. And a submerged, floating leaf zone, supports plants that grow through the water column to the surface.
Table 1. A brief list of plants found in upland, wet meadow, emergent, and submerged zones.

<table>
<thead>
<tr>
<th>Zone 1: upland (prairie or woodland)</th>
<th>Zone 2: wet prairie soils (wet meadow)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Trees</strong></td>
<td><strong>Trees</strong></td>
</tr>
<tr>
<td>bur oak</td>
<td>Picea mariana</td>
</tr>
<tr>
<td>common chokecherry</td>
<td>Populus deltoides</td>
</tr>
<tr>
<td>red maple</td>
<td>Amelanchier alnifolia</td>
</tr>
<tr>
<td>red oak</td>
<td>Acer rubrum</td>
</tr>
<tr>
<td>white oak</td>
<td>Quercus bicolor</td>
</tr>
<tr>
<td>wild plum</td>
<td></td>
</tr>
<tr>
<td><strong>Shrubs</strong></td>
<td></td>
</tr>
<tr>
<td>American elderberry</td>
<td></td>
</tr>
<tr>
<td>American highbush cranberry</td>
<td></td>
</tr>
<tr>
<td><strong>Prairie grasses for sun</strong></td>
<td></td>
</tr>
<tr>
<td>big bluestem</td>
<td>Andropogon gerardii</td>
</tr>
<tr>
<td>Indian grass</td>
<td>Sorghastrum nutans</td>
</tr>
<tr>
<td>little bluestem</td>
<td>Schizachyrium scoparium</td>
</tr>
<tr>
<td>sideoats grama</td>
<td>Bouteloua curtipendula</td>
</tr>
<tr>
<td><strong>Herbaceous plants for sun</strong></td>
<td></td>
</tr>
<tr>
<td>anise hyssop</td>
<td>Agastache foeniculum</td>
</tr>
<tr>
<td>bergamot</td>
<td>Monarda fistulosa</td>
</tr>
<tr>
<td>butterfly milkweed</td>
<td>Asclepias tuberosa</td>
</tr>
<tr>
<td>Culver’s root</td>
<td>Veronicastrum virginicum</td>
</tr>
<tr>
<td>gray-head coneflower</td>
<td>Ratibida pinnata</td>
</tr>
<tr>
<td>prairie blazing star</td>
<td>Liatris pycnostachya</td>
</tr>
<tr>
<td>prairie smoke</td>
<td>Geum triflorum</td>
</tr>
<tr>
<td>purple coneflower</td>
<td>Echinacea augustifolia</td>
</tr>
<tr>
<td>purple prairie clover</td>
<td>Dalea purpurea</td>
</tr>
<tr>
<td>thimbleweed</td>
<td>Anemone cylindrica</td>
</tr>
<tr>
<td><strong>Herbaceous plants for woodland shade</strong></td>
<td><strong>Herbaceous plants for woodland shade</strong></td>
</tr>
<tr>
<td>Canada wild ginger</td>
<td>Asarum canadadense</td>
</tr>
<tr>
<td>common blue violet</td>
<td>Viola papilionacea</td>
</tr>
<tr>
<td>Jacob’s ladder</td>
<td>Polemonium reptans</td>
</tr>
<tr>
<td>mayapple</td>
<td>Podophyllum peltatum</td>
</tr>
<tr>
<td>true Solomon’s seal</td>
<td>Polygonatum biflorum</td>
</tr>
<tr>
<td>wild geranium</td>
<td>Geranium maculatum</td>
</tr>
<tr>
<td><strong>Zone 2: wet prairie soils (wet meadow)</strong></td>
<td><strong>Zone 4: submerged or floating leaf</strong> (for wet soils always under water)</td>
</tr>
<tr>
<td><strong>Shrubs</strong></td>
<td><strong>Shrubs</strong></td>
</tr>
<tr>
<td>buttonbush</td>
<td>Cephalanths occidentalis</td>
</tr>
<tr>
<td>meadowsweet</td>
<td>Spirea alba</td>
</tr>
<tr>
<td>pussy willow</td>
<td>Salix discolor</td>
</tr>
<tr>
<td>red osier dogwood</td>
<td>Cornus sericea</td>
</tr>
<tr>
<td><strong>Grass</strong></td>
<td><strong>Grass</strong></td>
</tr>
<tr>
<td>prairie cord grass</td>
<td>Spartina pectinata</td>
</tr>
<tr>
<td><strong>Herbaceous plants (and others)</strong></td>
<td><strong>Herbaceous plants (and others)</strong></td>
</tr>
<tr>
<td>blue flag iris</td>
<td>Iris versicolor</td>
</tr>
<tr>
<td>blue vervain</td>
<td>Verbena hastata</td>
</tr>
<tr>
<td>bottlebrush sedge</td>
<td>Carex comosa</td>
</tr>
<tr>
<td>cardinal flower</td>
<td>Lobelia cardinalis</td>
</tr>
<tr>
<td>Culver’s root</td>
<td>Verónicastraum virginicum</td>
</tr>
<tr>
<td>great blue lobelia</td>
<td>Lobelia siphilitica</td>
</tr>
<tr>
<td>Joe-pye weed</td>
<td>Eupatorium maculatum</td>
</tr>
<tr>
<td>marsh marigold</td>
<td>Caltha palustris</td>
</tr>
<tr>
<td>spike rush</td>
<td>Eleocharis species</td>
</tr>
<tr>
<td>swamp milkweed</td>
<td>Asclepias incarnata</td>
</tr>
<tr>
<td><strong>Zone 3: emergent lake margins</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Herbaceous plants (and others)</strong></td>
<td></td>
</tr>
<tr>
<td>arrowhead</td>
<td>Sagittaria latifolia</td>
</tr>
<tr>
<td>bur-reed</td>
<td>Sparganium americanum</td>
</tr>
<tr>
<td>Canada bluejoint grass</td>
<td>Calamagrostis canadensis</td>
</tr>
<tr>
<td>cattail</td>
<td>Typha latifolia</td>
</tr>
<tr>
<td>green bulrush</td>
<td>Scirpus atrovirens</td>
</tr>
<tr>
<td>lake sedge</td>
<td>Carex lacostris</td>
</tr>
<tr>
<td>pickerelweed</td>
<td>Pontederia cordata</td>
</tr>
<tr>
<td>river bulrush</td>
<td>Scirpus fluitilis</td>
</tr>
<tr>
<td>soft rush</td>
<td>Juncus effusus</td>
</tr>
<tr>
<td>water plaintain</td>
<td>Alisma plantago-aquatica</td>
</tr>
<tr>
<td>wool grass</td>
<td>Scirpus cyperinus</td>
</tr>
<tr>
<td><strong>Zone 4: submerged or floating leaf</strong></td>
<td><strong>Zone 4: submerged or floating leaf</strong> (for wet soils always under water)</td>
</tr>
<tr>
<td>American lotus</td>
<td>Nelumbo lutea</td>
</tr>
<tr>
<td>spatterdock</td>
<td>Nuphar advena</td>
</tr>
<tr>
<td>white waterlily</td>
<td>Nymphaea odorata</td>
</tr>
<tr>
<td>wild celery</td>
<td>Valisneria americana</td>
</tr>
</tbody>
</table>
Four specific zones are defined:

- **Zone 1**: prairie if sunny, or woodland if shady
- **Zone 2**: wet meadow, wet soil
- **Zone 3**: emergent, shallow water
- **Zone 4**: submerged, aquatic, with soil that is never exposed

Plants must be selected which are suitable for a location, and suitability is based on actual observations of soil moisture and sun or shade conditions. Some recommended species are listed in Table 1 and Table 2. A more comprehensive and extensive native plant list begins on page 13.

Trees and shrubs can provide shade, frame your view, and hold soils on steep slopes. Grasses, sedges and flowering perennials can be used where an unobscured view is important.

**Identifying the lake boundary**

You need to locate the ordinary high water level of any body of water where you seek to landscape a shoreline. This is considered to be the highest water level that the lake has maintained for enough time to leave evidence on the landscape.

