Guide to Native Plants (a.k.a. Local Beings)

112 species that support clean water, wildlife habitat, and a happy soul.

By: Patrick Goggin


Marsh milkweed


Sky blue aster


Canada anemone


Great blue lobelia


Prairie smoke


Wild columbine


Culver's root


Sneezeweed


False sunflower


Wild bergamot


Boneset


Hoary vervain


Rough blazing star


Common blue violet


Stiff goldenrod


Bigleaf aster


Mountain mint


Butterfly milkweed


Turtlehead


New England aster


Cup-plant


Common milkweed


Wild ginger


Black-eyed Susan


Thimbleweed


Showy goldenrod


Blue vervain


Yellow coneflower

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Acknowledgments

Thanks to native plants, my teachers; gratitude also for and to my wife, Mariquita Sheehan, my botany buddy. Much appreciation and love to all the teachers, mentors, work colleagues, volunteers, gardeners, citizens, botanists, tribal elders, and ecologists who allowed me to bend their ear about native plants. Talking with others about native plants is my favorite thing in the world to do.

Many thanks to my friend and colleague Amy Kowalski for helping me with graphic design, template layout, and support.

This book is also in loving memory of my parents, Helen Jeannine (Wadoz) Goggin and Daniel Ryle Goggin, who both have walked on to the spirit world. Thank you to them for instilling in me the value of education and lifelong learning endeavors.

Key words

Local beings, native plants, pollinators, landscaping with native plants, water quality, stormwater control, erosion control, beneficial insects, ecosystem management, water conservation, landscape ecology, natural plant communities, biodiversity, insects, climate change, and gardening.

Contents

Grasses, sedges, and rushes [continued]

Wildflowers [continued]

Ferns

Appendices

Introduction

Target audiences

This guide is aimed at assisting people interested in creating, designing, and installing native plantings that support the objectives of cleaner water, better wildlife habitat, and a happier soul. I have several target audiences in mind that I hope find this guide helpful to their work:

- lake, stream, and river organizations and their shoreland property owner memberships;
- not-for-profit groups like schools; urban ecology and nature centers; resource conservation and development organizations; outdoor sports, wildlife, and hook and line clubs; and other conservation organizations;
- home gardeners (including master gardeners) interested in gardening with native plants;
- staffs of tribal nations conservation and environmental departments, federal agency partners working in the Midwest, state agency partners working in Wisconsin, county land and water conservation and planning & zoning staff;
- lake, stream, and river planners, project managers, botanists, ecologists, consultants, and/or field biologists;
- nurseries and landscaper staff; landscape architects; undergraduate students studying anything; and
- anyone else interested in learning about the incredible world of native plants!

Native plants, my teachers

For the last 35 years through assorted experiences, native plants, as my teachers, have gifted me with many things. From glimpses into the relationships of life between different creatures, to quirks of awe and wonder like jewelweed dispersal or the self-burial needlegrass with its twisting awn and pointed seed, native plants have a lot to offer us. They provide ongoing ecological services like carbon cycling and sequestration, other nutrient cycling, wildlife habitat and movement corridors for breeding birds, small mammals, amphibians, and reptiles, water quality benefits like flow interception and slow down, infiltration, and buffering, migratory songbird and pollinator support, shoreland stability, soil stabilization, and erosion control, fallen material for woody habitat, fish spawning grounds, and nest protection. They also give us other gifts like mental health aids and support [aka a happy soul], gardening options, cultural foods and medicines, attractive scenic beauty, and privacy views.

My native plant background

My street credentials for native plants began as a volunteer at the University of Wisconsin-Arboretum as an undergraduate at UW-Madison back in the late 1980s and early 1990s (what can I say, I liked college). Early volunteering experiences with native plants like seed collection and storage sessions with Brian Bader and invasive species control work with Steve Glass wet my whistle for understanding this flora more. UW classes with remarkable professors like Jim Zimmerman, Hugh Iltis, and Cal DeWitt shared the outdoor classroom that is the UW-Arboretum. Naturalists like Virginia Kline opened my eyes and many others' to the wonders of the natural world dancing around the grounds there at the arboretum.

Next I spent some summers working for a native plant and community restoration firm Applied Ecological Services in Brodhead, Wisconsin. My duty as a young worker was to support the nursery and farm operations with native seed production, collection, and storage. Our field teams got material ready for plant orders; we helped transplant and raise seedlings in the greenhouses; we launched new permanent plant beds on the farm that served as seed sources; we traveled around southern Wisconsin collecting native plant seeds from approved sites; and maybe best of all, we utilized prescribed fire to enhance plantings on the farm grounds and with customers on private land. From this hands on experience, I went back to school at UW-Stevens Point and got a natural resources masters of science degree. During my time as a graduate student at UWSP, I took about every botany course I could, many with beloved botanist and teacher Dr. Bob Freckmann.

After graduate school I had a stint outside the native plant arena centered on conservation education. But during that time, I also had access to special botany camps held up in the Upper Peninsula at the Clear Lake Camp facility on the Hiawatha National Forest, because I was the cook. Each summer, USDA Forest Service colleagues would have a special multiple day botany training around a specific habitat (i.e. wetands), plant group (ferns, sedges, grasses), or ecological theme (native seed collection and propagation); I gained attendance at the trainings by helping with food preparations. I learned many things on these botanical expeditions. Several of these classes were taught by the legendary botanist Ed Voss; he'd wonderfully start our workshop mornings by highlighting the number of plant families we had represented in the breakfast meal.

The next part of my native plant journey is one of a practitioner. This piece began with my time as the County Conservationist for the Vilas County Land and Water Conservation Department. One of the duties there included researching and writing native planting plans for conservation best practices installed with private landowners through a cost-share program; many of these plantings were shoreland restorations. I wrote 6 to 12 plans a year, mostly native plantings around streambanks, lakeshores, and in buffer areas.

Later, when I began my current role with native plants that centers more on education and coaching with assorted audiences, I switched from doing native plantings to supporting them through outreach. In my time with Extension Lakes since 2008, I've tried to carry the torch of native plants with partners of all types, presenting talks, co- and self-authoring journal papers and articles, and doing all kinds of workshops, trainings, and field sessions. These efforts include reaching out to local partners like lake organizations, conservation groups, outdoor sports organizations, rotary clubs, master gardeners, libraries, schools, state trade groups, nurseries, and landscapers, as well as regional partnerships like the Wisconsin Tribal Conservation Advisory Council, the Wisconsin Chapter of the North American Stormwater and Erosion Control Association, and the PBS Wisconsin's Garden & Landscape Expo, federal and international partners like tribal nations, the Environmental Protection Agency, and international groups like the North American Lake Management Society and the Society for Ecological Restoration.

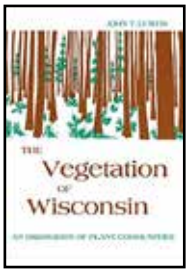
My final experience along this native plant learning pathway has been my gardening with native species over the last 25 years; my wife Quita and I have been gardening with native plants and restoring native habitats on our 3.5 acres in Phelps since 2002. We have hundreds of different native species growing on site in meadows, red and white pine and oak savanna restoration, and other northern dry mixed woodlands. Observations and phenological record keeping on our property has revealed different breeding birds like eastern kingbirds, black-capped chickadees, bluebirds, whip-poor-will, woodcock, wild turkey, several vireos and warblers, and assorted sparrows.

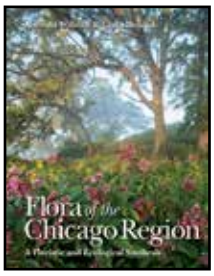
Dozens of beneficial insects visit the flowers of native plants in our gardens each season; I like to dream that with every new native species we add to the gardens, another new beneficial insect joins the community attracted by the new plant. In personal conversations with Doug Tallamy, and in reading his terrific books, my dream seems to be closer to reality than I may have thought, as every new native plant can offer a different niche and special opportunity for insect specialists. These beneficial insects support my vegetable garden, bring balance to the wildlife and plant community, and provide an incredible show and display of diversity through the growing season. Each of the native plant experiences described above have provided me with gifts I try to share in this guide; I hope I am successful.

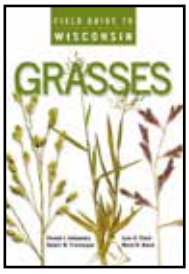
How to use this guide

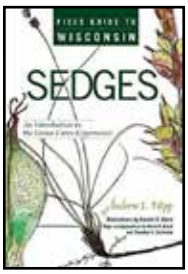
This guide in meant to assist you in formulating effective native plant lists and planting plans for everything from containers to acres of land. The native plant species highlighted in this guide provide you with ways to enhance water quality, bolster wildlife habitat, and provide happiness and contentment for your soul. The native plant profile pages shared in this guide provide content around five themes: 1) biology notes, 2) beneficial insects and other wildlife support, 3) seasonal interest, 4) common associates listings, and perhaps most importantly, 5) water conservation and erosion control.

Biology notes provides an overview of the plant's sunlight, moisture and soil preferences, the places it occurs around Wisconsin including in which natural communities, and other tidbits of the plant's natural history and ecology. Essential resources utilized for this theme included: Ted Cochrane and Hugh Iltis' Atlas of the Wisconsin Prairie and Savanna Flora, John T. Curtis' The Vegetation of Wisconsin, John Hilty's *Illinois Wildflowers website and databases: www.illinoiswildflowers.info*, Gerould Wilhelm and Laura Rericha's Flora of the Chicago Region: A Floristic and Ecological Synthesis, Emmet J. Judziewicz, Robert W. Freckmann, Lynn G. Clark, and Merel R. Black's Field Guide to Wisconsin Grasses, Andrew L. Hipp's Field Guide to Wisconsin Sedges, and the *Prairie Moon Nursery website: www.prairiemoon.com*.

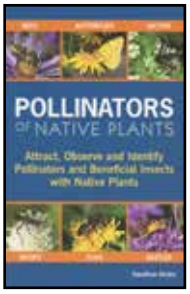



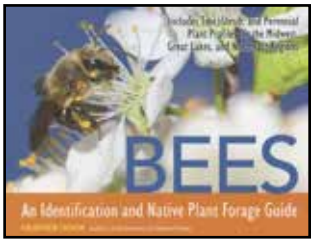



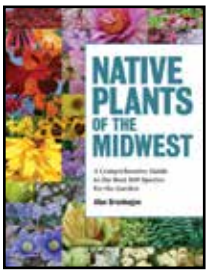




Beneficial insects and other wildlife support provides information on beneficial insects, pollinators, birds, and other wildlife that benefit and are supported by each plant species. Essential resources utilized for this theme included: Heather Holm's incredible books Pollinators of Native Plants: Attract, Observe and Identify Pollinators and Beneficial Insects with Native Plants and Bees: An Identification and Native Plant Forage Guide; the extraordinary aforementioned resource of John Hilty's *Illinois Wildflowers web pages and databases: www.illinoiswildflowers.info*; and the *Prairie Moon Nursery website: www.prairiemoon.com*.

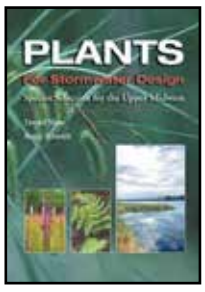






Seasonal interest gives highlights around seasonal interest for native plants. The *Prairie Moon Nursery web site: www.prairiemoon.com*, Alan Brnhagen's book Native Plants of the Midwest, and 35 years of growing experience were essential resources for this topic.

Common associates provides a listing of common plant associates found in natural communities where the species profiled is found. The essential resources utilized for this theme included: John T. Curtis' The Vegetation of Wisconsin and Gerould Wilhelm and Laura Rericha's Flora of the Chicago Region: A Floristic and Ecological Synthesis (both pictured above).



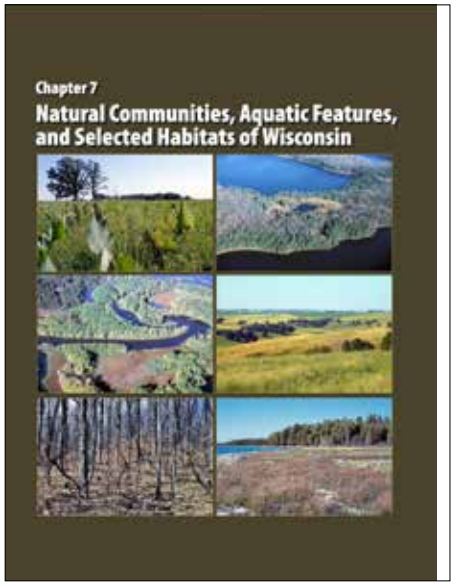
Water conservation and erosion control shares content including examples of root growth type by these native plants when possible and provides coaching on how to utilize different native plants for stormwater management and water conservation strategies like diversion areas, interception zones, braided flow locations, rain gardens, and general plantings. These strategies can be used in shoreland plantings around waterways, rain gardens, native plantings along access stairways and uplands, and steep slope applications. Essential resources utilized for this theme included: Daniel Shaw and Rusty Schmidt's Plants for Stormwater Design, the *Prairie Moon Nursery website: www.prairiemoon.com*, and *The Amazing Diversity of Root Forms Among Native Wetland Plants*, published in *Leaflet 15* of the University of Wisconsin-Arboretum, an ambitious experiment that compared the root and shoot growth of 40 native wetland plants lead by Dr. Joy B. Zedler and conducted by her 670 class.

Exposed: The Secret Life of Roots
February 21 – October 13, 2015
U.S. Botanic Garden exhibit
https://www.usbg.gov/visit/exhibits/exposed-secret-life-roots

Plant roots are vital components of the earth's ecosystem. They are necessary for plant growth, including the production of food and nutrients for humans and many other organisms. However, as root systems are out of sight, their beauty and importance often go unnoticed. This exhibit used the work of agricultural ecologist Dr. Jerry Glover, sculptor Steve Tobin, and photographer Jim Richardson to showcase the importance of roots through visually stunning root representations. This project underscores the value native plant roots have to land and water conservation.