The high water level is considered to be the legal boundary of the lake bed. It is often the highest point reached by emergent plant species such as sedges, rushes, and cattails. The Minnesota Department of Natural Resources has jurisdiction over all areas below that ordinary high water level. A permit from the DNR is required to remove or add any plants in this area. Plantings above the ordinary high water level are subject to local ordinances, if any exist.

**Using a buffer strip of vegetation**

Buffer strips are natural unmowed areas between the water’s edge and a lawn or hard surface such as a driveway or patio. Runoff will pass through the buffer strip to reach the water, but its speed will be reduced and much of the sediment it carries will be captured by the buffer strip.

A buffer strip should be at least 30 feet deep, reaching up the slope from the water’s edge and extending as far as possible along the shoreline. For example, if you have 100 feet of shoreline, you should reserve 25 feet or less of shoreline for lake access, and convert the remainder to buffer. Wider buffer strips will be even more beneficial. Even simply leaving a strip unmowed will allow the growth of taller and denser plants which will slow down runoff and intercept sediment.

The use of native plants will make buffer strips more attractive and increase the area’s biodiversity. The most effective buffer strips consist of vegetation with dense root systems and many erect stems which persist through fall and spring rains. Multiple layers of trees and shrubs are most effective against soil erosion on steep slopes.

Buffer strips along lake margins have also been demonstrated to reduce access by geese to lawns. The University of Minnesota’s Department of Fish and Wildlife website has more information on this subject (www.fw.umn.edu/extension/indept.html).
Table 2. Some common native plants.

<table>
<thead>
<tr>
<th>Plant Name</th>
<th>Ecological Type</th>
<th>Habitat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solidago species</td>
<td></td>
<td>prairie</td>
</tr>
<tr>
<td>Aster Novae-anglia</td>
<td></td>
<td>New England aster</td>
</tr>
<tr>
<td>Ratabida pinnata</td>
<td></td>
<td>gray-headed coneflower</td>
</tr>
<tr>
<td>Veronicastrum virginicum</td>
<td></td>
<td>Culver's root</td>
</tr>
<tr>
<td>Liatris species</td>
<td></td>
<td>blazing star</td>
</tr>
<tr>
<td>Monarda fistulosa</td>
<td></td>
<td>wild bergamot</td>
</tr>
<tr>
<td>Andropogon gerardii</td>
<td></td>
<td>big bluestem</td>
</tr>
<tr>
<td>Veronica fasciculata</td>
<td></td>
<td>ironweed</td>
</tr>
<tr>
<td>Iris versicolor</td>
<td></td>
<td>blue flag iris</td>
</tr>
<tr>
<td>Lobelia cardinalis</td>
<td></td>
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<tr>
<td>Carex comosa</td>
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</tr>
<tr>
<td>Sparganium americanum</td>
<td></td>
<td>bur-reed</td>
</tr>
<tr>
<td>Alisma plantago-aquatica</td>
<td></td>
<td>water plantain</td>
</tr>
<tr>
<td>Sagitaria latifolia</td>
<td></td>
<td>arrowhead</td>
</tr>
<tr>
<td>Typha latifolia</td>
<td></td>
<td>cattail</td>
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<tr>
<td>Nymphaea odorata</td>
<td></td>
<td>white waterlily</td>
</tr>
<tr>
<td>Valisneria americana</td>
<td></td>
<td>wild celery</td>
</tr>
<tr>
<td>Nelumbo lutea</td>
<td></td>
<td>American lotus (protected specie)</td>
</tr>
</tbody>
</table>

Note: Ecological types: prairie, wet meadow, emergent, submergent, floating leaf.
Implementing a Landscape Plan

Obtaining plants and seeds
As native plant landscaping increases in popularity, more nurseries are propagating and selling native plants locally and by mail. It is best to buy plants that are propagated from plants native to Minnesota since they are better adapted to our region. Although it may be tempting, do not remove plants from the wild unless you have a permit.

Plants can be raised from seed. Seeds may be purchased from suppliers, or collected on private property with the landowner’s permission, as long as this can be done without harming wild populations. Seeds from endangered, threatened, or special-concern species must not be collected, and these species are not included on the plant lists in this publication.

Most seeds of native plants require a cold treatment before they will germinate. You will likely need to mix the seeds with damp sand and refrigerate them for two months. Alternatively, seeds can be planted in pots in the fall, covered with mulch, and left outdoors for the entire winter in a protected, shaded spot, or in an unheated garage. Uncover the pots in the spring and keep them watered.

Planting prairie, woodland and wet meadow
Remove existing vegetation before planting to increase success. Roots of existing plants can otherwise compete with tender young roots of newly planted vegetation.

Sod and weeds can be removed by hand, by rototilling, or by covering them with plywood and/or black plastic sheets for two months or more. In areas that are rototilled, care must be taken to prevent erosion and reduce runoff. Alternatively, herbicides can be used, but care must be taken to prevent herbicides from entering the water. If herbicides have been used, wait two weeks before planting.

Areas which are overgrown with reed canary grass or purple loosestrife are particularly difficult to plant due to the intense competition from these weeds. These plants may be removed mechanically or with the use of herbicides.

It is best to plant on a drizzly or overcast day. You can improve the success of your planting by:

- not allowing the plants to dry out before planting
- providing ample room in each planting hole
- not planting too deeply; keeping the plant at the same level it had in the pot
- protecting the plants from strong winds
- mulching before planting, which is much faster than mulching after planting
- watering immediately, then daily for two weeks
- continuing to water new plants until they are well established

For spacing, one plant per square foot is recommended, but denser plantings will cover the ground faster, especially on slopes. Most plants grow slowly at first as they develop roots, so small transplants yield more rapid results than direct seeding. Three years may be needed for some plants to mature.
Direct seeding of prairie and wet meadow plants may be used to cover large areas. Spring and fall are the best times for seeding in Minnesota. You can broadcast seed by hand or use a spreader on prepared soil. Ensure good seed-to-soil contact by lightly raking the seed in, then rolling with a lawn roller. Cover the seeded area with a light mulch of weed-free straw.

**Planting the emergent and submerged zone**

All aquatic areas of lakes and areas below the ordinary high water level are regulated by the Minnesota Department of Natural Resources. A permit is required to plant or remove vegetation, to use herbicides, and to install wavebreak structures.

Even with a permit, you need to be aware that revegetation in the emergent and submerged zones is not as well researched as are prairie plantings. Extra care must be taken to prevent sediment from entering water by placing straw bales or filter fences between the planting area and water.

Undesired vegetation in the emergent zone can be removed by hand or by heavy mulching with plywood or black plastic left in place for two months before planting. Wetland soils should not be tilled. Herbicide use is not recommended and requires DNR approval.

Areas with heavy wave action, whether natural or due to boat traffic, may require wavebreaks such as brush bundles, coconut fiber logs, or plywood held in place with a PVC frame for a period of time so that plants will not be washed away before they take root. Plants can be planted directly into coconut fiber logs or biodegradable erosion mats, and a list of possible suppliers is provided on page 18 of this publication.

Remember that different bottom sediments influence wave action. Area with sandy bottoms often have higher wave action, which could be reduced if aquatic plants colonize the area.

In the emergent and submerged zones, using plants, rhizomes (underground stems with buds) or tubers, rather than seeds, is recommended. Seeds of most emergent plants will not germinate under water, so unless the water level can be controlled, you must wait for a dry period to plant them.

Plants for emergent and submerged zones should also be planted as soon as possible after you receive them, and should be kept cool and moist until they are planted. Emergent plants must have some of their leaves above the water in order to start growth, although they may spread into deeper waters later. Do not clip or prune them. Tubers of arrowhead, bulrushes, and waterlilies need to be planted by pushing the tubers firmly into the mud or sand.