Explore Natural Communities of Wisconsin

For more information on Wisconsin's natural communities, read *Chapter 7 Natural Communities, Aquatic Features, and Selected Habitats of Wisconsin* in the complete Ecological Landscapes of Wisconsin: An Assessment of Ecological Resources and a Guide to Planning Sustainable Management at *https://p.widencdn.net/exmng9/1805Ch7*



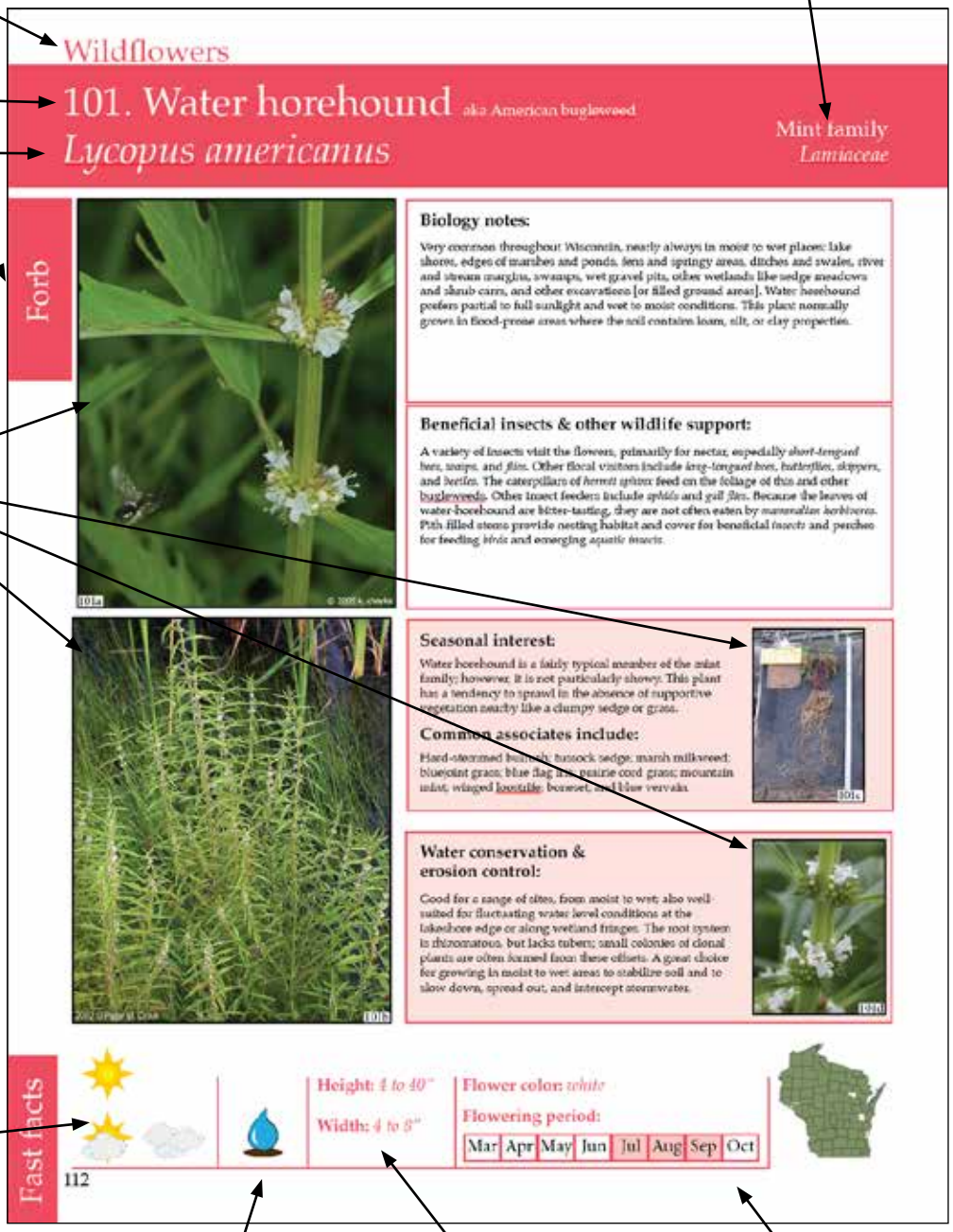
Call out descriptions - plant profile page example

Type of plant

Common name

Latin name

Plant family name



Plant pictures

Each plant profile page provides several pictures of the plant, seeking to convey traits and aspects of utilizing it in your landscape, as well as how it supports water conservation and where it can perform erosion control help.

Full Sun

At least 6 hours of direct, unfiltered sunshine daily

Partial Sun

4-6 hours of direct sunlight OR filtered sunlight all day

Shade

Less than 4 hours of direct sunlight and heavily shaded

Dry-Medium Soil

Drains well and has no standing water

Moist-Wet Soil

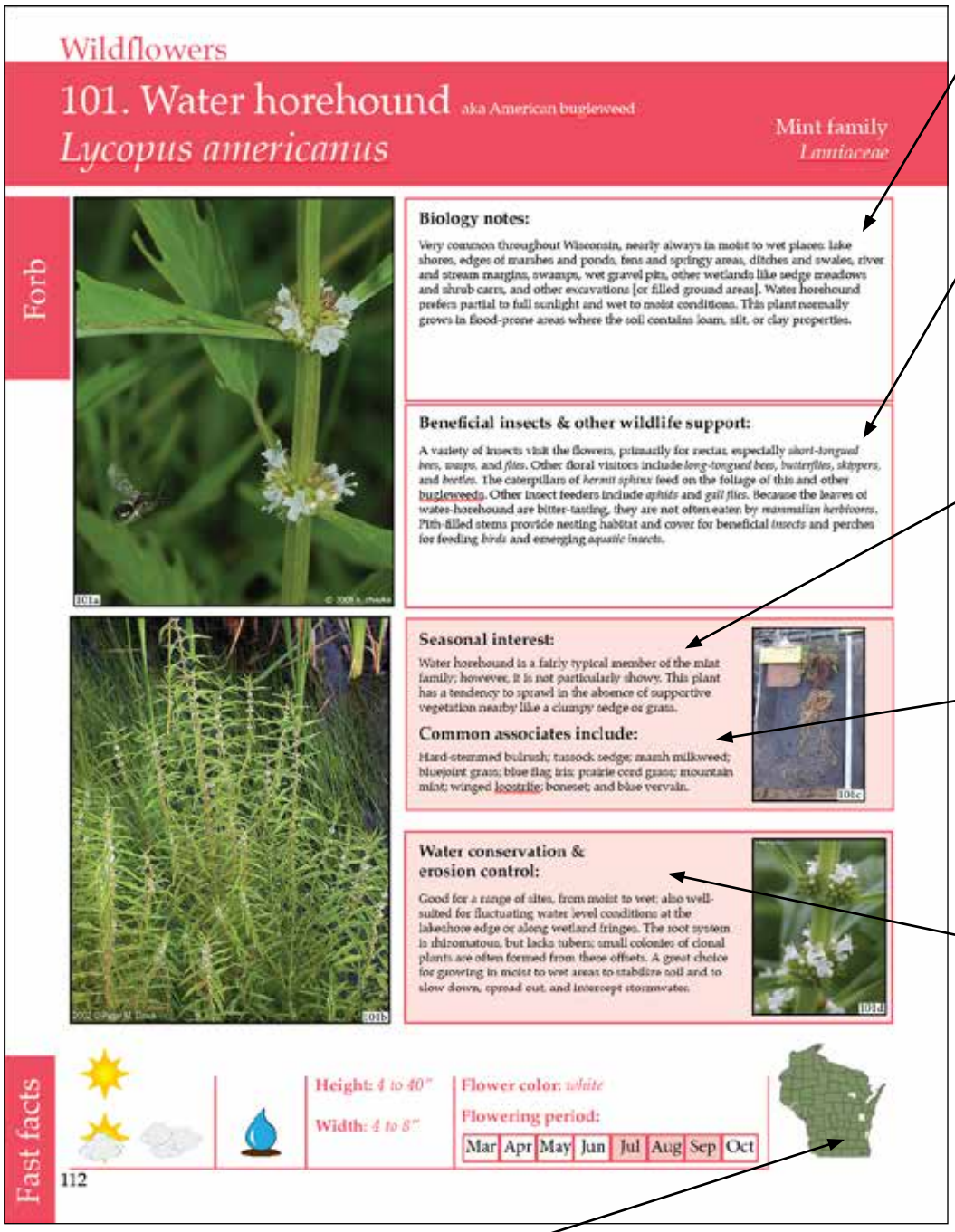
Regularly damp with standing water in the spring

Height & Width

Shares the height and width of the plant at maturity

Flowering color & period

Shares the color and flowering time by month for each plant



Biology notes

Provides information on the habitats in which this species is found throughout Wisconsin, as well as other tidbits on the plant's biology

Beneficial insect & other wildlife support

Provides information about the insects, birds, small mammals, and other wildlife utilizing this plant during its life cycle

Seasonal interest

Provides insights into how this species gives seasonal interest on the landscape throughout the year

Common associates listing

Gives the names of other native plants that this species grows with in natural communities

Water conservation & erosion control

Shares strategies for utilizing the plant in stormwater management and water conservation activities.

Map of Wisconsin

Each plant profile page provides a Wisconsin map with counties shaded in green where specimens of the plant have been collected and documented in an herbarium specimen. One of the other features you may notice in looking at these maps is Wisconsin's tension zone. A "tension zone" describes a geographic area that marks a change from one type of vegetation to another, with species from both areas intermingling in that zone.

The state of Wisconsin has two distinct regions, the southwest and the northeast. The boreal forest predominates the northeastern half, while prairie predominates in the southwestern sector. These areas are separated by a transition or tension zone. In addition to being a boundary for plants and animals, Wisconsin's tension zone also separates moisture differences. It is marked by a climatic gradient, with cooler, moister conditions to the north and relatively warmer, drier conditions to the south. It stretches in a loose s-shape from Burnett County in the north all across the state, ending in Racine County in the south.

1. Allegheny serviceberry
Amelanchier laevis

Rose family
Rosaceae

Small tree

Biology notes:

Prefers ~pH5.4. Tall shrubs or small trees with single or multiple upright stems. Adaptable to a variety of sites and soils but grows best in dry to moist, well-drained, loamy sand to loam soils. Ranges from a shrub to a small tree, most often in dry sandy open forests and savannas, rocky sites, sandy bluffs and shores; also on river banks, at borders of coniferous and deciduous forests, even bog borders. Smooth serviceberry can be trained to grow with a single trunk. Plants needs little pruning to develop a strong structure. One of the earliest flowering shrubs, the white flowers are borne in drooping clusters in mid-spring. Typically a loose, elegant shrub with dark green leaves. Our common *Amelanchier* species all appear to do best in sunny and dry sites but can be found in wetter sites too.

Beneficial insects & other wildlife support:

Serviceberries support 124 different species of *moths* and *butterflies* native to the USA including *viceroy, striped hairstreak,* & *Canadian tiger swallowtail butterflies*. At least 40 *bird* species (including *mockingbirds, cardinals, catbirds, black-capped chickadees, downy* and *hairy woodpeckers, scarlet tanagers, brown thrashers, hermit* and *wood thrushes, tufted titmouse, common flickers, cedar waxwings, towhees, Baltimore orioles, sharp-tailed grouse, eastern bluebirds*) eat the fruit of serviceberries. *Mammals* eat either the fruit or browse the twigs and leaves of serviceberry including *squirrels* (*eastern flying* and *red*), *cottontail rabbits* and *snowshoe hares, chipmunks, mice* (*white-footed*), *voles, fox, black bears, white-tailed deer, beaver, moose,* and *elk*. The fruits taste similar to blueberry; they are eaten fresh or cooked in pastries or puddings.

Seasonal interest:

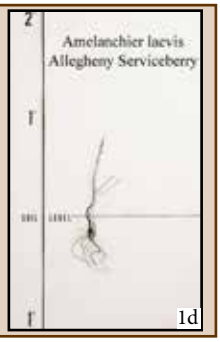
Allegheny serviceberry has fragrant white flowers that bloom in early spring and dark purple berries will begin to ripen in June giving this tree another common name: Juneberry. It has bright orange to red fall color; serviceberry is an ideal tree for small spaces.

Common associates include:

American basswood; Canada mayflower; partridgeberry; zig zag goldenrod; wild geranium; early meadow rue; alternate-leaf dogwood; and cinnamon fern.

Water conservation & erosion control:

Thicket forming with roots that are shallow, fibrous, and wide-spreading from a taproot; a good choice for growing in dry to moist areas to stabilize soil and to slow down, spread out, and intercept stormwater.



Fast facts

Height: *15 to 25′*

Width: *10 to 15′*

Flower color: *white*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

2. American hazelnut
Corylus americana

Birch family
Betulaceae

Shrub


2a

Biology notes:

Prefers ~pH6.5. Prefers well-drained, not too dry soils; found in open woods, thickets, hillsides, roadsides, and fencerows. Also in dryer savannas, river banks, and forests. Fairly large shrub, usually 6-8 feet tall. Common in the understory of forests statewide. Beaked hazel tends to prefer moist sites and American hazel grows better on the drier sites; both nuts are edible, also called American filberts. American hazelnut is a unisexual species that has separate male and female parts on the same branch; a single shrub will produce nuts. The nuts are sweet eaten raw [roasted] or ground into flour.

Beneficial insects & other wildlife support:

Hazelnuts support 124 different species of moths and butterflies native to the United States. Nuts of American hazelnut have a higher nutritional value than acorns and beechnuts; the nuts are eaten by *eastern chipmunks, mice (white-footed* and *deer), squirrels* (*gray, fox,* and *red*), *foxes, northern bobwhite, ruffed grouse, turkey, woodpeckers, bluejays, hares and rabbits, eastern chipmunk,* and *deer*. The leaves, twigs, and catkins are browsed by *rabbits, raccoon, skunk, beaver, turkey, grouse (sharp-tailed and ruffed), deer, and moose*. Because American hazelnut has a dense, low branching structure and large leaves, it provides excellent cover for various kinds of wildlife and ideal nesting habitat for many *songbirds*. The value of this shrub to *wildlife* is fairly high.


2b

Seasonal interest:

Fall color is one of the best, turning from oranges to red foliage.


2b

Common associates include:

Northern pin oak; big bluestem grass; Pennsylvania sedge; woodland sunflowers; New Jersey tea; rattlesnake master; wild quinine; smooth aster; wild cherry; wild white indigo, and white lettuce.

Water conservation & erosion control:

The woody root system has fibrous, shallow, lateral roots that sucker and form broad thickets; it can form extensive rhizomatous colonies over many years.


2d

Height: *20 to 35′*

Width: *6 to 8′*

Flower color: *male catkins yellowish-brown; female catkins are small, reddish*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

Fast facts

3. American highbush cranberry
Viburnum opulus L. subsp. trilobum

Moschatel family
Adoxaceae

Shrub


3a 2012 © Peter M. Dziuk

Biology notes:

Prefers ~pH6.0. Prefers moist soils; common in a variety of upland and lowland types. Borders of forests and shores, wet roadsides and ditches; banks and thickets along rivers and streams, fens; and other moist often open ground. Forms tall, dense patches with maple-like, lobed leaves; broad clusters of white flowers are followed by bright red berries that are attractive to assorted wildlife like cedar and bohemian waxwings. The fall fruit is edible and has a tart flavor that is similar to cranberries. The preference is full sun to light shade, wet to moist conditions, and a boreal-like climate with cool to moderately warm summers; give the soil where it grows some decaying organic matter to help it retain moisture.

Beneficial insects & other wildlife support:

Viburnums support 97 different species of moths and butterflies native to the USA. The nectar and pollen of the flowers attract primarily *small bees* (mostly *Halictid* & *Andrenid* bees), *Syrphid flies* and many other *flies*, and miscellaneous *beetles*. Many caterpillars of *moths* and *butterflies* (*spring azure*) rely on it, as do other insect feeders including *leaf beetle*, *long-horned beetle*, several *plant bugs*, and many *aphids*. The bright red fruit is eaten by the *ruffed grouse*, *cedar waxwing*, and other *songbirds*, particularly during the winter when other sources of food are scarce. *White-tailed deer* and *cottontail rabbits* will browse on the twigs and leaves.


3b 2005 © Peter M. Dziuk

Seasonal interest:

During autumn, the deciduous leaves become yellow to bright red; the fruit turn vibrant red when ripe and they last in the cold. A large, bushy shrub with multiple stems.


3c

Common associates include:

Sensitive fern; tamarack; zig zag goldenrod; calico aster; spotted Joe-Pye weed; orange jewelweed; spikenard; large-flowered bellwort; red-osier dogwood; forked aster; fowl manna grass; Jack-in-the-pulpit; and monkeyflower.

Water conservation & erosion control:

The root system is woody and branching with American highbush cranberry bush. This is a good back-of-the-border or edge-of-the woods shrub; also utilize it in dry to moist areas to stabilize soil and to slow down, spread out, and intercept stormwater.


3d

Fast facts

Height: *9 to 12′*

Width: *3 to 5′*

Flower color: *white*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

4. Balsam fir
Abies balsamea

Pine family
Pinaceae

4a

Biology notes:

Prefers ~pH5.2. Prefers moist, cool, well-drained, acidic soil but will tolerate some salt. Mid-to-late successional tree of the Northwoods, occasionally in swamps to the south. Found in coniferous and mixed forests, often open with aspen or paper birch [especially in vicinity of the Great Lakes shore]; cedar swamps, bogs, and spruce-fir stands. Grows well in saturated peat. This aromatic plant is historically a popular Christmas tree since the needles do not fall readily as do those of the spruces. Moderately short lived. The tallest firs are found on moist, loamy soil where they can reach heights of 85 feet. Shade tolerant; does best where it has protection from desiccating winds.

Beneficial insects & other wildlife support:

Firs support 117 different species of moths and butterflies native to the United States as either a larval host and/or source of nectar. The seeds and buds are food for *birds* including *ruffed grouse, squirrels, mice* and *voles*. *Moose* and *white-tailed deer* use the balsam fir for food [especially in winter], cover and shelter. The bark is browsed by *black bears*. Conifers like balsam fir provide important winter cover for year-round birds like *cardinals, black-capped chickadees, blue jays,* and *American goldfinches*. They also provide food and nesting habitat for breeding birds during the spring and summer.

4b

Seasonal interest:

Evergreen needles with silvery underside; cones are lovely blue-green and up-facing. A pyramidal shaped conifer tree.


4c

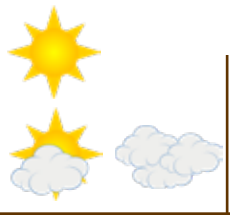
Common associates include:

Bunchberry; big-leaf aster; wild sasparilla; shield fern; Canada mayflower; blueberries; starflower; dwarf bush honeysuckle; thimbleberry; rose twisted-stalk; and sharp-lobed hepatica.

Water conservation & erosion control:

Balsam fir has fibrous, shallow roots even in deep soil; does best on sites with cool drainage and afternoon shade. Young trees are highly shade tolerant and can form dense stands in the understory. While perhaps the quintessential Christmas tree, they are an important source of winter deer browse as well as pulp timber.


4d



Height: *45 to 75′*

Width: *20 to 25′*

Fruit: *brown male and female cones*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

5. Beaked hazelnut
Corylus cornuta

Birch family
Betulaceae

Shrub

5a

Biology notes:

Prefers ~pH6.5 and well-drained soils; found in woods edges, roadsides, fencerows, thickets, dune thickets, and on river banks. Common in the understory of forests in the northern and central counties; especially along the borders and in clearings of northern hardwoods. Forms extensive rhizomatous colonies over many years. Beaked hazelnut is often found in fire-prone habitats, and it will resprout from buried rhizomes if top-killed by fire. Beaked hazelnut tends to prefer cool, moist sites and American hazelnut grows better on the drier sites; both nuts are edible.

Beneficial insects & other wildlife support:

Hazelnuts support 131 different species of *moths* and *butterflies* native to the USA. The male catkins are a winter food for *wild turkey* and *ruffed grouse*. Because beaked hazelnut has a dense, low branching structure and large leaves, it provides excellent cover for various kinds of *wildlife* and ideal nesting habitat for many *songbirds* and *game birds* like *wild turkey, American woodcock,* and *ruffed grouse*. Brush used by *beavers, cottontail rabbits, snowshoe hares, chipmunks,* and *wood ducks*. Nuts are eaten by *squirrels, foxes, northern bobwhite, ruffed grouse, wild turkey, woodpeckers,* and *white-tailed deer*. The leaves, twigs, and catkins are browsed by *cottontail rabbits, white-tailed deer, moose, wild turkey* and *ruffed grouse*.

5b

Seasonal interest:

Yellow-green fall foliage. Tall shrubs with numerous upright stems. Nuts form in clusters of 2-6.


5c

Common associates include:

Little bluestem; purple Joe-Pye weed; New Jersey tea; whorled milkweed; prairie coreopsis; Ohio spiderwort; rattlesnake master; wild quinine; butterfly milkweed; leadplant; and pale-leaved sunflower.

Water conservation & erosion control:

The woody root system of beaked hazelnut is shallow and branching; it is also strongly rhizomatous, forming vegetative offsets – as a result, colonies or thickets of shrubs are often formed.


5d

Fast facts

Height: *4 to 8′*

Width: *3 to 5′*

Flower color: *male catkins yellowish; female catkins are small, reddish.*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

6. Black chokeberry
Aronia melanocarpa

Rose family
Rosaceae

Small tree


6a

Biology notes:

Prefers ~pH5.6. Prefers moist, well-drained sandy soils. Fairly widespread in the northern and central counties of wetland edges, tamarack swamps, shrub swamps, shallow swales, rocky and sandy shores. Birds enjoy the blackish purple fruits that form in summer. Tart off the bush, fruit may be used to make tasty jams and jellies. Showy fall color ranging from orange to burgundy. It spreads by suckers to form thickets that form cover for a variety of birds, small mammals, and insects. An excellent wildlife shrub; flood tolerant.

Beneficial insects & other wildlife support:

Chokeberries support 29 different species of *moths* (*bluish spring*) and *butterflies* (*coral hairstreak, praeclara underwing*) native to the USA; the nectar and pollen of the flowers undoubtedly attract assorted *bees* (*mason, Andrenid, mining, small sweat,* & *bumble*) and other *insects*. The open flower form allows both small and large bees access to pollen and nectar offered by it. Chokeberry plants are browsed by *white-tailed deer, black bear, red fox, fox squirrel,* and *cottontail rabbits*. The fruits are eaten by *ruffed* and *sharp-tailed grouse* and *greater prairie chickens,* as well as *songbirds* like *cedar waxwings, American robins, gray catbirds,* and *northern cardinals*.

6b

Seasonal interest:

The foliage of black chokeberry starts out orange and then moves to burgundy and on to red in the fall; the beautiful purple-black berries make a delicious jelly.


6c

Common associates include:

Flat-topped aster; sensitive fern; Canada bluejoint grass; steeplebush; royal fern; steeplebush; tall coreopsis; and broom sedge.

Water conservation & erosion control:

Black chokeberry is a multi-stemmed, dense shrub with gray bark and attractive dark green leaves that are glossy; suckers at the base of this shrub can form small thickets that will braid out and slow down stormwater. It has a tidy and well-behaved upright growth form.


6d

Height: *3 to 6′*

Width: *2 to 4′*

Flower color: *white*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

Fast facts

7. Downy arrowwood viburnum
Viburnum rafinesquianum

Moschatel family
Adoxaceae

Shrub

7a

7b

Biology notes:

Prefers ~pH6.2. Transplants well and tolerates alkaline soil; intolerant of flooding. Found statewide in dry sandy or rocky woodlands and forests with oak, hickory, pine, or other trees, sometimes beech and maple openings; old fields, banks, fencerows, swampy ground, and thickets along rivers. It has interesting glossy green foliage with prominent teeth and good fall color. The preference is full or partial sun, mesic to dry conditions, and well-drained soil containing loam, clay loam, or some rocky material. This common understory shrub is very adaptable to cultivation in gardens and various landscape settings. It tends to be more productive of flowers and fruit in sunnier situations. This is one of the smallest viburnum shrubs. Winter hardiness is very good, especially if the stock has a northern provenance.

Beneficial insects & other wildlife support:

Viburnums support 104 different species of *moths* and *butterflies* native to the USA. The scented flowers of arrowwoods attract a variety of *insects*, especially *short-tongued bees, flies,* and *beetles*. These *insects* feed on the nectar or pollen of the flowers; some *bees* also collect pollen as food for their larvae. A variety of other *insects* feed on these shrubs including *leaf beetles, twig borers, midges, gall flies, plant bugs, aphids, saw flies, butterflies*, and many *moths*. *Songbirds* and *upland game birds* feed on the fruits of downy arrow-wood including the *ruffed grouse, wild turkey, northern flicker, brown thrasher, hermit thrush, eastern bluebird, cedar waxwing, white-throated sparrow*, and others. Some *songbirds*, including the *hooded warbler*, also use these shrubs for cover and nesting habitat. *Mammals* that feed on the fruits include the *black bear, red fox, striped skunk, opossum, fox squirrel, gray squirrel, striped chipmunk,* and *white-footed mouse*. The *cottontail rabbit* and *white-tailed deer* occasionally browse on the foliage and twigs.

Seasonal interest:

During the autumn, the leaves of this shrub become various shades of reddish-purple.


7c

Common associates include:

Northern red oak; bishop's cap; curly-styled wood sedge; wild geranium; hairy sunflower, zig zap goldenrod; and sweet cicely.

Water conservation & erosion control:

Downy arrow-wood is common in forest understories and along woodland margins; in heavier shade it is somewhat sparse but in the open it can form dense, shrubby thickets. Its multiple stems help braid out stormwater, slowing it down, and allowing it to infiltrate into the ground. The root system of this shrub is woody and spreading sometimes this shrub spreads by seed as well.


7d

Fast facts

Height: *5 to 7′*

Width: *3 to 5′*

Flower color: *white*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

8. Hill's oak/northern pin oak
Quercus ellipsoidalis

Beech/Oak family
Fagaceae

Biology notes:

Prefers ~pH7.2; good choice for higher pH soils. Easily grown in average, acidic, dry to medium moisture, well-drained soils in full sun especially original savanna and woodlands that occur on sandy outwash plains and gravelly moraines. Prefers consistent moisture throughout the growing season, but tolerates dry soils. Found throughout the state, although it is apparently rare in the north central area where it is occasionally found along the Wisconsin River. It is intolerant of shade and is most abundant on dry, acid, sandy soils, but is sometimes also found on heavier soils. It sprouts vigorously from the root collar or stump if top-killed or cut. Many of the trees in northeastern Wisconsin are multiple-stemmed, apparently derived as stump sprouts from cut or burned plants. This growth form is much bushier than is true of uncut individuals. Highly susceptible to oak wilt so are best planted alone.

Beneficial insects & other wildlife support:

Oaks support 557 different species of *moths* and *butterflies* native to the USA. Acorns are smaller and mature at the end of two seasons; they are an important food source for *wildlife* (e.g., *white-tailed deer, black bears, squirrels, small rodents* and some *birds*). Lower trunk often has stubs of old branches; dark gray brown bark with shallow grooves, inner bark orangish. The heavy wood of northern pin oak is used for furniture, flooring, and interior finishing as well as for posts, railroad ties, shingles, fuel, and some hardwood pulp. Trunk cavities are utilized as nesting sites by *wood ducks, eastern kingbirds,* and the federally endangered *Kirtland's warbler*, among others.

Seasonal interest:

Northern pin oak has astounding purple to bronze-scarlet red fall colors.

Common associates include:

Butterfly milkweed; rough blazing-star; sky-blue aster; Ohio spiderwort; spotted bee balm; leadplant; woodland sunflower; and green milkweed.

Water conservation & erosion control:

It has a deep root system and is very drought resistant; good for dry, sunny slopes. It is an adaptable fast grower and a good shade tree.

Height: *50 to 65′*

Width: *30 to 40′*

Flower color: *brownish*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

9. Meadowsweet
Spiraea alba

Rose family
Rosaceae

Shrub


9a

9b

Biology notes:

Grows in moist to wet soils of wet shores, marshes, sedge meadows, tamarack swamps, peatlands, edges of streams, interdunal swales, moist borders of forests and shallow soil over rock. Meadowsweet is an important erosion control shrub at the land-water interface on banks where it reduces the energy of splashing wave action. Forms a dense, low hedge that blocks geese from shore access. It does not tolerate shade, or compete well with larger shrubs; it tends to fill in gaps or openings where it is not crowded.

Beneficial insects & other wildlife support:

Meadowsweet supports 89 different species of *moths* and *butterflies* (*spring azure* larval host). The flowers produce nectar and pollen; they attract *bumblebees*, various other *bees, wasps, adult long-horned beetles, moths* and *butterflies*. The caterpillars of the *butterfly (spring azure)* feed on the flowers and buds of meadowsweet. The caterpillars of several *moths* also feed on meadowsweet [usually the leaves]. The *leaf beetle* is a specialist feeder of meadowsweet, while the larvae of several *gall gnats* also rely on these shrubs as a source of food and habitation. Among *vertebrate animals*, the *ruffed grouse* and *greater prairie chicken* eat the flowerbuds of it; the latter gamebird also eats the seeds during the fall and winter. *White-tailed deer* and *moose* often browse the upper leaves and twigs, while the *cottontail rabbit* and *snowshoe hare* occasionally browse the lower leaves and twigs.