Plants, tubers, and rootstocks may be held in place by staking them down, tying them to bricks using cotton string, or placing them in cheesecloth bags weighted with rocks. Some suppliers sell tubers, rhizomes, or plants with weights attached. These can be dropped directly into the water in areas protected from wave action. As roots develop, plants will be held in place naturally.
Maintaining the Sustainable Landscape

Long-term sustainable management

Watering may be necessary during the first season of a new planting, even in areas close to a lake. In general, native plants will gradually out-compete any weeds present, but it is best to remove as many weeds as possible by hand before they develop deep roots.

Once established, prairie restorations may be mowed or burned in fall or spring to prevent invasion of trees and exotic grasses, but burning requires a permit and you must check both local ordinances and with the Minnesota Department of Natural Resources. Do not burn for the first three years after planting. Once the restoration is well established, burning every three years will maintain it. In urban areas where burning is prohibited, mowing in early spring can partly mimic fire conditions.

Components of sustainable management

There are four primary components to sustainable management: placing plants in their correct microhabitats, using low input lawn care, composting, and applying integrated pest management practices.

Use plants suitable to the microhabitat – Every site contains different microhabitats due to light and moisture differences. The use of perennial plants, especially natives, which are adapted to each microhabitat, reduces the need for fertilizers, herbicides, and pesticides. Replanting is typically not necessary since these plants persist for many years.

Low input lawn care – Limit lawn fertilization to low-phosphorus fertilizer applications in August and September. Water the fertilizer lightly into the soil or vegetation. Do not allow fertilizer to enter the water as it will increase the growth of algae and aquatic plants.

Longer grass survives better in the shade and during hot dry weather. Weeds are slower to invade longer grass, so mow to a height of 3 1/2 inches. If grass is tall, only take about one-third off the height at a time until the 3 1/2-inch maintenance level is reached. Leave grass clippings on the lawn, but keep them out of the water.

Remove weeds by hand rather than applying herbicide. In the shade, instead of grass use shade-tolerant species of ground cover.

Composting – Compost yard wastes and add the compost to gardens to improve soil structure, hold moisture, and provide a low level of nutrients. Purchased mulch retains water, but does not provide the same soil structure benefits as compost. Leave twigs, leaves and other litter on the ground under trees, but not on lawns. Stems and branches will slow the rate of runoff during spring snowmelt.

Integrated Pest Management (IPM) – When pest problems develop, control is best accomplished by Integrated Pest Management. IPM is a decision-based management system based on timing pesticide applications when insect pests are in earlier stages and most vulnerable. Biorational pesticides such as soaps, horticultural oils, Bacillus thuringiensis (Bt) bacteria, and Beauveria fungus are favored over conventional pesticides. These biorationals conserve beneficial insects such as predators and parasitoids.

Conventional pesticides should be used on a limited basis only when necessary, to avoid killing beneficial insects. Beneficial insects are predators, parasitoids, bees, and butterflies. Predators and parasitoids reduce pest insects. Bees and butterflies pollinate plants and add beauty to the landscape. Table 3 on the next page shows some examples of beneficial insects that utilize native plants.
Table 3. Some examples of common beneficial insects: predators, parasitoids and pollinators.

<table>
<thead>
<tr>
<th>Insect Order</th>
<th>Example</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odonata: adult dragonfly</td>
<td>predator</td>
<td>Odonata: aquatic nymph dragonfly, predator</td>
</tr>
<tr>
<td>Coleoptera: ground beetle</td>
<td>predator (eating a caterpillar)</td>
<td>Neuroptera: larval lacewing, predator</td>
</tr>
<tr>
<td>Hymenoptera: adult parasitic wasp</td>
<td>parasitoid</td>
<td>Hymenoptera: adult parasitic wasp, parasitoid (laying egg in an aphid)</td>
</tr>
<tr>
<td>Lepidoptera: swallowtail butterfly</td>
<td>pollinator</td>
<td>Lepidoptera: sphinx moth, pollinator (on a Michigan lily)</td>
</tr>
</tbody>
</table>

**Appreciating the Sustainable Landscape**

Over the long term, less maintenance will be required as a sustainable landscape of native plants continues to develop. You can chronicle the growth and evolution of your landscape, and the progress of plant and animal populations, by taking photos and recording observations of the site after planting, and then regularly for several years. Some plant species will thrive and others will prove unsuited to the site and vanish. Birds and insects will arrive and leave as the seasons change.

Always be aware of changes that may cause erosion and be ready to prevent them. Sustainable landscaping with native plants will enhance your enjoyment of your property and increase its value for years to come.
The table below provides information on the common names, species names, zones, light requirements, growth form, ease of growth, height, wildlife values, and other notes for various native plants. Forbs are herbaceous perennials. Shrubs are woody, usually less than 20 feet tall with multiple trunks. Trees are taller and usually do not form thickets. Wildlife value includes any special features of the plant which supply food or improve the habitat for birds, mammals, and beneficial insects such as parasitoids, predators, and butterflies.

### Native Plant List

<table>
<thead>
<tr>
<th>Common name</th>
<th>Species name</th>
<th>Zone</th>
<th>Sun</th>
<th>Growth</th>
<th>Easy?</th>
<th>Height</th>
<th>Wildlife Values</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>maidenhair fern</td>
<td>Adiantum pedatum</td>
<td>1</td>
<td>●</td>
<td>fern</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ostrich fern</td>
<td>Matteuccia pensylvanica</td>
<td>1</td>
<td>●</td>
<td>fern</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sensitive fern</td>
<td>Osmunda sensibilis</td>
<td>1</td>
<td>●</td>
<td>fern</td>
<td>y</td>
<td>3</td>
<td>butterfly</td>
<td>may be weedy, medicinal, small white flowers</td>
</tr>
<tr>
<td>interrupted fern</td>
<td>Osmunda claytoniana</td>
<td>1</td>
<td>●</td>
<td>fern</td>
<td>4</td>
<td></td>
<td>butterfly</td>
<td>interesting leaves</td>
</tr>
<tr>
<td>yarrow</td>
<td>Achillea millefolium</td>
<td>1</td>
<td>●</td>
<td>forb</td>
<td>2</td>
<td></td>
<td>butterfly</td>
<td>white flowers, long-blooming, licorice-scented leaves</td>
</tr>
<tr>
<td>anise hyssop</td>
<td>Agastache foeniculum</td>
<td>1</td>
<td>● to ●</td>
<td>forb</td>
<td>y</td>
<td>3</td>
<td>bee, butterfly</td>
<td>blue flowers, long-blooming, licorice-scented leaves</td>
</tr>
<tr>
<td>prairie onion</td>
<td>Allium stellaratum</td>
<td>1</td>
<td>● to ●</td>
<td>forb</td>
<td>2</td>
<td></td>
<td>bee, butterfly</td>
<td>white or pink flowers, slender leaves</td>
</tr>
<tr>
<td>lead plant</td>
<td>Amorpha canescens</td>
<td>1</td>
<td>● to ●</td>
<td>forb</td>
<td>y</td>
<td>3</td>
<td>bee, butterfly</td>
<td>purple flowers during the buffalo mating season</td>
</tr>
<tr>
<td>thimbleweed</td>
<td>Anemone cylindrica</td>
<td>1</td>
<td>● to ●</td>
<td>forb</td>
<td>2</td>
<td></td>
<td>bee, butterfly</td>
<td>white flowers in mid-spring</td>
</tr>
<tr>
<td>pasqueflower</td>
<td>Anemone patens (Pulsatilla nutalliana)</td>
<td>1</td>
<td>● to ●</td>
<td>forb</td>
<td>0.5</td>
<td>bee</td>
<td>signal for spring celebrations among the Dakota, mature plants difficult to transplant</td>
<td></td>
</tr>
<tr>
<td>wild columbine</td>
<td>Aquilegia canadensis</td>
<td>1</td>
<td>● to ●</td>
<td>forb</td>
<td>2</td>
<td></td>
<td>bee, butterfly, hummingbird</td>
<td>red and yellow flowers with long spurs, self-sows</td>
</tr>
<tr>
<td>Canada wild ginger</td>
<td>Asarum candadense</td>
<td>1</td>
<td>● to ●</td>
<td>forb</td>
<td>y</td>
<td>0.5</td>
<td>ground cover, roots taste like ginger, strange brownish-red flowers</td>
<td></td>
</tr>
<tr>
<td>butterfly milkweed</td>
<td>Asclepias tuberosa</td>
<td>1</td>
<td>● to ●</td>
<td>forb</td>
<td>3</td>
<td></td>
<td>butterfly</td>
<td>bright orange flowers, roots once used medicinally</td>
</tr>
<tr>
<td>heath aster</td>
<td>Aster ericoides</td>
<td>1</td>
<td>●</td>
<td>forb</td>
<td>2</td>
<td></td>
<td>bee, butterfly</td>
<td>small white flowers in late fall, heather-like leaves</td>
</tr>
<tr>
<td>calico aster</td>
<td>Aster lateriflorus</td>
<td>1</td>
<td>● to ●</td>
<td>forb</td>
<td>4</td>
<td></td>
<td>blossoms once used to treat insanity</td>
<td></td>
</tr>
<tr>
<td>New England aster</td>
<td>Aster novae-angliae</td>
<td>1</td>
<td>● to ●</td>
<td>forb</td>
<td>4</td>
<td></td>
<td>spreads rapidly, purple flowers in late summer, cut flower</td>
<td></td>
</tr>
<tr>
<td>sky-blue aster</td>
<td>Aster coelestialis</td>
<td>1</td>
<td>● to ●</td>
<td>forb</td>
<td>2.5</td>
<td></td>
<td>bee, butterfly</td>
<td>blue flowers in early fall</td>
</tr>
</tbody>
</table>