Seasonal interest:

Great butterfly plant; pyramidal cones of white flowers appear in mid-summer; it resembles steeplebush, which may be growing along side it but has distinctly pink flowers and its leaves are silvery white on the underside.


9c

Common associates include:

Culver's root; marsh milkweed; sandbar willow; orange jewelweed; pointed broom sedge; monkey flower; bluejoint grass; boneset; and fringed loosestrife.

Water conservation & erosion control:

Good for low-growing areas along the shore and as bank cover; protects lake edge from ice by strengthening the toe with roots. It has multiple upright stems; spreads by suckers to form colonies; a good thicket-forming shrub for a rain garden or wet swale mass planting.

9d

Fast facts

Height: *2 to 4′*

Width: *2 to 3′*

Flower color: *white*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

10. Nannyberry
Viburnum lentago

Moschatel family
Adoxaceae

Shrub

Biology notes:

Prefers ~pH6.2. Grows best in well-drained soils. Typically in mesic or moist hardwood forests, often with oaks, aspen, basswood, or a variety of other canopy species. Also found on lakeshores, riverbanks, in fens, sedge meadows, tamarack swamps, floodplains and pond margins, often on mineral soils but sometimes in shallow peat. The preference is partial sun, moist to mesic conditions, and fertile loamy soil. However, this woody plant can adapt to other environmental conditions as it is easily cultivated. This is one of the larger viburnum; its bark becomes scaly to blocky on older plants.

Beneficial insects & other wildlife support:

Viburnums support 104 different species of *moths* and *butterflies* native to the USA. The nectar and pollen of the flowers attract *honeybees, Andrenid bees, Halictid bees, Syrphid flies, dance flies, Muscid flies*, and miscellaneous *beetles*. Other insects feed on the foliage, sap, and other parts of nannyberry including *leaf beetles, plant bugs, aphids, treehoppers,* and *moths*. The fruits of nannyberry are eaten by many *upland gamebirds* and *songbirds*, including the *ruffed grouse, northern bobwhite, northern flicker, gray catbird, American robin, hermit thrush, eastern bluebird, cedar waxwing, rose-breasted grosbeak,* and *purple finch*. Birds that use viburnums for nest sites include the *white-eyed vireo, indigo bunting, prairie warbler,* and *catbir*d. Some *mammals* also use it for food including *white-tailed deer* (twigs & foliage), *cottontail rabbit* (bark), *American beaver* (wood), *eastern chipmunk* (fruits), *fox, gray red, and fox squirrels* (fruits), and *white-footed mouse* (fruits).

Seasonal interest:

The leaves become orange, maroon, or dark red during the autumn; it has glossy, dark green leaves during summer.

Common associates include:

Common wood sedge; wild black currant; woodland phlox; spring beauty; silky wild rye; wild grape; and common lake sedge.

Water conservation & erosion control:

A good plant for low-growing areas with moist soils and as bank cover on rockier slopes, lakeshores, and wetland edges; forms thickets of multiple erect stems and branches that braid out stormwater, slow it down, and allow it to infiltrate into the ground.

Height: *to 20′*

Width: *5 to 7′*

Flower color: *white*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

Fast facts

11. Northern bush honeysuckle
Diervilla lonicera

Honeysuckle family
Caprifoliaceae

Shrub


11a

Biology notes:

Prefers ~pH6.0. Grows in average to drier, rocky or sandy, well-drained, slightly acidic soils. Common shrub found in dry woods and forests, usually sandy or rocky, with aspen, birch, oak, or conifers, especially along borders at shores, cliffs, fields, roads, and clearings; thriving after some disturbance such as fire; old dunes, sandy bluffs, railroad embankments, thickets, and fencerows. Great for low-growing areas around stairways in the lake access zone or those difficult dry, shaded areas. Bush honeysuckle suckers freely and slowly forms broad thickets with age; it is a smaller, rounded shrub with yellow flowers and bronze foliage. Its tolerance to drought and soil compaction provides additional landscape benefits; does best in light shade to partial [afternoon] shade but can tolerate full shade as well.

Beneficial insects & other wildlife support:

Native honeysuckles support 37 different species of *moths* and *butterflies*. Northern bush honeysuckle has fragrant flowers that are attractive to assorted *bees* (*bumble, metallic green sweat, & small sweat*), *butterflies, moths,* and *ruby-throated hummingbirds*; it has special value to *bumble bees*. Several *birds* that use this plant include *eastern bluebirds, purple finch, juncos, white-throated sparrow,* and *hermit thrush*. It provides winter browse for *moose*, and winter and summer browse for *white-tailed deer*. *Sharp-tailed grouse* eat the vegetative buds; it also provides nesting habitat and cover for assorted *birds*, *small mammals* and *beneficial insects*.


11b

Seasonal interest:

It has red fall foliage that varies from shades of burgundy to scarlet; a fine choice as a low hedge shrub.

Common associates include:

Early meadow rue; witch hazel; wood betony; paper birch; smooth aster; Pennsylvania sedge; miterwort; wild geranium; Canada mayflower; ivory sedge; starry false Solomon's seal; and yellow pimpernel.

11c

Water conservation & erosion control:

A good small, mounding shrub for areas that need low-growing vegetation on drier soils; also a suitable plant for bank cover on rockier slopes. It has fibrous, shallow, lateral roots that are stoloniferous and sucker freely spreading into thickets slowly over time.


11d

Fast facts

Height: *1 to 3′*

Width: *1 to 3′*

Flower color: *yellow*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

12. Pagoda dogwood
Cornus alternifolia

Dogwood family
Cornaceae

Small tree

Biology notes:

Prefers ~pH6.0 and well-drained, moist, loamy and/or sandy soils; tolerates clay soils with adequate drainage. Found in deciduous and mixed forests and woods, either as an understory shrub or along borders; floodplains and cedar swamps; banks and thickets above lake and stream edges. Favorite of many birds; most noticeable characteristic is its fantastic display of purple to blue berries atop red stems followed by deep maroon fall foliage. When full-grown, a large shrub or small tree. This shrub prefers partial sun, moist well-drained conditions, and a rich loamy soil that is somewhat acidic; it also adapts to full sun and light shade. A fine small tree for wooded landscapes and a good choice for the edge of a woods or the corner of a house to soften harsh edges.

Beneficial insects & other wildlife support:

Dogwoods support 118 different species of *moths* and *butterflies* native to the USA. The nectar and pollen of the flowers attract many kinds of *insects*, including *long-tongued bees, short-tongued bees, wasps, flies,* and *butterflies*. Many *insects* feed on the leaves, wood, and other parts of dogwoods including *moth* and *butterfly* caterpillars, *long-horned beetles, leaf beetles, plant bugs*, and *aphids*. The berries are a popular food source of some 34+ species of *songbirds* (for example, *wood ducks, wild turkey, eastern bluebird, cardinal, ruffed grouse, catbird, purple finch, common flicker, crested flycatcher, evening* and *pine grosbeak, kingbird, yellow-bellied sapsucker, tree swallows, brown thrashers, hermit* and *wood thrushes, red-eyed vireo, cedar waxwing, woodpeckers* (*downy, hairy*, and *red-bellied*); they are also eaten by the *white-footed mouse, wild turkey,* and *eastern chipmunk*. *White-tailed deer, squirrels, eastern chipmunks, white-footed mouse, black bear, raccoon, skunk, moose,* and the *cottontail rabbit* feed on the leaves and twigs, while *beavers* sometimes feed on the branches of this shrub near water.

Seasonal interest:

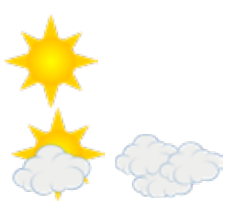
It has deep maroon fall foliage; blue berries that form on orange-red stems in mid-summer and are loved by birds.

Common associates include:

Doll's eyes; blue cohosh; cutleaf toothwort; jack-in-the-pulpit; wild ginger; sharp-leaved hepatica; white lettuce; yellow trout lily; porcupine sedge; bloodroot; wild columbine; and spinulose wood fern.

Water conservation & erosion control:

A well-developed specimen of this attractive shrub has branches that are arranged in horizontal tiers, somewhat resembling the multiple roofs of a pagoda – thus, it intercepts rainfall very well; the root system is shallow, fibrous and wide spreading.



Height: *15 to 25′*

Width: *6 to 10′*

Flower color: *white*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

Fast facts

13. Pasture rose
Rosa carolina

Rose family
Rosaceae

Shrub


13a

Biology notes:

Prefers ~pH6.5. Pasture rose grows in average to drier, rocky or sandy, well-drained soils. Found in drier habitats of prairies, dry sandy forest, oak [and jack pine] savannas; sandy banks, fields, dunes, and fencerows; roadsides and railroad embankments; and borders and edges of woodlands and forests. Clone-forming, spreads through rhizomatous roots that form thickets; great for restorations and low-maintenance landscaping. It is a fairly low-growing, suckering shrub with very attractive, fragrant, pink flowers that grow in small clusters.

Beneficial insects & other wildlife support:

Roses support 135 different species of *moths* and *butterflies* native to the USA. The most common visitors to the flowers are *long-tongued bees*, such as *bumblebees, Anthophorine bees*, and *miner bees, green metallic bees, Syrphid flies*, and various *beetles*. All of these insects seek pollen, as the flowers provide no nectar. The caterpillars of many species of *moths* feed on this and other wild roses. Other kinds of *insects* also feed on this plant, including *weevils, chafer beetles, tumbling flower beetles, and prairie spittlebugs* [they eat pith of woody stems, buds, and rose hips]. Several upland gamebirds and *small mammals* also eat the rose hips, including the *greater prairie chicken, bobwhite, cottontail rabbit, eastern striped skunk,* and *white-footed mouse*. These *animals* help to disperse the seeds of the plant across considerable distances. The leaves, buds, and twigs are browsed by the *white-tailed deer* and *elk*, notwithstanding the presence of occasional prickles.


13b

Seasonal interest:

It has bronze to red fall foliage that varies from shades of burgundy to scarlet; a fine choice as a low hedge shrub.


13c

Common associates include:

June grass; white wild indigo; lance-leaf coreopsis; woodland sunflower; little bluestem; birds-foot violet; prairie dock; white sage; and sky-blue aster.

Water conservation & erosion control:

Good plant for view corridor areas as a low-growing option on drier soils; great low-maintenance landscaping plant.


13d

Fast facts

Height: *3 to 6′*

Width: *5 to 10′*

Flower color: *pink*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

14. Pussy willow
Salix discolor

Willow family
Salicaceae

14a

Biology notes:

Prefers ~pH 6.0-7.0. It occurs in both mineral and peaty soils. It is common and abundant in wetlands throughout Wisconsin including marshes, riverbanks, streambanks, lakeshores, swales, fens, conifer swamps, hardwood swamps, bogs, ditches, wet thickets and fields, rarely upland in sandy or rocky ground. Typically a large, coarse shrub with multiple bushy stems. It is tolerant of drought and short-duration spring flooding but not of prolonged flooding or sedimentation. Resists damage from wind and ice; spreads well via abundant seeds.

Beneficial insects & other wildlife support:

Willows support 455 different species of *moths* and *butterflies* native to the USA. The nectar and pollen of its flowers attract mostly *small bees* and *flies*. Other *insects* that visit it include *honeybees and bumblebees, Ichneumon wasps, sawflies, butterflies, beetles,* and *plant bugs*. A large number of *insects* feed on the leaves or branches of this and other willows. This includes the caterpillars of *butterflies, skippers,* and *moths,* the grubs of *long-horned* and *leaf beetles, aphids, thrips, plant bugs, stinkbugs,* and the larvae of some *sawflies*. Many of these *insects* are an important source of food to various birds. Willows are also eaten by vertebrate animals, including the *ruffed grouse* [buds], *tree squirrels* [buds, seed capsules], the *wood turtle* and *snapping turtle* [fallen leaves], *muskrats* [bark], *beavers* [bark, wood], *deer* and *elk* [leaves, branches], and *cottontail rabbits* [bark, young saplings]. Some *birds* use willows as cover for their nests (*yellow warbler, warbling vireo*), while *beavers* use willow branches in the construction of their dams and lodges. It can withstand some browsing.

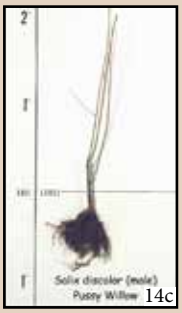

14b

Seasonal interest:

It has deep brown colored branches; its catkins appear very early in the spring, often when snow is still on the ground. The leaves have beautiful white undersides that make it quite showy.

Common associates include:

Great angelica; turtlehead; dense blazing star; prairie cord grass; Riddell's goldenrod; sneezeweed; New England aster; and marsh milkweed.



14c

Water conservation & erosion control:

Forms single or usually multiple trunks that braid water flow and slow it down; the root system is woody, branching, and shallow; it forms thickets over time; responds well to being cut back when out of the lakeshore buffer; can provide erosion control at the land-water interface from ice action.


14d



Height: *6 to 10′*

Width: *5 to 15′*

Flower color: *white*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

15. Red maple
Acer rubrum

Soapberry family
Sapindaceae

Tree

Biology notes:

Prefers ~pH6.0. Red maple features something red in each of the seasons—buds in winter, flowers in spring, leafstalks in summer, and brilliant foliage in autumn. It grows in acidic, loamy, moist, rich, sandy, silty loam, well-drained and clay soils. In almost all sorts of forests and savannas, commonly in moist forests and swamps (deciduous and coniferous); also upland forests and dry sandy forests of plains, dunes, and hills (often with aspens, oaks, and/or pines). Sprouts readily after fire or cutting. This and silver maple are among the first plants to bloom in the spring helping pollinators and birds; often planted as a shade tree.

Beneficial insects & other wildlife support:

Maples support 297 different species of *moths* and *butterflies* native to the USA. Some *upland gamebirds* (*ruffed grouse, wild turkey, bobwhite, etc.*) *songbirds* (*American robin, prairie warbler, red-breasted nuthatch, purple finch, cardinal, pine siskin, evening, pine* and *rose-breasted grosbeaks, American goldfinches*), and *waterbirds* eat the seeds and buds, while the *yellow-bellied sapsucker* drills holes into the bark to feed on sap. *Woodpeckers* and other *insectivorous songbirds* often feed for insects on maples; these insects are especially important in feeding young nestlings. Twigs and sometimes the leaves of red maple are browsed by *white-tailed deer, moose,* and *elk,* primarily during the winter when other foods are scarce; the leaves of this tree are reportedly toxic to cattle and horses. *Cottontail rabbits* eat young seedlings, while *tree squirrels* occasionally eat the seeds. The cavities of older trees are used as nesting habitat by some *birds* (*screech owl, pileated woodpecker, wood duck, northern flicker, tree swallow*) and *tree squirrels* (*fox, gray, and red squirrels*); such cavities are also used by various *tree-roosting bats*.

Seasonal interest:

Yellow to red fall color; syrup production from its sap is an important cultural resource and food.

Common associates include:

Fringed sedge; spikenard; buttonbush; red-osier dogwood; northern marsh fern; partridgeberry; starflower; and large-flowered trillium.

Water conservation & erosion control:

Fast growing but relatively short-lived; its seedlings are very tolerant of shade. This tree tolerates some drought and seasonal flooding but not sedimentation; its roots are shallow, widely spreading and fibrous.

Fast facts

Height: *40 to 60′*

Width: *10 to 20′*

Flower color: *male buds are yellowish to pink, female buds are red to magenta*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

16. Red osier dogwood
Cornus sericea

Dogwood family
Cornaceae

Shrub

16a

Biology notes:

Prefers ~pH6.0. Prefers moist, well-drained soils. Found in almost all sorts of moist situations: marshes, swamps (even coniferous, with tamarack, spruce, and/or cedar), wet shores, sides of rivers and streams; on rock outcrops and talus slopes; coniferous and mixed thickets on shores and common on sand dunes. Adaptable, spreads by stoloniferous roots to form thickets. The preference is full sun to partial shade, moist conditions, and soil that is loamy, silty, or sandy. This shrub develops fairly quickly and tolerates temporary flooding. It should not be located at sites that are too hot and dry.

Beneficial insects & other wildlife support:

Dogwoods support 118 different species of *moths* and *butterflies* native to the USA. The nectar and pollen of the flowers attract many kinds of *insects*, including *bees (mining, small green sweat, & small sweat), wasps, flies, and butterflies*. Other *insects* feed on the leaves, suck plant juices, or bore through the wood including caterpillars of many *moths, long-horned and leaf beetles, aphids,* and *plant bugs*. Because of their higher than average fat content, the white drupes (fruit) of *red-osier dogwood* are an important food source for *wood ducks*, 18 species of *songbirds*, and *upland gamebirds* like *ruffed grouse* and *wild turkey*. The *white-footed mouse* and other *small rodents* also eat the fruit. *White-tailed deer* and *cottontail rabbits* browse on the leaves and woody stems; *beavers* also use the stems as a food source and as construction material for their dams and lodges. To a minor extent, the fallen leaves are eaten by some *turtles*, including *snapping turtle*.

16b

Seasonal interest:

It has creamy white flower clusters in late spring; it has orange to red leaf color that darkens to purple in fall. Its bright red winter twig color stands out brightly in winter landscape.


16c

Common associates include:

Joe-Pye weed; boneset; water horehound; marsh blue violet; sensitive fern; cardinal flower; swamp thistle; culver's root, and great blue lobelia.

Water conservation & erosion control:

Can provide some protection from ice at the water's edge; the woody root system is branching and shallow. It forms clonal offsets that are produced from either underground runners or above ground stolons, resulting in colonies of shrubs forming thickets. Red-osier dogwood is good for mass plantings in wet swales or other wetter sites, as well as in rain gardens especially along the berm edge. A great choice for growing in moist to wet areas to stabilize soil and to slow down, spread out, and intercept stormwater.


16d

Height: *7 to 9′*

Width: *3 to 6′*

Flower color: *white*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

Fast facts

17. River birch
Betula nigra

Birch family
Betulaceae

Tree

17a

Biology notes:

Prefers ~pH6.0. A floodplain species found along rivers and streams with silver maple and cottonwoods; it is particularly well-adapted to flooding and sedimentation. Under-utilized as a landscape tree, it can be planted almost anywhere in the U.S. The species is valued for its rapid growth, its ability to deal with wet feet, and its short-term drought tolerance; it has unique, curling bark, spreading limbs and relative good resistance to birch borer. It is the most heat-tolerant of all North American birch species. For best growth, soils should be moist and acidic. Found in moist soils along watercourses throughout its native range.

Beneficial insects & other wildlife support:

Birches support 411 different species of *moths* and *butterflies* native to the USA as either a larval host and/or source of nectar. Many kinds of insects feed on various parts of river birch, especially the caterpillars of many *moths* and *butterflies*. Other *insect feeders* include the larvae of *sawflies*, the grubs of *wood-boring beetles*, *leaf beetles*, *plant bugs*, *shield bugs*, *leafhoppers*, and *aphids*. *Ruffed grouse*, *greater prairie chicken*, *siskins*, *crossbills*, *purple finch*, and *black-capped chickadees* eat the seeds, buds, or catkins of birch trees. The seeds are also eaten by *red squirrels*. *Beavers* will feed on the wood and bark of river birch and they use its branches in the construction of their dams and lodges. *White-tailed deer* browse on the twigs and foliage, while the *cottontail rabbit* gnaws on the bark of saplings and browses on the twigs and foliage of seedlings.


17b

Seasonal interest:

It has golden-yellow foliage in fall and rich cinnamon-brown exfoliating bark year-round. River birch makes a nice mass planting along the edges of woodlands, streams, and rivers.


17c

Common associates include:

Cardinal flower; rice cut grass; palm sedge; wood reed grass; swamp white oak; buttonbush; American elm; and great blue lobelia.

Water conservation & erosion control:

River birch prefers wet to dry soil conditions and it is intolerant of alkaline soils. It does tolerate poor drainage; it's water-seeking surface roots compete well with turf grass. While our other four native birch species are restricted to the cooler northern temperate zone, river birch's North American range extends all the way to the Gulf of Mexico. This higher heat tolerance is one reason river birch is not so susceptible to the bronze birch borer that is so lethal to our other species when planted in hotter and drier urban sites.


17d

Fast facts

Height: *40 to 50′*

Width: *15 to 25′*

Flower color: *separate male and female catkins on same branch*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

18. Shadblow / downy serviceberry
Amelanchier arborea

Rose family
Rosaceae

Shrub

18a

Biology notes:

Prefers ~pH5.5-6.5. In rich or swampy to dry forests and woodland borders, but most often noticed on dry sandy open forests with red maple, aspen, oaks, and / or jack pine. One of the earliest flowering woody plants – essential food early in the growing season for many critters. In most areas, downy serviceberry is simply a cloud of white in bloom. Its trunk becomes highly ornamental being smooth gray, developing dark striations of charcoal with full maturity.

Beneficial insects & other wildlife support:

Serviceberries support 124 different species of *moths* and *butterflies* native to the USA. The nectar and pollen of the flowers attract *honeybees, Andrenid bees, Halictid bees, Syrphid flies, Tachinid flies, Buprestid beetles* and other *insects*. Some *insects* feed on the foliage, bore through the wood, or suck plant juices of serviceberry including the caterpillars of *butterflies* and many *moths, long-horned beetles, lace bugs* and *sawflies,* and *aphids*. The fruits of serviceberries are an attractive source of food to the *ruffed grouse, hairy woodpecker, hermit thrush, cedar waxwing, Baltimore oriole,* and many other *birds*. Some *mammals* also eat the fruit, including the *red fox, striped skunk, eastern chipmunk,* and *white-footed mouse*. *Beavers* occasionally gnaw on the bark and wood of small trees or shrubs that grow along riverbanks, while *white-tailed deer* browse on twigs and leaves of it.

18b

Seasonal interest:

Fruit is reddish-purple to purple-black color in July and August; it has warm yellow to apricot fall color. Very easy to grow and provides year-round interest.

Common associates include:

Wild garlic; pagoda dogwood; Canada mayflower; early meadow rue; curly wood sedge; pussytoes; calico aster; zig zag goldenrod; and large-flowered bellwort.

18c

Water conservation & erosion control:

A tall, multi-stemmed shrub or small tree; its roots are shallow, fibrous, and wide-spreading from a taproot. Thickets of this shrub that form over time from its spreading root system help braid out stormwater, slowing it down, and allowing it to infiltrate into the ground.


18d

Height: *10 to 15'*

Width: 3 to 5'

Flower color: *white; fragrant*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

Fast facts

19. Speckled alder
Alnus incana

Birch family
Betulaceae

Tree / shrub


19a

Biology notes:

Prefers ~pH5.0. Prefers moist to wet soils. A common tall shrub in older zones of wet edges, along streambanks, lakeshores, bogs, swamps, swales, roadsides and in extensive mucky swamps. This widely adapted species can be found in essentially all wetland types of the upper Midwest. The preference is full to partial sun, wet to moist conditions, and an acidic soil that is rocky, gravelly, or sandy. It can form dense thickets on the shores of lakes like "inland mangroves"; it often helps resist ice push in concert with ice ridges on lakeshores. Root nodules of alders support nitrogen-fixing bacteria beneficial to soil health; like a legume, they fix nitrogen to soil. Alders are beautiful and functional plants and deserve to be more widely grown in shoreland gardens; they are fast growing and can easily be trained to a tree-like form by removing lower branches. They are among the first flowers to open in the spring.

Beneficial insects & other wildlife support:

Alders support 255 different species of moths and butterflies native to the USA. Alders are a food plant of many insects including the caterpillars of *butterflies* and *moths, sawflies, leaf* and *long-horned beetles, alder borers, weevils, aphids, shield bugs,* and *spittlebugs*. Among vertebrate *animals, birds* like *American goldfinches, common redpoll, pine siskin, white-winged crossbill, swamp sparrow, American woodcock,* and *ruffed grouse* eat the seeds; the latter two bird species also eat the catkins and / or buds. Other animals that use alder as a food plant include *beaver* and *muskrats* (bark & wood), *white-tailed deer, moose,* and *elk* (twigs and leaves), the *woodland jumping mouse* [cones & seeds], and the *wood turtle* (fallen leaves). Alder provides nesting habitat and cover for the *rusty grackle* and many other *birds*.


19b

Seasonal interest:

Its catkins [male and female flowers on the same plant] are attractive into winter; it has pretty speckled bark.


19c

Common associates include:

Green arrow arum; fringed sedge; blue flag iris; dark-green bulrush; water willow; swamp rose; marsh marigold; Canada bluejoint grass; and prairie cord grass.

Water conservation & erosion control:

Speckled alder spreads by root suckers and layering of lower branches; it can provide effective ice protection at the water's edge from ice push. It can grow up to 20 stems from a single root crown; speckled alder's acceptance of a wide variety of soil types makes it a good choice for disturbed site rehabilitation.


19d

Fast facts

Height: *15 to 25′*

Width: *5to 10′*

Flower color: *male catkins reddish-brown and female catkins red*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

20. Steeplebush/hard-hack
Spiraea tomentosa

Rose family
Rosaceae

Shrub

20a

Biology notes:

Needs moist acidic soils in order to grow best. Found in bogs, tamarack swamps, meadows, peatlands, prairie edges, sandy-peaty shores and dried lake beds, marshes, and borders of ponds. Steeplebush is an important erosion control shrub at the land/water interface on banks where it reduces the energy of splashing wave action and ice push. It forms a dense, low hedge at the lakeshore edge, blocking nuisance Canada geese and common mergansers from shore access. It does not compete well with larger shrubs; it tends to fill in gaps or openings where it is not crowded. Steeplebush needs sun; it will dwindle in shade. Fast growing for habitat restoration; good selection for pond and lake margins, low spots or other moist locations in the landscape. The preference is full sun, wet to moist conditions, and an acidic, sandy soil; the woody stems often die down to the ground during the winter.

Beneficial insects & other wildlife support:

Spireas support 89 different species of *moths* and *butterflies* in the USA; it is the larval host for the *spring azure butterfly*. The flowers attract primarily *bees, flies,* and *beetles*; abundant pollen is produced, but only small amounts of nectar. Our rare *karner blue butterfly* has been observed to nectar at the flowers of steeplebush. The caterpillars of the *spring/summer azure butterfly* feed on the flowers, buds, and developing seed capsules of *Spiraea* spp., while the caterpillars of some *moths* are known to feed on the leaves. Although *white-tailed deer* have been known to browse on steeplebush, it is not preferred as a source of food because of its bitter taste.

20b

Seasonal interest:

Important butterfly and moth host plant; pink spikes of flowers mid to late summer make steeplebush a popular species.


20c

Common associates include:

Bluejoint grass; flat-topped aster; downy sunflower; sensitive fern; dense blazing star; seedbox; slender mountain mint; and cinnamon fern.

Water conservation & erosion control:

Good for low-growing areas along the shore and as bank cover; protects lake edge from ice by strengthening the toe with roots. It has multiple upright stems and spreads by suckers to form colonies. A good thicket-forming shrub for a rain garden or wet swale mass planting.


20d

Height: *3 to 6′*

Width: *2 to 3′*

Flower color: *pink*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
				■	■		

Fast facts

21. Swamp rose
Rosa palustris

Rose family
Rosaceae

Shrub


21a


21b

Biology notes:

Prefers ~pH6.5. Grows in wet, rich soils. Found in moist habitats like bogs, wet conifer swamps, wet thickets, swales, and particularly sandy marsh margins and shores of streams, ponds and lakes in central and eastern Wisconsin. Spreads through rhizomatous roots that form thickets. Lovely fragrance from the many spring blooms that attract assorted pollinators. An upright shrub with numerous bushy-branched, thorny stems. Best grown in acidic, organically rich, and boggy to wet soils in full sun. Tolerates light shade, but best flowering and disease resistance generally occur in full sun. This shrub tolerates standing water quite well. Does well in drier, sandier soils as well but requires water during droughty weather. The root system produces woody rhizomes; vegetative colonies sometimes develop from these rhizomes.

Beneficial insects & other wildlife support:

Roses support 135 different species of *moths* & *butterflies* native to the USA. The flowers are cross-pollinated primarily by *bumblebees* and other *long-tongued bees*. Less effective *pollinators* include *Halictid bees, Syrphid flies, tumbling flower beetles*, and other *beetles*. Only pollen is available as a floral reward. Many *insects* feed on the foliage, flowers, and other parts of this and other roses as well. They include the caterpillars of *moths & butterflies*, as well as *sawflies, slugs, leafhoppers, plant bugs, beetles, maggots, thrips, mites*, and *aphids*. Some vertebrate animals also feed on roses. The fruit (rose hips) is eaten by some *upland gamebirds* (*ruffed grouse, greater prairie chicken*, etc.), 20+ *songbirds* (*cedar waxwing, Swainson's thrush*, etc.), *small rodents* (*white-footed mouse, woodland deer mouse*), and other *mammals* (*black bear, striped skunk*). *White-tailed deer* browse on the twigs and leaves, while *beavers* use the woody stems as a food source and construction material for their dams and dens. The thorny, arching stems of this taller rose create habitat for nesting *songbirds* including the *catbird, northern mockingbird, brown thrasher, yellow warbler,* and *cardinals*.