### Zones

- **zone 1** upland areas, prairie, dry, sun or woodland, shade
- **zone 2** wet meadow, wet soil
- **zone 3** emergent, lake margin, shallow water
- **zone 4** submerged or floating leaf, aquatic

### Light requirements (Sun)

- ○ = full sun, ● = part shade, ● = shade

### Growth form

- fern, forb (herbaceous perennial), grass, rush, sedge, shrub, tree

### Easy to grow?

- y = yes

### Height

- maximum height in feet

**Native Plant List**

Most of the plants listed are perennials. Forbs are herbaceous perennials. Shrubs are woody, usually less than 20 feet tall with multiple trunks. Trees are taller and usually do not form thickets. Wildlife value includes any special features of the plant which supply food or improve the habitat for birds, mammals, and beneficial insects such as parasitoids, predators, and butterflies.
<table>
<thead>
<tr>
<th>Common name</th>
<th>Species name</th>
<th>Zone</th>
<th>Sun</th>
<th>Growth</th>
<th>Easy?</th>
<th>Height</th>
<th>Wildlife Values</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>silky aster</td>
<td>Aster sericeus</td>
<td>1</td>
<td>☀</td>
<td>forb</td>
<td>1.5</td>
<td></td>
<td>bee, butterfly</td>
<td>purple flowers, silky gray-green leaves, once used to treat arthritis</td>
</tr>
<tr>
<td>blue false indigo</td>
<td>Baptisia australis</td>
<td>1</td>
<td>☀ to ☢</td>
<td>forb</td>
<td>3</td>
<td></td>
<td>bee</td>
<td>blue flowers</td>
</tr>
<tr>
<td>golden asters</td>
<td>Chrysopsis villosa (Heterotheca villosa)</td>
<td>1</td>
<td>☀</td>
<td>forb</td>
<td>2</td>
<td></td>
<td>yellow aster-like flowers</td>
<td></td>
</tr>
<tr>
<td>coreopsis</td>
<td>Coreopsis palmata</td>
<td>1</td>
<td>☀</td>
<td>forb</td>
<td>3</td>
<td></td>
<td>yellow flowers, short-lived but self-sows</td>
<td></td>
</tr>
<tr>
<td>white prairie clover</td>
<td>Dalea candida (Petalostemum candidum)</td>
<td>1</td>
<td>☀</td>
<td>forb</td>
<td>3</td>
<td></td>
<td>butterfly</td>
<td></td>
</tr>
<tr>
<td>purple prairie clover</td>
<td>Dalea purpurea (Petalostemum purpureum)</td>
<td>1</td>
<td>☀</td>
<td>forb</td>
<td>3</td>
<td></td>
<td>terrific bee and butterfly plant</td>
<td>little purple flowers with orange pollen, leaves fragrant when crushed</td>
</tr>
<tr>
<td>showy tick-trefoil</td>
<td>Desmodium canadense</td>
<td>1</td>
<td>☀ to ☢</td>
<td>forb</td>
<td>☐</td>
<td>5</td>
<td></td>
<td>pink flowers</td>
</tr>
<tr>
<td>dutchman's breeches</td>
<td>Dicentra cucullaria</td>
<td>1</td>
<td>☢</td>
<td>forb</td>
<td>0.5</td>
<td></td>
<td>leaves die back in summer</td>
<td></td>
</tr>
<tr>
<td>shooting star</td>
<td>Dodecatheon media</td>
<td>1</td>
<td>☀ to ☢</td>
<td>forb</td>
<td>1</td>
<td></td>
<td>early to bloom, slow to germinate, leaves die back in summer</td>
<td></td>
</tr>
<tr>
<td>purple coneflower</td>
<td>Echinacea purpurea</td>
<td>1</td>
<td>☀ to ☢</td>
<td>forb</td>
<td>☐</td>
<td>4</td>
<td>butterfly</td>
<td>root once used for toothache, now thought to stimulate immune system</td>
</tr>
<tr>
<td>boneset</td>
<td>Eupatorium perfoliatum</td>
<td>1</td>
<td>☀ to ☢</td>
<td>forb</td>
<td>☐</td>
<td>3</td>
<td>bee, butterfly</td>
<td>cut flower</td>
</tr>
<tr>
<td>queen-of-the-prairie</td>
<td>Filipendula rubra</td>
<td>1</td>
<td>☢</td>
<td>forb</td>
<td>6</td>
<td></td>
<td>fluffly bright pink flowers, spreads rapidly, once used as a love potion</td>
<td></td>
</tr>
<tr>
<td>bottle gentian</td>
<td>Gentiana andrewsii</td>
<td>1</td>
<td>☢</td>
<td>forb</td>
<td>2</td>
<td></td>
<td>bumblebee</td>
<td>blue flowers, seeds are slow to germinate</td>
</tr>
<tr>
<td>wild geranium</td>
<td>Geranium maculatum</td>
<td>1</td>
<td>☢</td>
<td>forb</td>
<td>☐</td>
<td>2</td>
<td>pink flowers, spreads but is not invasive</td>
<td></td>
</tr>
<tr>
<td>prairie smoke</td>
<td>Geum triflorum</td>
<td>1</td>
<td>☢</td>
<td>forb</td>
<td>☐</td>
<td>1</td>
<td>early red flowers followed by fluffy seedhead “smoke,” groundcover</td>
<td></td>
</tr>
<tr>
<td>showy sunflower</td>
<td>Helianthus laetiflorus</td>
<td>1</td>
<td>☢</td>
<td>forb</td>
<td>☐</td>
<td>4</td>
<td>bee, butterfly, bird</td>
<td>self-sows, cut flower</td>
</tr>
<tr>
<td>ox-eye</td>
<td>Heliopsis helianthoides</td>
<td>1</td>
<td>☢</td>
<td>forb</td>
<td>☐</td>
<td>3</td>
<td>butterfly</td>
<td>yellow flowers, cut flower, long blooming season</td>
</tr>
<tr>
<td>round-headed bush clover</td>
<td>Lespedeza capitata</td>
<td>1</td>
<td>☢</td>
<td>forb</td>
<td>4</td>
<td></td>
<td>bee, seeds eaten by bird</td>
<td></td>
</tr>
<tr>
<td>blazing star</td>
<td>Liatris species</td>
<td>1</td>
<td>☢</td>
<td>forb</td>
<td>4</td>
<td></td>
<td>bee, butterfly, bird</td>
<td>pink spikes, cut flower, once fed to horses to make them run faster</td>
</tr>
<tr>
<td>Michigan lily</td>
<td>Lilium michiganense</td>
<td>1</td>
<td>☢</td>
<td>forb</td>
<td>4</td>
<td></td>
<td>orange flowers, bulbs are edible</td>
<td></td>
</tr>
<tr>
<td>wild lupine</td>
<td>Lupinus perennis</td>
<td>1</td>
<td>☢</td>
<td>forb</td>
<td>2</td>
<td></td>
<td>bee</td>
<td>showy blue flowers in spikes, early-bloomers, self-sows</td>
</tr>
<tr>
<td>Virginia bluebells</td>
<td>Mertensia virginica</td>
<td>1</td>
<td>☢</td>
<td>forb</td>
<td>☐</td>
<td>2</td>
<td>blue flowers, plants die back after blooming</td>
<td></td>
</tr>
<tr>
<td>wild bergamot; beebalm</td>
<td>Monarda fistulosa</td>
<td>1</td>
<td>☢</td>
<td>forb</td>
<td>☐</td>
<td>2</td>
<td>bumblebee, butterfly</td>
<td>lavender flowers, leaves used to make tea, leaves tend to mildew</td>
</tr>
<tr>
<td>large-flowered beardtongue</td>
<td>Penstemon grandiflorus</td>
<td>1</td>
<td>☢</td>
<td>forb</td>
<td>2</td>
<td></td>
<td>bumblebee, hummingbird</td>
<td>early showy pink flowers, will not tolerate competition</td>
</tr>
<tr>
<td>mayapple</td>
<td>Podophyllum peltatum</td>
<td>1</td>
<td>☢</td>
<td>forb</td>
<td>1</td>
<td></td>
<td>spreading ground cover, white flowers, edible fruits</td>
<td></td>
</tr>
<tr>
<td>Jacob’s ladder</td>
<td>Polemonium reptans</td>
<td>1</td>
<td>☢</td>
<td>forb</td>
<td>☐</td>
<td>1</td>
<td></td>
<td>blue flowers</td>
</tr>
<tr>
<td>true Solomon’s seal</td>
<td>Polygonatum biflorum</td>
<td>1</td>
<td>☢</td>
<td>forb</td>
<td>4</td>
<td></td>
<td>green flowers, blue berries, roots used medicinally</td>