Seasonal interest:

Fruit is red in fall through winter; canes are red in fall as well. It produces attractive pink flowers that are relatively large in size and lovely in fragrance.

21c

Common associates include:

Green arrow arum; fringed sedge; blue flag iris; dark-green bulrush; water willow lake sedge; peachleaf willow; woolgrass; marsh fern; and panicled aster.

Water conservation & erosion control:

Can provide ice protection at the water's edge; good as a berm plant on rain garden edges and pond fringes as it acts as a living fence to deter browse. It forms clumps and in time thickets of branching canes that braid water flow, slow it down, and help with stormwater infiltration.


21d

Fast facts

Height: *6 to 8'*

Width: *3 to 5'*

Flower color: *pink*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

22. Swamp white oak
Quercus bicolor

Beech / Oak family
Fagaceae

22a


22b

Biology notes:

Prefers ~pH6.0. Prefers slightly acidic to neutral, deep, moist, well-drained soil. Found in floodplains, swamps, and other poorly drained sites. Shallow root system well-adapted to survive spring flooding and sedimentation. Acorns are one of the best sources of food for wildlife. Salt tolerant. A worthwhile plant for wet areas; good for expansive sites like parks, campground shorelines, and beaches.

Beneficial insects & other wildlife support:

Oaks support 557 different species of *moths* and *butterflies*. Many *leafhoppers* prefer swamp white oak as a host plant: other insect feeders include *aphids, wood-boring and leaf beetles, and treehoppers, weevils,* and *plant bugs*. It is important too many *moth* and *butterfly* caterpillars that seek oaks as a host and / or nectar plant. An attractive source of food for *woodpeckers, warblers, flycatchers,* and other *insectivorous birds*. Its acorns are an important source of food for many birds and mammals including *wood duck, wild turkey, ruffed grouse, white-breasted nuthatch, blue jay, common grackle, rusty blackbird, brown thrasher, red-headed woodpecker,* and *red-bellied woodpecker*. Acorns are also eaten by the *black bear, raccoon, white-tailed deer, white-footed mouse,* and various *tree squirrels*. There is even a record of a *spiny softshell turtle* eating acorns. The cavities of older trees are used as nesting habitat by some *birds (screech owl, pileated woodpecker, wood duck, northern flicker, tree swallow)* and *squirrels (fox, gray, tree, and red)*; such cavities are also used by various *tree-roosting bats*.

Seasonal interest:

Swamp white oak turns yellow-brown to red in fall color; this oak has interesting bark and the underside of the leaves are pale green to gray.


22c

Common associates include:

Purple-sheathed graceful sedge; fringed loosestrife; golden Alexanders; calico aster; spinulose wood fern; lady fern; and common blue violet.

Water conservation & erosion control:

Swamp white oak is a suitable tree for the water's edge of a lake or river; this is a slow-growing, long-lived (300+ years) canopy tree. Also a great urban tree as it tolerates poor drainage conditions; a premier shade tree in appropriate soils.


22d

Height: *50 to 60′*

Width: *25-45′*

Flower color: *greenish-yellow flower clusters along several catkins*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

23. Sweet-fern
Comptonia peregrina

Wax-myrtle family
Myricaceae

Shrub

23a

Biology notes:

Prefers ~pH5.6. Grows in dry, sterile, often acidic, sandy soil or in thin, low-fertility soils over bedrock. Found on sandy plains and hills, usually in open savanna of oak, aspen, and/or jack pine; especially conspicuous and abundant on sandy, cutover pinelands and on the edges of other dry forests. It has long, narrow, olive-green leaves, the edges of which have rolled back edges and rounded fern-like division. Flowers are yellow-green to brown catkins that appear before the leaves unfold. A small nut is enclosed in a bur-like husk. Sweet-fern is an excellent choice for more barren or acidic areas of a property; it will thrive in these soils to form a dense thicket. Thickets are low-growing and stay within reasonable size limits; good "no maintenance" ground cover for native plantings. The roots reportedly form nodules that harbor nitrogen-fixing microorganisms, a distinct advantage in the sandy, nitrogen-poor soils it typically inhabits. Sweet-fern is favored by periodic burning.

Beneficial insects & other wildlife support:

Sweet-fern supports 64 different species of *moths* and *butterflies* in the USA; *spring azure* larval host. Various *insects* feed on the foliage and other parts of sweet fern including *leaf beetles, leafhoppers,* and the caterpillars of several *moths*. Some vertebrate animals also use sweet-fern as a source of food. The *ruffed grouse* and *greater prairie chicken* feed on the buds, catkins, and foliage, while *white-tailed deer* and the *cottontail rabbit* browse on the twigs and foliage. Because of its tendency to form colonies, sweet fern also provides good cover for many species of *wildlife*.

23b

Seasonal interest:

The scented foliage smells piney; its evergreen leaves are fernlike in appearance.


23c

Common associates include:

June grass; wild quinine; cinnamon fern; fringed loosestrife; sand-bracted sedge; New Jersey tea; Canada tick trefoil; prairie cord grass; and sky-blue aster.

Water conservation & erosion control:

Sweet fern has multiple upright stems and loose, spreading branches that intercept and braid runoff water; it is a good low-growing choice for dry sites. Sweet fern does well along dry and sun-drenched stairways or on sunny and exposed slopes of steeper sites along lakes, rivers, or streams.


23d

Fast facts

Height: *2 to 3′*

Width: *1 to 2′*

Flower color: *greenish catkins toward the tips of twigs*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

24. Tamarack
Larix laricina

Pine family
Pinaceae


24a

Biology notes:

Prefers ~pH6.0. Intolerant of shade and pollution. Grows best in moist, well-drained, acidic soils. In almost all sorts of wet places, open or forested, like coniferous swamps, bogs, shores, and meadow edges; sometimes on drier ground where there is not much competition. Excellent planted in groves in moist soil; it can live for about 150-200 years. The preference is full sun, wet conditions (but not flooded), an acidic peaty soil, and cool climate; however, moist sites with more mineral-rich soil are tolerated as well. When the outer bark breaks away on the trunk and larger branches, patches of reddish inner bark may become visible. Tamarack has handsome tiny cones that hang on the bare tree into winter.

Beneficial insects & other wildlife support:

Tamaracks support 121 different species of *moths* and *butterflies* in the USA. Many insects feed on the needle-like leaves, wood, roots, and other parts of tamarack including *aphids, plant bugs, spittlebugs, horntails, long-horned* and *bark beetles,* and *moths*. Additional animals use tamarack as a source of food and cover. The seeds of it are eaten by the *red crossbill, pine siskin,* and *other birds;* some *birds, like the blue jay, bald eagle,* and *osprey*, use tamarack for nesting material and sites. *Red squirrel, mice, voles,* and *shrews* eat the seeds; *white-tailed deer* feed sparingly on the twigs and young shoots while *porcupine* feed on its inner bark.

24b

Seasonal interest:

In summer, it has finely textured blue-green needles that look almost furry from afar; these needles turn a lovely golden yellow in fall lighting up the autumn landscape.


24c

Common associates include:

Leather-leaf; narrow-leaved woolly sedge; orange jewelweed; winterberry; royal fern; threeway sedge; cutleaf toothwort; spinulose wood fern; wild sarsaparilla; and mountain holly.

Water conservation & erosion control:

Tamarack is a suitable tree for the water's edge of a lake, pond, or stream; it works well in wet conditions like rain gardens and wet swales (but not long-term flooded areas).


24d

Height: *30 to 50′*

Width: *15 to 25′*

Flower color: *male and female flowers are cone like structures called strobili*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

25. Virgin's bower
Clematis virginiana

Buttercup family
Ranunculaceae

Vine


25a

Biology notes:

Prefers ~pH5.4. Virgin's bower is a sprawling or weakly climbing perennial vine that is nicknamed *Prairie Smoke on a Rope* for its similar looking seedhead in the fall to the famous prairie plant, prairie smoke. The preference is partial sun, moist to mesic conditions, and a fertile soil that is loamy or silty. Full sun is also tolerated, although the leaves may turn yellowish green. Found in low woodland areas, margins of mesic hardwood forests and brushy thickets bordering streams, ponds, riverbanks, lakes, and fence rows; borders of swamps and marshes. It has showy, fragrant flowers attractive to many types of pollinators. Good for live screening on a fence line or to cover a utility or pump box. Can handle deep shade as well.

Beneficial insects & other wildlife support:

Virgin's bower supports *butterflies, moths,* and other *pollinators*, especially *bees*, which will cover the white flowers when in bloom. Nectar of the flowers attracts *Halictid bees, wasps*, and various kinds of *flies*. Additional *insects* that feed on virgin's bower and other *Clematis* vines include larvae of *gall midges* and *leaf-mining flies*, caterpillars of *moths* and *butterflies* (like *eastern comma, painted lady, pearl crescent,* & *viceroy*), and assorted *aphids*. The toxic foliage is avoided by *mammalian herbivores*. However, the foliage of virgin's bower can provide significant cover and nesting habitat for many *songbirds*; it is a favorite of *ruby-throated hummingbirds* too.


25b

Seasonal interest:

Virgin's bower produces gorgeous white flowers in July that attract many pollinators; it has yellow fall foliage.

25c

Common associates include:

Purple Joe-Pye weed; cup-plant; Ohio goldenrod; American hazelnut; Riddell's goldenrod; bluejoint grass; bergamot; nannyberry; great anjelica; wild golden glow; and Virginia wild rye.

Water conservation & erosion control:

Good for covering beach edges, steep banks, and rocky slopes as a viney mat and groundlayer; this perennial plant is a woody vine up to 20' long – its stems can twine around fences and adjacent vegetation and they branch occasionally. It grows well along the edge of woodlands and in hedgerows.


25d

Fast facts

Height: *up to 9' tall, climbing-woody vine*

Width: *36 to 48"*

Flower color: *white*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

26. White oak
Quercus alba

Beech / Oak family
Fagaceae


26a

26b

Biology notes:

Prefers ~pH5.6. Found in oak-hickory, beech-maple, and other hardwood stands; on sandy plains with jack pine and other oaks. A familiar tree for many with its rounded lobes and deep sinuses of the leaves. This tree is strong and disease resistant; it tolerates moderate drought and occasional wet soil. Its acorns are one of the best sources of food for wildlife. The preference is full or partial sun, mesic to dry-mesic conditions, and deep loamy soil. However, this oak also adapts to other kinds of soil, including those that contain silt-loam, sandy loam, clay-loam, and gravelly or rocky material. An underutilized landscape tree; is excellent as a specimen tree and also in groves. White oak is known for its beautiful and uniform branching, stout (wider-than-tall) crown, and consistently stunning fall color; this slow-growing tree can live up to 600 years.

Beneficial insects & other wildlife support:

Oaks support 557 different species of *moths* and *butterflies*. Insects that feed on white oak include *gall wasps, wood-boring beetles, leaf beetles, aphids,* many species of *treehoppers* and *leafhoppers, plant bugs,* and *walking sticks*. Acorns of white oak are produced annually and are less bitter than many other oaks; thus, they are an important source of food for many *birds* and *mammals*. *Birds* include *bobwhite, ruffed grouse, greater prairie chicken, wild turkey, mallard and wood ducks, crow, common flicker, common grackle, rose-breasted grosbeak, white-breasted nuthatch, yellow-bellied sapsucker, brown thrasher, tufted titmouse, downy woodpecker,* and *blue jay*; *mammals* include *black bear, opossum, raccoon, squirrels (fox, gray and red), eastern chipmunk, mice (meadow and white-footed), red fox,* and *white-tailed deer. White-tailed deer* also browse on the twigs and foliage of white oak, while the *cottontail rabbit* gnaws on the bark and twigs of saplings and seedlings during the winter. Some *birds* construct nests on the branches of white oak and other oaks, while other birds nest in the cavities of older trees. Tree squirrels, bats, and raccoons also use the cavities of these older trees as dens.

Seasonal interest:

Bright red fall color; this premier oak makes a fine, long-term shade tree choice; young trees hold their leaves into winter.


26c

Common associates include:

Canada tick trefoil; leadplant; nannyberry; bottlebrush grass; woodland sunflower; thimbleweed; and nodding wild onion.

Water conservation & erosion control:

The deep root system of the white oak consists of a taproot and widely spreading lateral roots; this tree is very drought resistant. It is a good choice for dry, sunny slopes; sites that are prone to flooding should be avoided with this oak.


26d

Height: *50 to 100′*

Width: *50 to 125′*

Flower color: *male & female flowers are borne separately on the same branch*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

27. White spruce
Picea glauca

Pine family
Pinaceae

Tree

27a

Biology notes:

Prefers ~pH5.4. Prefers acidic, loamy, moist, sandy, well-drained and clay soils. Found in coniferous swamps, mixed forests, bogs, stream borders, and along lake margins. This tall, slender evergreen is a common northern forest tree with a narrow, conical crown; it provides cover and shelter to many species. It has some drought tolerance and is also accepting of shady situations. While relatively slow growing, it has few if any disease or insect pests of significance and can live to be several centuries old. Trees can live from 300 years up to 1000 years, with the oldest examples living in the Arctic Circle. White spruce can be utilized as a specimen tree, as a hedge or windbreak, or in a mass planting on more expansive sites. It can also be used to create a visual screening on property edges.

Beneficial insects & other wildlife support:

Spruces support 150 different species of *moths* and *butterflies* native to the USA. Besides providing nesting sites and shelter for different *wildlife*, seeds from its cones are also a favorite food for *crossbills*, *evening grosbeaks*, and *red-breasted nuthatches*. The foliage is eaten by *ruffed grouse*, *cottontail rabbits*, and *white-tailed deer*. *Red squirrels* cut open cones to eat the seeds, and they feast upon young, tender spruce shoots. The bark is enjoyed by both *porcupines* and *black bears*. White spruce is a common upland forest tree throughout much of central and northern Wisconsin.

27b

Seasonal interest:

Blue-green foliage is evergreen; the cones are small and often abundant, attracting winter songbirds.


27c

Common associates include:

Red baneberry; fly honeysuckle; wild strawberry; blue bead lily; spreading dogbane; Pensylvania sedge; and sweet cicely.