<td></td>
</tr>
<tr>
<td>mountain mint</td>
<td>Pycnanthemum virginianum</td>
<td>1</td>
<td>☢</td>
<td>forb</td>
<td>1.5</td>
<td></td>
<td>fragrant when crushed, white flowers</td>
<td></td>
</tr>
<tr>
<td>gray-headed coneflower</td>
<td>Ratibida pinnata</td>
<td>1</td>
<td>☢</td>
<td>forb</td>
<td>☐</td>
<td>3</td>
<td>bee, butterfly</td>
<td>yellow flowers</td>
</tr>
<tr>
<td>black-eyed Susan</td>
<td>Rudbeckia hirta</td>
<td>1</td>
<td>☢</td>
<td>forb</td>
<td>☐</td>
<td>2</td>
<td>bee, butterfly</td>
<td>yellow flowers with black center</td>
</tr>
<tr>
<td>bloodroot</td>
<td>Sanguinaria canadensis</td>
<td>1</td>
<td>☢ to ☢</td>
<td>forb</td>
<td>1</td>
<td></td>
<td>white flowers are short-lived, groundcover, red dye from rhizomes</td>
<td></td>
</tr>
<tr>
<td>Common name</td>
<td>Species name</td>
<td>Zone</td>
<td>Sun</td>
<td>Growth</td>
<td>Easy?</td>
<td>Height</td>
<td>Wildlife Values</td>
<td>Other</td>
</tr>
<tr>
<td>--------------------------</td>
<td>--------------------------------------------------</td>
<td>------</td>
<td>----------</td>
<td>--------------</td>
<td>-------</td>
<td>--------</td>
<td>--------------------------------------------------------------------------------</td>
<td>--------------------------------------</td>
</tr>
<tr>
<td>compass plant</td>
<td>Silphium laciniatum</td>
<td>1</td>
<td>☓</td>
<td>forb</td>
<td></td>
<td>6</td>
<td>bee, butterfly</td>
<td>yellow flowers, deeply cut leaves</td>
</tr>
<tr>
<td>cup plant</td>
<td>Silphium perfoliatum</td>
<td>1</td>
<td>☓ to ☁</td>
<td>forb</td>
<td></td>
<td>6</td>
<td>bee, butterfly</td>
<td>shaggy yellow flowers, prairie moths bore into stems, roots used medicinally</td>
</tr>
<tr>
<td>false Solomon's seal</td>
<td>Smilacina racemosa</td>
<td>1</td>
<td>☁</td>
<td>forb</td>
<td>y</td>
<td>3</td>
<td></td>
<td>white flowers followed by red berries</td>
</tr>
<tr>
<td>gray goldenrod</td>
<td>Solidago nemoralis</td>
<td>1</td>
<td>☓ to ☁</td>
<td>forb</td>
<td></td>
<td>2</td>
<td>bee, butterfly</td>
<td>yellow flowers in late summer, graceful form</td>
</tr>
<tr>
<td>showy goldenrod</td>
<td>Solidago speciosa</td>
<td>1</td>
<td>☓ to ☁</td>
<td>forb</td>
<td></td>
<td>4</td>
<td>bee, butterfly</td>
<td>yellow flowers in spikes</td>
</tr>
<tr>
<td>spiderwort</td>
<td>Tradescantia chiensis</td>
<td>1</td>
<td>☓ to ☁</td>
<td>forb</td>
<td></td>
<td>1</td>
<td></td>
<td>pink or purple flowers liquefy by noon, once used as a cure for spider bites</td>
</tr>
<tr>
<td>bellwort</td>
<td>Uvularia grandiflora</td>
<td>1</td>
<td>☁ to ☀</td>
<td>forb</td>
<td>y</td>
<td>1</td>
<td></td>
<td>nodding yellow flowers in early spring, pioneers used early shoots for greens</td>
</tr>
<tr>
<td>blue vervain</td>
<td>Verbena hastata</td>
<td>1</td>
<td>☓ to ☁</td>
<td>forb</td>
<td></td>
<td>4</td>
<td>bee, butterfly</td>
<td>blue flowers in spikes</td>
</tr>
<tr>
<td>hoary vervain</td>
<td>Verbena striata</td>
<td>1</td>
<td>☓ to ☁</td>
<td>forb</td>
<td>y</td>
<td>4</td>
<td>cover</td>
<td>purple flowers in spikes, tolerant of disturbance</td>
</tr>
<tr>
<td>Culver's root</td>
<td>Verónicastrum virginicum</td>
<td>1</td>
<td>☓ to ☁</td>
<td>forb</td>
<td></td>
<td>6</td>
<td>bee, butterfly</td>
<td>white flowers in spikes, cut flower</td>
</tr>
<tr>
<td>common blue violet</td>
<td>Viola papilionacea</td>
<td>1</td>
<td>☓ to ☁</td>
<td>forb</td>
<td>y</td>
<td>0.5</td>
<td>wild turkey eat the roots</td>
<td>groundcover, may be invasive</td>
</tr>
<tr>
<td>bird's-foot violet</td>
<td>Viola pedata</td>
<td>1</td>
<td>☓</td>
<td>forb</td>
<td></td>
<td>0.5</td>
<td>butterfly</td>
<td>purple flowers in early spring, not a good competitor, leaves are food for caterpillars</td>
</tr>
<tr>
<td>golden alexanders</td>
<td>Zizia aurea</td>
<td>1</td>
<td>☓</td>
<td>forb</td>
<td>y</td>
<td>2.5</td>
<td></td>
<td>yellow flowers in spring, glossy leaves</td>
</tr>
<tr>
<td>big bluestem</td>
<td>Andropogon gerardii</td>
<td>1</td>
<td>☓</td>
<td>grass</td>
<td>y</td>
<td>8</td>
<td>cover, seeds</td>
<td>king of native grasses, red-brown in winter, leaves once applied to infected wounds</td>
</tr>
<tr>
<td>sideoats grama</td>
<td>Bouteloua curtipendula</td>
<td>1</td>
<td>☓</td>
<td>grass</td>
<td></td>
<td>2</td>
<td>cover, seeds</td>
<td>golden or reddish in fall</td>
</tr>
<tr>
<td>switchgrass</td>
<td>Panicum virgatum</td>
<td>1</td>
<td>☓</td>
<td>grass</td>
<td></td>
<td>5</td>
<td>cover, seeds</td>
<td></td>
</tr>
<tr>
<td>little bluestem</td>
<td>Schizachyrium scoparium/ Andropogon scoparius</td>
<td>1</td>
<td>☓</td>
<td>grass</td>
<td></td>
<td>3</td>
<td>cover, seeds</td>
<td>reddish purple winter color</td>
</tr>
<tr>
<td>Indian grass</td>
<td>Sorgastrum nutans</td>
<td>1</td>
<td>☓</td>
<td>grass</td>
<td>y</td>
<td>6</td>
<td>cover, seeds</td>
<td></td>
</tr>
<tr>
<td>New Jersey tea</td>
<td>Ceanothus americanus</td>
<td>1</td>
<td>☓ to ☁</td>
<td>shrub</td>
<td></td>
<td>3</td>
<td>bee, butterfly</td>
<td>white flowers in June and July, leaves once used as tea</td>
</tr>
<tr>
<td>American hazelnut</td>
<td>Corylus americana</td>
<td>1</td>
<td>☓</td>
<td>shrub</td>
<td></td>
<td>9</td>
<td>nuts</td>
<td></td>
</tr>
<tr>
<td>wild plum</td>
<td>Prunus americana</td>
<td>1</td>
<td>☓ to ☁</td>
<td>shrub</td>
<td>y</td>
<td>20</td>
<td>bee, berries</td>
<td>fragrant white flowers, use fruit for jam</td>
</tr>
<tr>
<td>common chokecherry</td>
<td>Prunus virginiana</td>
<td>1</td>
<td>☓ to ☁</td>
<td>shrub</td>
<td>y</td>
<td>20</td>
<td>berries</td>
<td>fragrant white flowers, use berries for jam</td>
</tr>
<tr>
<td>smooth sumac</td>
<td>Rhus glabra</td>
<td>1</td>
<td>☓</td>
<td>shrub</td>
<td>y</td>
<td>9</td>
<td></td>
<td>fall color, plant on steep slopes to prevent erosion</td>
</tr>
<tr>
<td>wild rose</td>
<td>Rosa arkansana</td>
<td>1</td>
<td>☓</td>
<td>shrub</td>
<td>y</td>
<td>3</td>
<td>winter food for birds</td>
<td>pink flowers, red hips containing vitamin C, spreads by suckers</td>
</tr>
<tr>
<td>American elderberry</td>
<td>Sambucus canadensis</td>
<td>1</td>
<td>☓ to ☁</td>
<td>shrub</td>
<td>y</td>
<td>9</td>
<td>berries</td>
<td>fragrant white flowers, use purple berries for jam or in muffins</td>
</tr>
<tr>
<td>American highbush cranberry</td>
<td>Viburnum trilobum</td>