Water conservation & erosion control:

White spruce is a suitable tree for the water's edge, particularly in loamy, rocky or alluvial soils. It tolerates shade and can easily grow under a canopy of early-successional species like paper birch and aspen.


27d

Fast facts

Height: *40 to 60′*

Width: *10 to 30′*

Flower color: *male & female flowers are cone like structures called strobili*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

28. White snowberry
Symphoricarpos albus

Honeysuckle family
Caprifoliaceae

Shrub


28a

Biology notes:

Prefers ~pH6.5. The preference is full sun to light shade, mesic to dry conditions, and rocky, clay, or loamy soil; it likes to grow in average, medium moisture in well-drained soils. Found in dry open sandy or rocky ground, in savanna of oak, aspen, and pine, as on old dunes, jack pine plains, and rock outcrops; river bluffs and shores [occasionally even in moist forests]; often found in borders of conifer thickets along shores, moist clearings, ravine bottoms, and wetland edges. Best fruit production occurs in full sun. Adapts to a wide range of soils including poor ones like dry, rocky areas along banks or cliffs. A sparsely branching shrub, it gradually forms a thicket from spreading runners; snowberry starts easily from suckers or offshoots of these roots.

Beneficial insects & other wildlife support:

Snowberries support 25 different species of *moths* & *butterflies* native to the USA. Floral visitors include the *ruby-throated hummingbird, bees (honey, bumble, large carpenter, leaf-cutting, mason, green metallic, Andrenid), Vespid wasps*, and *flies* (*Syrphid* & *Tachinid*). Among these floral visitors, *bees* are the most important *pollinators*. Additional *insects* feed on the leaves and other parts of snowberry including *leaf-mining flies, aphids*, and other *moths*. Some *small mammals* use this shrub as a source of food and/or shelter. For example, its white fruits are eaten by the *ruffed grouse* and *sharp-tailed grouse, greater prairie chicken, bobwhite quail, American robin, cedar waxwing, hermit thrush, Swainson's thrush*, and *evening* & *pine grosbeaks*. Fruits are eaten by the *black bear, while white-tailed deer,* and *elk* browse occasionally on the twigs and leaves. Animals that eat the fruit can spread the seeds of this shrub to new areas.

28b

Seasonal interest:

It has white berries remain attractive from fall into winter; grows as wide as it is tall and makes a nice hedge.


28c

Common associates include:

Elmleaf goldenrod; chokecherry; Virginia creeper; false Solomon's seal; bottlebrush grass; and Canada tick trefoil.

Water conservation & erosion control:

It has multiple erect or ascending stems; the root system is branching and woody. This shrub reproduces asexually when its lower stems take root after they contact moist ground (aka layering); forms large, low-growing thickets usually no higher than 48 inches tall. It has moderate tolerance to drought and soil compaction.


28d

Height: *3 to 4′*

Width: *3 to 6′*

Flower color: *pink to white*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

Fast facts

29. Wild black cherry
Prunus serotina

Rose family
Rosaceae

Tree


29a

Biology notes:

Prefers ~pH5.5. Prefers moist but well-drained upland soils. A common tree of fencerows and borders of fields and forests, almost anywhere that birds have deposited its seeds, from rocky ground or dry open jack pine or aspen savanna, to deciduous forests (oak, beech-maple, or others), a fine tree attaining considerable size in rich hardwood stands. Fruit used for juice, wine and jelly; it has an attractive purple-black peeling bark. Tree is covered with clusters of white flowers in spring; valuable timber tree. Wild black cherry is fast-growing and adaptable; it prefers full sun to light shade, moist to slightly dry conditions, and fertile soil containing loam, clay-loam, or some rocky material. Too much shade from larger canopy trees will stunt its growth or even kill it.

Beneficial insects & other wildlife support:

Black cherries & other cherries support 456 different species of *moths* & *butterflies* in the USA. The nectar & pollen of the flowers attract assorted *bees* (*honey, bumble, Halictid, & Andrenid*), *flies* (*Syrphid* & *blow*), & ants. There are many *insects* that use wild black cherry as a source of food, particularly the leaves. This includes the caterpillars of many *butterflies* & *moths* and several *leaf beetles*. The fruit of wild black cherry is an important source of food to many *upland gamebirds* (*ruffed* & *sharp-tailed grouse, wild turkey*), & *songbirds* (*eastern bluebird, catbird, common flicker, crested flycatcher, common grackle, evening* & *rose-breasted grosbeaks, bluejays, kingbirds, American robin, yellow-bellied sapsucker, cedar waxwing,* & *woodpeckers*); it is also eaten by *black bear, gray* & *red fox, cottontail rabbits* and *snowshoe hares, eastern chipmunk, tree squirrels* (*red, gray,* and *fox*), *opossum, raccoon,* & *white-footed mouse* – these *animals* spread the seeds to new areas. *White-tailed deer* browse on the leaves and twigs. In general, the value of wild black cherry to *wildlife* is very high.


29b

Seasonal interest:

The black berries of wild cherry are edible in August and September and make a nice juice; it has golden yellow to apricot orange and scarlet red fall color;. Consider wild cherry for planting in clumps & masses for premier wildlife friendly natural gardens.


29c

Common associates include:

Shagbark hickory; blue cohosh; Jack-in-the-pulpit; pointed-leaf tick trefoil; bearded shorthusk grass; and northern lady fern.

Water conservation & erosion control:

The root system consists of a deep, coarse taproot; it is thicket forming as this tree spreads by reseeding itself. Black cherry also tolerates salt and is a good selection for dry to moist sites to help braid out, slow down, and help infiltrate stormwater.


29d

Fast facts

Height: *50 to 60′*

Width: *25 to 35′*

Flower color: *white*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

30. Big bluestem
Andropogon gerardii

Grass family
Poaceae


30a


30b

Biology notes:

Found in mesic prairies, dry open woods (often associated with jack pine or scrub oak), calcareous hill prairies, sandy plains and old fields, and along railroad right-of-ways; northward in sandy areas and on roadsides and railroads. Tallest and most dominant prairie, savanna, and woodland grass; prefers mesic sites but also frequent in dry to wet ones as well. The preference is full sun, moist to slightly dry conditions, and a fertile loam or clay-loam soil. Other kinds of soil are tolerated, including those containing sand and gravel. This is an easy grass to grow, although it can be a little aggressive because of its large size. Now found statewide because of plantings for erosion control and prairie restorations, and appearing to spread northward along highways. Big bluestem is used in native wildflower meadow plantings and prairie restorations; and also effective as a rear border or accent plant in native garden beds as a taller backdrop to the overall planting. Big bluestem is a warm season grass with most vegetative growth occurring during the summer when the weather is warm.

Beneficial insects & other wildlife support:

Used by the caterpillars of *skippers*, *moths* and *butterflies* that feed on the foliage, as do many *grasshoppers*, which are an important source of food for assorted *insect-eating birds*. Other insects that feed on big bluestem include *katydids, leaf-mining beetles, spittlebugs,* and *leafhoppers*. Big bluestem provides important cover and shelter for *grassland birds* like *field sparrows, finches,* and *juncos* and many *small mammals* for nesting and escape cover in summer and winter; one of the best grasses for nesting and roosting habitat you can plant. Big bluestem resists lodging under snow cover almost as well as switchgrass, thereby contributing to good spring nesting habitat. The seeds are eaten sparingly by some seed-loving *songbirds*, including the *field sparrow, tree sparrow,* and *chipping sparrow*. The foliage is readily eaten by *elk, moose,* and *white-tailed deer*; the *meadow* and *prairie voles* eat the leaves as well.

Seasonal interest:

The groundlayer leaves of big bluestem are often highlighted with steel blue and sometimes wine purple colors; the fall color is variable but usually warm tones: from gold and orange-russet to reddish. The fall color of this grass lasts into the winter season, providing a nice landscaping touch.


30c

Common associates include:

Mountain mint; prairie dock; sawtooth sunflower; smooth phlox; yellow coneflower; white penstemon; and black-eyed Susan.

Water conservation & erosion control:

Good for growing in drier to moist areas to stabilize soil and to slow down, spread out, and intercept stormwater; forms neat clumps. This grass is great for planting along access stairs on dryer slopes; the root system is fibrous and short-rhizomatous. Big bluestem is a bunchgrass as tight tufts of culms [new stems] are produced from its rhizomes/roots; these rhizomes are typically 1″ to 2″ long and are just below the soil surface, while the main roots can extend downwards to 10 feet or more.


30d

Height: *5 to 8′*

Width: *2 to 3′*

Flower color: *purplish to yellowish spikelets (flower clusters)*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

31. Bluejoint grass
Calamagrostis canadensis

Grass family
Poaceae

31a

Biology notes:

Blue-joint grass adapts to different soils, including loam, clay, silt, sand, or some combination of these soil types. It also has a broad pH tolerance ~pH 3.5 to 8. Standing water is tolerated by this grass if it does not persist throughout the growing season. Blue-joint grass can spread quickly by its shallow rhizomes in moist to wet areas; thus, it helps to stabilize shorelands. Native habitats include wetlands like marshes, swales, bogs, wet prairies, sedge meadows, open woods, streambanks, lakeshores, and moist to wet thickets. Each clump is topped by a large, slightly nodding, branched flower or spikelet. It has purplish foliage too and is fine-leaved. Think about planting it following the eradication and post-spraying of invasive *Phragmites* or reed canary grass sites. An abundant native wetland grass statewide, it is co-dominant with sedges (especially tussock sedge *Carex stricta*) in sedge meadow communities.

Beneficial insects & other wildlife support:

Insects that feed on blue-joint grass include *plant bugs, aphids*, and *leafhoppers*. The roots and lower stems of this grass are eaten by *muskrats*. This grass often forms colonies and it is fairly tall—thus, it provides good cover for *small mammals, turtles, snakes, waterfowl* and *wetland birds*, and other *wildlife* living at the water's edge. It provides forage for *elk, black bear*, and *white-tailed deer* and is excellent nesting habitat for several *birds*. Blue-joint grass provides structure for *dragonflies* and *amphibians* to utilize as well. *Songbirds* and *waterfowl* eat the seeds; *Canada geese, moose, white-tailed deer, small mammals* graze on the entire plant, especially the young shoots.


31b

Seasonal interest:

Blue-joint grass stands up well in winter, making it a good source of food and cover for wildlife, especially songbirds; the flower is purplish when in bloom, becoming tan later in the season.

31c

Common associates include:

Panicled aster; swamp milkweed; golden Alexanders; tall meadow rue; water horehound; great blue lobelia; tussock sedge; and bog goldenrod.

Water conservation & erosion control:

A great choice for growing in moist to wet areas to stabilize soil and to slow down, spread out, and intercept stormwater, including standing water in wetlands; it is also effective as a rear border or accent plant in native garden beds like rain gardens as a taller backdrop to your overall planting; it has creeping rhizomes.


31d

Height: *36 to 72″*

Width: *24 to 36″*

Flower color: *tan spikelets (flower clusters)*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

32. Bottlebrush grass

Elymus hystrix *[aka Hystrix patula]*

Grass family
Poaceae


32a

Biology notes:

Fairly common in Wisconsin, especially southward, in rich deciduous or mixed woods, rocky upland woodlands, woodland openings, borders, and paths, meadows, savannas, rocky glades, and partially shaded riverbanks. Bottlebrush grass is usually found in average to high quality woodlands and adjacent areas. This species is often used in savanna and woodland restorations; it is also cultivated as an ornamental grass in gardens. It prefers partial sunlight to light shade, moist to slightly dry conditions, and loamy soil that contains decaying organic matter. This grass is adaptable to cultivation, providing texture and interest in shaded areas. It is one of the few true grasses that prefer shade in Wisconsin. Bottlebrush grass is somewhat lax-stemmed and can be floppy; planting stiff stemmed wildflowers around it can help prop it up for cleaner aesthetics. Bottlebrush grass is a cool season grass, actively growing during the spring and fall when soil temperatures are cool.

Beneficial insects & other wildlife support:

The caterpillars of *butterflies* and *moths* feed on the foliage; other *insects* that feed on this grass include *leaf beetles, leaf-mining flies, aphids,* and *leafhoppers*. Among *vertebrate animals*, the seeds of wild ryes are eaten by the *white-footed mouse*. Woodland *small mammals, insects, birds, amphibians,* and other critters also utilize bottle brush grass for cover and nesting material.


32b

Seasonal interest:

Bottlebrush grass is a striking ornamental suitable for shady areas and wooded sites; its spikelet is shaped like its namesake [a bottlebrush].

Common associates include:

Woodland phlox; American basswood; woodland sunflower; tall bellflower; rosy sedge; Canada anemone; common elderberry; sharp-lobed hepatica; and yellow jewelweed.

32c

Water conservation & erosion control:

A great choice for growing in shady, moist to wet areas to stabilize soil and to slow down, spread out, and intercept stormwater; the root system is fibrous. This grass spreads by reseeding itself; it often forms small colonies of several plants.


32d

Height: *24 to 60″*

Width: *12 to 24″*

Flower color: *green spikelets (flower clusters)*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

33. Canada wild rye
Elymus canadensis

Grass family
Poaceae

Grass


33a

Biology notes:

Abundant in a variety of dry to wet open habitats; often used in erosion control. Found in dry to wet-mesic prairies, sandy woods, oak openings and thickets, particularly common on lakeshores, sand dunes, and riverbanks, and sometimes weedy along roadsides, railroads, and abandoned fields. Usually in sandy or gravelly sunny ground; short-lived. The preference is full to partial sun and dry to moist conditions; this grass will adapt to practically any kind of soil, including those containing loam, clay, gravel, or sand. This robust grass readily reseeds itself. Canada wild rye is a cool-season grass; it actively grows during the spring and fall when soil temperatures are cool. Provides great cover in the first 2-3 years of a planting as other species mature and grow into the space. This attractive grass can be used on erosion-prone sites such as steep slopes as a stabilizer while more slower-growing natives take hold; most wild rye grasses are short-lived perennials.

Beneficial insects & other wildlife support:

Various *insects* feed on wild rye including *leafhoppers, aphids, stink bugs,* and *beetles*. Caterpillars of several *moths* mine the leaves of these grasses. As it grows near wetlands, the seed heads are sometimes eaten by the *mallard, lesser scaup,* and other *ducks*, while *Canada geese* feed on the foliage. The *white-footed mouse* and *prairie deer mouse* eat the seed. Canada wild rye provides cover and shelter for *grassland birds* and *small mammals*.


33b

Seasonal interest:

Attractive blooms with arching habit and wheat/rye like spikes; blooms in summer and remains attractive well into winter. Bottlebrush grass is a tall, shade-tolerant grass and does very well in a home garden.