<td>1</td>
<td>☓ to ☁</td>
<td>shrub</td>
<td></td>
<td>12</td>
<td>berries</td>
<td>white flowers, leaves turn red in fall, red berries persist through winter</td>
</tr>
<tr>
<td>climbing prairie rose</td>
<td>Rosa setigera</td>
<td>1</td>
<td>☓</td>
<td>shrub or vine</td>
<td></td>
<td>6</td>
<td>bee, butterfly</td>
<td>pink flowers, red hips</td>
</tr>
<tr>
<td>white oak</td>
<td>Quercus alba</td>
<td>1</td>
<td>☓</td>
<td>tree</td>
<td></td>
<td>60</td>
<td>acorns, nesting sites</td>
<td>best fall color of the oaks, plant acorns as soon as they fall</td>
</tr>
<tr>
<td>bur oak</td>
<td>Quercus macrocarpa</td>
<td>1</td>
<td>☓</td>
<td>tree</td>
<td></td>
<td>60</td>
<td>acorns, nesting sites</td>
<td>fine shape</td>
</tr>
<tr>
<td>red oak</td>
<td>Quercus rubra</td>
<td>1</td>
<td>☓</td>
<td>tree</td>
<td></td>
<td>75</td>
<td>acorns, nesting sites</td>
<td>susceptible to oak wilt</td>
</tr>
<tr>
<td>black locust</td>
<td>Robinia pseudoacacia</td>
<td>1</td>
<td>☓</td>
<td>tree</td>
<td></td>
<td>60</td>
<td>bee</td>
<td>fragrant white flowers</td>
</tr>
<tr>
<td>Common name</td>
<td>Species name</td>
<td>Zone</td>
<td>Sun</td>
<td>Growth</td>
<td>Easy?</td>
<td>Height</td>
<td>Wildlife Values</td>
<td>Other</td>
</tr>
<tr>
<td>-------------------</td>
<td>------------------------</td>
<td>------</td>
<td>--------</td>
<td>--------</td>
<td>-------</td>
<td>--------</td>
<td>-----------------------------------------------------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>mountain ash</td>
<td>Sorbus americanus</td>
<td>1</td>
<td>☀️ to ☐️</td>
<td>tree</td>
<td>30</td>
<td>berries</td>
<td>white flowers, orange berries, the rowan tree of</td>
<td>Celtic mythology</td>
</tr>
<tr>
<td>basswood</td>
<td>Tilia americana</td>
<td>1</td>
<td>☀️ to ☐️</td>
<td>tree</td>
<td>y</td>
<td>120</td>
<td>tiny green fragrant flowers, inner bark used to</td>
<td>make rope</td>
</tr>
<tr>
<td>Jack-in-the-pulpit</td>
<td>Arisaema triphyllum</td>
<td>1,2</td>
<td>☀️ to ☐️</td>
<td>forb</td>
<td>1.5</td>
<td></td>
<td>distinctive green flowers and red berries, tubers</td>
<td>are edible but must be cooked</td>
</tr>
<tr>
<td>wild white indigo</td>
<td>Baptisia alba (lactea)</td>
<td>1,2</td>
<td>☀️ to ☐️</td>
<td>forb</td>
<td>y</td>
<td>2</td>
<td>white flowers on spikes, once used for blue dye</td>
<td></td>
</tr>
<tr>
<td>turtlehead</td>
<td>Chelone glabra</td>
<td>1,2</td>
<td>☀️ to ☐️</td>
<td>forb</td>
<td>2</td>
<td>bee</td>
<td>white or pink flowers</td>
<td></td>
</tr>
<tr>
<td>Joe pye weed</td>
<td>Eupatorium maculatum</td>
<td>1,2</td>
<td>☀️ to ☐️</td>
<td>forb</td>
<td>5</td>
<td>bee, butterfly</td>
<td>fragrant fuzzy pink flowers, Joe Pye was a</td>
<td>Native American herbalist</td>
</tr>
<tr>
<td>prairie cord grass</td>
<td>Spartina pectinata</td>
<td>1,2</td>
<td>☀️</td>
<td>grass</td>
<td>4</td>
<td></td>
<td>cover, muskrat eat roots</td>
<td>burned as fuel during the “Long Winter” (Laura Ingalls Wilder)</td>
</tr>
<tr>
<td>bottlebrush sedge</td>
<td>Carex comosa</td>
<td>2,3</td>
<td>☀️</td>
<td>sedge</td>
<td>4</td>
<td></td>
<td>cover</td>
<td></td>
</tr>
<tr>
<td>red maple</td>
<td>Acer rubrum</td>
<td>1,2</td>
<td>☀️</td>
<td>tree</td>
<td>45</td>
<td></td>
<td>nesting sites</td>
<td></td>
</tr>
<tr>
<td>blue flag</td>
<td>Iris versicolor</td>
<td>2,3</td>
<td>☀️</td>
<td>forb</td>
<td>3</td>
<td>bee, butterfly, cover</td>
<td>blue or lavender flowers</td>
<td></td>
</tr>
<tr>
<td>swamp white oak</td>
<td>Quercus bicolor</td>
<td>1,2</td>
<td>☀️ to ☐️</td>
<td>tree</td>
<td>60</td>
<td>acorns</td>
<td>tolerates wet soils, acorns once eaten by Native Americans</td>
<td></td>
</tr>
<tr>
<td>jewelweed</td>
<td>Impatiens capensis</td>
<td>2</td>
<td>☐️</td>
<td>annual</td>
<td>y</td>
<td>4</td>
<td>bee</td>
<td>orange flowers, seed pods pop open, juice</td>
</tr>
<tr>
<td>crested fern</td>
<td>Dryopteris cristata</td>
<td>2</td>
<td>☐️</td>
<td>fern</td>
<td>2</td>
<td>butterfly, wild</td>
<td>turkey eat the roots</td>
<td></td>
</tr>
<tr>
<td>royal fern</td>
<td>Osmunda regalis</td>
<td>2</td>
<td>☀️ to ☐️</td>
<td>fern</td>
<td>5</td>
<td></td>
<td>young fiddleheads are edible</td>
<td></td>
</tr>
<tr>
<td>marsh fern</td>
<td>Thelypteris palustris</td>
<td>2</td>
<td>☐️</td>
<td>fern</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>swamp milkweed</td>
<td>Asclepias incarnata</td>
<td>2</td>
<td>☀️ to ☐️</td>
<td>forb</td>
<td>4</td>
<td>bee, butterfly</td>
<td>rose to pink flowers, cut flower, edible flowers, roots used medicinally</td>
<td></td>
</tr>
<tr>
<td>scouring rush</td>
<td>Equisetum hyemale</td>
<td>2</td>
<td>☀️ to ☐️</td>
<td>forb</td>
<td>3</td>
<td></td>
<td>best in sandy soils, a primitive plant from the age of dinosaurs</td>
<td></td>
</tr>
<tr>
<td>purple avens</td>
<td>Geum rivale</td>
<td>2</td>
<td>☀️</td>
<td>forb</td>
<td>1.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sneezeweed</td>
<td>Helianthus annuus</td>
<td>2</td>
<td>☀️</td>
<td>forb</td>
<td>4</td>
<td></td>
<td>cut flower</td>
<td></td>
</tr>
<tr>
<td>cardinal flower</td>
<td>Lobelia cardinalis</td>
<td>2</td>
<td>☀️ to ☐️</td>
<td>forb</td>
<td>4</td>
<td>butterfly, hummingbird</td>
<td>bright red flowers, roots used as love charm</td>
<td></td>
</tr>
<tr>
<td>great blue lobelia</td>
<td>Lobelia syphilitica</td>
<td>2</td>
<td>☀️ to ☐️</td>
<td>forb</td>
<td>3</td>
<td>bee, butterfly</td>
<td>blue flowers in spikes, used medicinally</td>
<td></td>
</tr>
<tr>
<td>fringed loosestrife</td>
<td>Lysimachia ciliata</td>
<td>2</td>
<td>☀️</td>
<td>forb</td>
<td>3</td>
<td>bee, butterfly</td>
<td>small green flowers with cut leaves, roots may contain an anti-cancer drug</td>
<td></td>
</tr>
<tr>
<td>tall meadowrue</td>
<td>Thalictrum dasycarpum</td>
<td>2</td>
<td>☀️ to ☐️</td>
<td>forb</td>
<td>y</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>prairie ironweed</td>
<td>Vernonia fasciculata</td>
<td>2</td>
<td>☀️</td>
<td>forb</td>
<td>y</td>
<td>5</td>
<td>bee, butterfly</td>
<td>pink flowers in late summer, cut flower</td>
</tr>
<tr>
<td>swamp saxifrage</td>
<td>Saxifraga pensylvanica</td>
<td>2</td>
<td>☀️</td>
<td>sedge</td>
<td>3</td>
<td></td>
<td>green flowers in spike</td>
<td></td>
</tr>
<tr>
<td>smooth alder</td>
<td>Alnus rugosa</td>
<td>2</td>
<td>☀️ to ☐️</td>
<td>shrub</td>
<td>y</td>
<td>25</td>
<td>birds love the fruit</td>
<td>white flowers</td>
</tr>
<tr>
<td>Saskatoon</td>
<td>Amelanchier alnifolia</td>
<td>2</td>
<td>☀️ to ☐️</td>
<td>shrub</td>
<td>y</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>meadowsweet</td>
<td>Spirea alba</td>
<td>2</td>
<td>☀️</td>
<td>shrub</td>
<td>6</td>
<td>bee, butterfly</td>
<td>showy white flowers, cut flower</td>
<td></td>
</tr>
<tr>
<td>black ash</td>
<td>Fraxinus nigra</td>
<td>2</td>
<td>☀️ to ☐️</td>
<td>tree</td>
<td>y</td>
<td>75</td>
<td>seeds</td>
<td>pleasant aroma</td>
</tr>
<tr>
<td>black spruce</td>
<td>Picea mariana</td>
<td>2</td>
<td>☀️</td>
<td>tree</td>
<td>y</td>
<td>45</td>
<td>dense cover for nestling bird</td>
<td>prefers acid soil</td>
</tr>
<tr>
<td>cottonwood</td>
<td>Populus deltoides</td>
<td>2</td>
<td>☀️</td>
<td>tree</td>
<td>y</td>
<td>50</td>
<td></td>
<td>yellow in fall</td>
</tr>
<tr>
<td>black willow</td>
<td>Salix nigra</td>
<td>2</td>
<td>☀️ to ☐️</td>
<td>tree</td>
<td>y</td>
<td>60</td>
<td>bee, butterfly</td>
<td></td>
</tr>
<tr>
<td>northern white cedar</td>
<td>Thuja occidentalis</td>
<td>2</td>
<td>☀️</td>
<td>tree</td>
<td>y</td>
<td>30</td>
<td>dense cover for nesting birds, winter cover</td>
<td></td>
</tr>
<tr>
<td>sweet flag</td>
<td>Acorus calamus</td>
<td>2</td>
<td>☀️</td>
<td>forb</td>
<td>6</td>
<td></td>
<td>rhizomes have sweet fragrance when cut or bruised</td>
<td></td>
</tr>
<tr>
<td>Common name</td>
<td>Species name</td>
<td>Zone</td>
<td>Sun</td>
<td>Growth</td>
<td>Easy?</td>
<td>Height</td>
<td>Wildlife Values</td>
<td>Other</td>
</tr>
<tr>
<td>---------------------</td>
<td>-----------------------------</td>
<td>------</td>
<td>-----</td>
<td>--------</td>
<td>-------</td>
<td>--------</td>
<td>------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>marsh marigold</td>
<td>Caltha palustris</td>
<td>2</td>
<td>o</td>
<td>forb</td>
<td></td>
<td>1.5</td>
<td>shiny yellow flowers in May, foliage dies back in summer</td>
<td></td>
</tr>
<tr>
<td>spike rush</td>
<td>Eleocharis species</td>
<td>2,3</td>
<td>o</td>
<td>rush</td>
<td></td>
<td>1.5</td>
<td>cover</td>
<td></td>
</tr>
<tr>
<td>soft rush</td>
<td>Juncus effusus</td>
<td>2,3</td>
<td>o</td>
<td>rush</td>
<td></td>
<td>3.5</td>
<td>cover, muskrat eat roots</td>
<td></td>
</tr>
<tr>
<td>rice cutgrass</td>
<td>Leersia oryzoides</td>
<td>2,3</td>
<td>o</td>
<td>grass</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>pickerelweed</td>
<td>Pontederia cordata</td>
<td>2,3</td>
<td>o</td>
<td>forb</td>
<td>y</td>
<td>3</td>
<td>deep blue flowers in spikes</td>
<td></td>
</tr>
<tr>
<td>arrowhead</td>
<td>Sagittaria latifoia</td>
<td>2,3</td>
<td>o</td>
<td>forb</td>
<td>y</td>
<td>3</td>
<td>cover, food</td>
<td></td>
</tr>
<tr>
<td>hard-stem bulrush</td>
<td>Scirpus acutus</td>
<td>2,3</td>
<td>o</td>
<td>rush</td>
<td></td>
<td>8</td>
<td>cover, food</td>
<td></td>
</tr>
<tr>
<td>Canada bluejoint grass</td>
<td>Calamagrostis canadensis</td>
<td>2,3</td>
<td>o</td>
<td>grass</td>
<td></td>
<td>4</td>
<td>stands up well in water</td>
<td></td>
</tr>
<tr>
<td>giant manna grass</td>
<td>Glyceria grandis</td>
<td>2,3</td>
<td>o</td>
<td>grass</td>
<td></td>
<td>5</td>
<td>cover</td>
<td></td>
</tr>
<tr>
<td>lake sedge</td>
<td>Carex lacustris</td>
<td>2,3</td>
<td>o</td>
<td>sedge</td>
<td></td>
<td>3</td>
<td>cover, food</td>
<td></td>
</tr>
<tr>
<td>tussock sedge</td>
<td>Carex stricta</td>
<td>2,3</td>
<td>o</td>
<td>sedge</td>
<td></td>
<td>2</td>
<td>cover</td>
<td>forms hummocks</td>
</tr>
<tr>
<td>green bulrush</td>
<td>Scirpus atrovirens</td>
<td>2,3</td>
<td>o</td>
<td>rush</td>
<td>y</td>
<td>4</td>
<td>cover</td>
<td></td>
</tr>
<tr>
<td>wool grass</td>
<td>Scirpus cyperinus</td>
<td>2,3</td>
<td>o</td>
<td>rush</td>
<td></td>
<td>5</td>
<td>cover, food</td>
<td>fuzzy nutlets</td>
</tr>
<tr>
<td>river bulrush</td>
<td>Scirpus fluviatilis</td>
<td>2,3</td>
<td>o</td>
<td>rush</td>
<td></td>
<td>6</td>
<td>cover, food for muskrat</td>
<td></td>
</tr>
<tr>
<td>black chokeberry</td>
<td>Aronia melanocarpa</td>
<td>2,3</td>
<td>o</td>
<td>shrub</td>
<td></td>
<td>9</td>
<td>berries</td>
<td>white flowers in June followed by black fruits, glossy leaves</td>
</tr>
<tr>
<td>buttonbush</td>
<td>Cephalanthus occidentalis</td>
<td>2,3</td>
<td>o to d</td>
<td>shrub</td>
<td></td>
<td>9</td>
<td>butterfly</td>
<td></td>
</tr>
<tr>
<td>red osier dogwood</td>
<td>Cornus sericea (stolonifera)</td>
<td>2,3</td>
<td>o to d</td>
<td>shrub</td>
<td>y</td>
<td>18</td>
<td>berries</td>
<td>red stems add winter color, twigs used to make baskets</td>
</tr>
<tr>
<td>marsh cinquefoil</td>
<td>Potentilla palustris</td>
<td>2,3</td>
<td>o to d</td>
<td>shrubby</td>
<td>1.5</td>
<td></td>
<td>berries</td>
<td>red or purple flowers</td>
</tr>
<tr>
<td>pussy willow</td>
<td>Salix discolor</td>
<td>2,3</td>
<td>o to d</td>
<td>shrubby</td>
<td>20</td>
<td></td>
<td>bee</td>
<td>fuzzy catkins are a sign of spring, cuttings can be rooted</td>
</tr>
<tr>
<td>water plantain</td>
<td>Alisma plantago-aquatica</td>
<td>3</td>
<td>o</td>
<td>forb</td>
<td></td>
<td>2.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>bur-reed</td>
<td>Sparganium americanum</td>
<td>3</td>
<td>o to d</td>
<td>forb</td>
<td></td>
<td>5</td>
<td>duck, muskrat</td>
<td>poor germination from seed</td>
</tr>
<tr>
<td>cattail</td>
<td>Typha latifolia</td>
<td>3</td>
<td></td>
<td>forb</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>American lotus</td>
<td>Nelumbo lutea</td>
<td>4</td>
<td>o</td>
<td>forb</td>
<td></td>
<td></td>
<td>floating food</td>
<td>yellow flowers, need a rich muddy bottom, rhizomes and seeds were Native American foods</td>
</tr>
<tr>
<td>water celery</td>
<td>Valisneria americana</td>
<td>4</td>
<td></td>
<td>forb</td>
<td></td>
<td></td>
<td>cup-shaped yellow flowers, plant the rhizomes</td>
<td></td>
</tr>
<tr>
<td>spatterdock</td>
<td>Nuphar advena</td>
<td>4</td>
<td>o</td>
<td>forb</td>
<td></td>
<td></td>
<td>floating food for muskrat, deer, beaver, moose and porcupine in mud, rhizomes are edible. pure white fragrant flowers, plant rhizomes in</td>
<td>fall in fertilizer</td>
</tr>
</tbody>
</table>
Information Resources

More information on many topics covered in this publication can be found in several videos, many books and articles, and from a variety of public and nonprofit agencies.

Videos


Publications


Organizations and web sites

Butterflies of North America
Northern Prairie Wildlife Research Center, 8711 37th Street Southeast, Jamestown ND 58401; 701-253-5500

Cornell University
Biological Control: A guide to natural enemies in North America
http://www.nysaes.cornell.edu/ent/biocontrol/

Minnesota Department of Natural Resources
DNR Information Center, 500 Lafayette Road, St. Paul MN 55155-4040; 651-296-6157 or 888-646-6367
e-mail: info@dnr.state.mn.us

Sustainable Shoreland Ecosystems
http://www.dnr.state.mn.us/waters/shoreland

Minnesota Native Plant Society
220 Biological Sciences Center, University of Minnesota, 1445 Gortner Avenue, St. Paul MN 55108
http://www.stolaf.edu/depts/biology/mnps/

Minnesota State Horticultural Society
1755 Prior Avenue North, Falcon Heights MN 55113-5549; 612-643-3601
http://www.northerngardener.org/
National Wildlife Federation
8925 Leesburg Pike, Vienna VA 22184; 703-790-4000 or 800-822-9919
http://www.nwf.org

Native Plant Conservation Initiative
http://www.aqd.nps.gov/npci/index.htm

Trout Unlimited
1500 Wilson Boulevard, Suite 310, Arlington VA 22209-2404; 703-522-0200 or 800-834-2419
http://www.tu.org

United States Environmental Protection Agency
Adopt Your Watershed (http://www.epa.gov/adopt/)
Green Landscaping with Native Plants (http://www.epa.gov/greenacres/)
Wild Ones Handbook (http://www.epa.gov/greenacres/wildones/)

University of Minnesota
Center for Urban Ecology and Sustainability (CUES)
http://www.entomology.umn.edu/cues/

University of Minnesota Extension Service
Distribution Center, 1420 Eckles Avenue, St. Paul MN 55108; 612-625-8173 or in Minnesota contact a county extension office
http://www.extension.umn.edu

University of Minnesota Department of Fisheries and Wildlife, Goose Control
1980 Folwell Avenue, St. Paul, Minnesota 55108-6124; 612-624-3600
http://www.fw.umn.edu/research/goose/html/

University of Minnesota Water Resources Program
http://www.extension.umn.edu/Environment/

University of Wisconsin Extension Water Resources Programs
Environmental Resources Center, UW-Madison College of Agriculture and Life Sciences, Agriculture Hall, Room 216, 1450 Linden Drive, Madison WI 53706-1562; 608-262-1916 or 608-262-0020
http://clean-water.uwex.edu/