33c

Common associates include:

Ohio spiderwort; smooth aster; sand cherry; dwarf blazing star; compass plant; leadplant; little bluestem; purple prairie clover; and rosinweed.

Water conservation & erosion control:

Good cover crop for restorations; excellent species for use in erosion control on dry to wet slopes. It grows rapidly, binding exposed soil; tolerates black walnut, salt, and air pollution. A great choice for growing in dry to wet areas to stabilize soil and to slow down, spread out, and intercept stormwater; works well in rain gardens.

33d

Fast facts

Height: *36 to 60″*

Width: *12 to 24″*

Flower color: *tan spikelets (flower clusters)*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
				■	■		

34. Common fox sedge
Carex stipata

Sedge family
Cyperaceae


34a

Biology notes:

Found in a variety of moist, often shaded habitats such as lake, river, and pond margins, sedge meadows, and wet roadsides; tolerant of disturbance. It prefers light shade to full sun and moist to slightly wet conditions. This sedge adapts to a variety of soil types, including a heavy clay-loam. In shaded situations, it tolerates drier conditions. Fast grower, good for rain gardens in the shade. One of the commonest sedges throughout the state, in moist, shaded ground everywhere, except only very rarely in sphagnum bogs. Common fox sedge actively grows during the spring and fall when soil temperatures are cool. This species will tolerate some seasonal and irregular water fluctuations & is somewhat tolerant to flood duration at a depth of ~6".

Beneficial insects & other wildlife support:

Many *insects* are adapted to feed on sedges at the water's edge; each utilize common fox sedge including *leaf beetles, bill-, seed-* , and *shield-bugs, aphids, leafhoppers, spittlebugs, grasshoppers, flies, moths, skippers,* and *butterflies*. Assorted *ducks, rails (sora and yellow), upland gamebirds* like *grouse* (especially *ruffed groused* chicks), *marsh birds (rails), shorebirds,* seed-eating *songbirds (swamp, tree, song,* and *Lincoln sparrows, snow buntings, cardinals, larkspurs, woodcocks, swamp sparrows,* and *redpolls),* and many *ducks (mallard)* and other *waterfowl* eat the seeds. *Snapping* and *mud turtles* feed on the seeds. *Muskrats* eat the culms (stems), roots, or sprouts of this sedge; *white-tailed deer, beaver, moose,* and *black bear* feed on the foliage or seeds. Stands of this sedge in shallow water can provide valuable spawning and breeding habitat for *fish, amphibians, aquatic insects, ducks,* and other *wildlife*.


34b

Seasonal interest:

Attractive seed heads; nice clump-forming habit to this sedge. Beautiful green foliage all growing season long.

34c

Common associates include:

Sensitive fern; Joe-Pye weed; purple-stemmed angelica; American water plantain; boneset; brown fox sedge; porcupine sedge; orange jewelweed; and marsh marigold.

Water conservation & erosion control:

A great choice for growing in moist to wet areas to stabilize soil and to slow down, spread out, and intercept stormwater; well suited for restoration at the water's edge of ponds, wetlands, streams, and lakes. Its root system is fibrous and short-rhizomatous; can be used in upland zone as well.


34d

Height: *36 to 72"*

Width: *12 to 24"*

Flower color: *golden brown*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

35. Common oak sedge
Carex pensylvanica

Sedge family
Cyperaceae

35a


35b

Biology notes:

Particularly common on dry to dry-mesic woods, dune ridges and prairies, usually in sandy soils on open ground or under jack pine, oaks, or aspen; also mesic and bottomland forests throughout the state. It is sought after for its dry-soil tolerance and ability to grow in full sun or full shade, even under pine and hemlock canopies. To get a consistent ground cover of this hardy sedge, divide each plant once annually; each year, it will spread 3-8" depending on the soil moisture of the site. Pennsylvania sedge prefers partial or dappled sunlight and mesic to dry conditions with good drainage; a sandy loam or loose loam with abundant organic matter is preferred. This sedge also adapts to thin rocky soil if there is a layer of loam and decaying organic matter on top. Pennsylvania sedge actively grows during the spring and fall when soil temperatures are cool.

Beneficial insects & other wildlife support:

Insects that are known to feed on Pennsylvania sedge include *leafhoppers, aphids,* and *grasshoppers* (*red-winged, pasture,* and *Kiowa*). Other insects that feed on sedges include larvae of the *grass-miner moths, broad-winged grasshoppers,* and other *aphids*. Various *birds* eat the seeds of sedges in habitats that are favored by Pennsylvania sedge; these species include the *greater prairie chicken, wild turkey,* immature *ruffed grouse, eastern towhee,* and various *sparrows*. Sedges in such habitats are a source of food to *voles* (*prairie*), *mice, squirrels,* and other *small mammals*.

Seasonal interest:

One of the first sedges to bloom during the spring; good choice for ground cover in dry shade – acts as underplanting for taller shade perennials.

Common associates include:

American hog peanut; northern maidenhair fern; wood anemone; wild geranium; bloodroot; northern bedstraw; leatherwood; and white lettuce.

35c

Water conservation & erosion control:

Suitable ground cover for growing in dry to moist areas to stabilize soil and to slow down, spread out, and intercept stormwater; well suited for restoration on shady sites and for rain gardens including the berm. It can be a good lawn substitute as it forms a turf that never needs mowing; may be best to use plant plugs for covering large areas because this species often does not grow well from seed. The root system produces long stolons than run along the surface of the soil [and underneath fallen leaves and other debris]; loose clonal colonies are often formed from these offsets.


35d

Height: *6 to 12"*

Width: *4 to 6"*

Flower color: *spikelets are dark purplish brown (flower clusters)*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

36. Common rush
Juncus effusus

Rush family
Juncaceae


36a

Biology notes:

Widespread in wet ground of marshes, lakeshores, banks of ditches and streams, bog and river borders, clearings, pastures, moist forests and woods, and thickets. A fine accent near ponds, it is considered a wetland plant but can thrive in mesic soils. Fairly tall and easily grown in moist to wet soils, including standing water to 4-12" deep; this species prefers shallow water at 12" of depth or less with wet to saturated conditions, although it will tolerate somewhat drier settings too. The dense stands that soft rush form have deep, fibrous root systems which provide very good shoreline protection, filter suspended solids, up-take nutrients, and facilitate substrate oxidation; with its low pH and metal tolerances, soft rush can often survive polluted conditions as well – the roots form a matrix for many beneficial bacteria used for wastewater treatment. Common rush actively grows during the spring and fall when soil temperatures are cool.

Beneficial insects & other wildlife support:

Used by larvae of *moths* and *butterflies*, *leafhoppers*, *leaf beetles*, and *sawflies*. *Waterfowl*, *upland gamebirds*, *marsh birds*, and *songbirds* eat the seeds. The roots occasionally provide food for *muskrats*, *deer*, *rodents (gophers)*, *porcupines*, *rabbits* and *moose*. It forms dense colonies so it has the capacity to provide significant cover and nesting habitat for *wetland birds (rails, ducks)* and other kinds of *wildlife* like *amphibians*, *aquatic insects*, *small mammals*, and spawning ground for young *fish* like *rock bass*, *bluegills*, and other *panfish*. Because the tiny seeds can cling to the feathers or muddy feet of *ducks* and other *wetland birds*, these animals help to distribute this rush to new wetland sites.

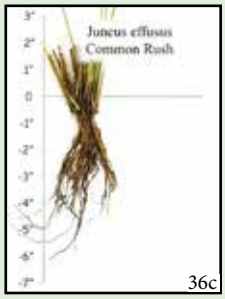
36b

Seasonal interest:

An attractive, evergreen plant that acts as a good contrast plant; common rush is the most widespread rush worldwide and the species that is cultivated most often.

Common associates include:

Common spikerush; swamp candles; bristly sedge; softstem bulrush; broadleaf arrowhead; lake sedge; orange jewelweed; and buttonbush.



36c

Water conservation & erosion control:

A great choice for growing in moist to wet areas to stabilize soil and to slow down, spread out, and intercept stormwater, including standing water in wetlands; grows well even in compacted soils. It tolerates salt; also well-suited for fluctuating water level conditions at the lakeshore edge. A good choice for rain garden berms and access stairs borders in moist to wet soils; the root system consists of short scaly rhizomes and coarse fibrous roots.


36d

Height: *12 to 40"*

Width: *12 to 18"*

Flower color: *yellowish to green*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

37. Dark-green bulrush
Scirpus atrovirens

Sedge family
Cyperaceae

Sedge


37a


37b

Biology notes:

Dark-green bulrush forms clumps from rhizomes and fibrous roots in the wettest of soils. Found in moist meadows, sloughs, prairie swales, openings in floodplain woodlands and upland woodlands, marshes, seeps, sedge meadows, bogs, stream, river, lake edges, roadside ditches, low areas, thickets, and wet depressions. Well-adapted to different soil types, including those containing clay, gravel, sand, or even abundant organic material. The leaves become yellowish green if the soil dries out; easily grown in moist to wet soils including shallow standing water in full sun to part shade. As a cool season bulrush, it actively grows during the spring and fall when soil temperatures are cooler. Bulrushes (*Scirpus*) comprise a diverse group of plants in North America; notwithstanding their common name, bulrushes are members of the sedge family (*Cyperaceae*), rather than the rush family (*Juncaceae*).

Beneficial insects & other wildlife support:

Insects that feed on dark green bulrush include the *leaf beetle, weevils, billbugs, leaf-miners* and assorted *moths, grasshoppers,* and *katydids*. Other *insects* that feed on bulrushes include *semi-aquatic leaf beetles, seed bugs, plant bugs*, and *aphids*. The seeds and seedheads of bulrushes are eaten by numerous species of *ducks, rails* (*sora, Virginia*), and other *wetland birds*; the *Canada goose* and *trumpeter swan* also feed on the stems when young. The importance of bulrushes as a food source varies with the species of bulrush and its abundance. Among *mammalian herbivores*, *muskrats* eat the rootstocks and culms, while the *meadow vole* occasionally eats the seeds. The foliage and tall stems provide *wildlife* cover and nesting materials for many species at the water's edge, from *aquatic insects*, to *waterbirds* (*coots, ducks-black, canvasback, mallard, pintail, redhead, ring-necked, scaup*, and *teal, geese*), to *frogs* and *young fish* like *northern pike* and *bluegills* that utilize it for spawning and nursery habitat.

Seasonal interest:

Fall color is yellow-brown; a good choice for a lakeshore restoration, pond construction or rain garden plantings.


37c

Common associates include:

Woolgrass; Canada bluejoint grass; sneezeweed; orange jewelweed; cinnamon fern; winged loosestrife; crested wood fern; and swamp thistle.

Water conservation & erosion control:

A great choice for growing in moist to wet areas to stabilize soil and to slow down, spread out, and intercept stormwater, including wetlands with standing water up to 30" deep; great for wet, nearshore areas on lakeshores even in shallow water. It spreads by creeping rhizomes from strong, fibrous roots and if left undisturbed in good growing conditions it will form colonies.


37d

Fast facts

Height: *36 to 60"*

Width: *12 to 24"*

Flower color: *brown*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
				■	■		

38. Fowl manna grass
Glyceria striata

Grass family
Poaceae


38a

Biology notes:

Full to partial sun, even shade in moist to wet soils that are often saturated; occurs widely in bogs, seeps, wet woods, thickets, meadows, or swampy areas, shaded ditches, and along or in streams; in sandy, loamy soil. Fowl manna grass is a rapidly establishing species suitable for restoration of marsh and pond edges, lakeshores, stream sides, and other wetland plant communities where an herbaceous understory is desired. A cool season grass, fowl manna grass actively grows during the spring and fall when soil temperatures are cool. An abundant wetland grass statewide but usually not growing in shallow water. The preference is full sun to light shade, mesic to wet conditions, and a fertile loamy soil. This grass requires more moisture in sunny areas than when it is growing in the shade.

Beneficial insects & other wildlife support:

Fowl manna grass supports assorted *insects* like *moths, leaf-miners,* and *aphids*. The foliage is largely ignored by *white-tailed deer* and other browsers. In spite of the common name, fowl manna grass is not an important food source for *ducks*, although *Canada geese* will eat the foliage when this species occurs along bodies of water. Because this grass is fairly tall and occasionally forms colonies, it provides good cover for *wetland birds, frogs, salamanders, turtles, frogs, damselfly* and *dragonfly* larvae, and spawning habitat for *fish*. Leaves are seasonally grazed at a light to heavy rate by *white-tailed deer, muskrat,* and *black bears*. *Elk* can make minor use of it as well.


38b

Seasonal interest:

Fowl manna grass has showy seedheads that droop over attractively along the shore; it favors a wide range of wet habitats from open marshes, wetlands and lakeshores to semi-shaded woodland ponds.

38c

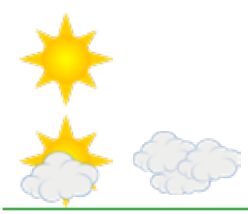
Common associates include:

Porcupine sedge; swamp milkweed; Canada anemone; great blue lobelia; hard-stemmed bulrush; white baneberry; wild black currant; and monkey flower.

Water conservation & erosion control:

A great choice for growing in moist to wet areas to stabilize soil and to slow down, spread out, and intercept stormwater, including standing water up to 12"; suitable for wet depressions or revegetation of ruts on old logging roads in moist to wet conditions. Fowl manna grass spreads by reseeding itself and occasionally forms colonies.


38d



Height: *24 to 36"*

Width: *12 to 24"*

Flower color: *green spikelets (flower clusters) turn brown when ripe*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

39. Fox sedge
Carex vulpinoidea

Sedge family
Cyperaceae

Sedge

Biology notes:

Common in marshes, wet forest edges, alluvial woods, lake and stream edges, wet ditches, meadows, depressions, and clearings; occasionally in wet prairies, fens, and white cedar swamps. One of Wisconsin's most common wetland sedges. Infrequently in bogs, and standing water throughout the state; fox sedge tolerates disturbance. Its narrow grass-like leaf blades grow in 2 feet clumps up to 3 feet in height. The seed heads, which spray out attractively from the center of the clump, resemble a fox's tail but are short-lived. The preference is full to partial sun, wet to moist conditions, and soil containing loam, silt, clay, and/or gravel. Sometimes this robust sedge can spread aggressively, especially in disturbed areas where there is reduced competition from other plants. This species will tolerate some seasonal and irregular water fluctuations and is somewhat tolerant to flood duration at a depth of ~6".

Beneficial insects & other wildlife support:

Many *insects* are adapted to feed on sedges at the water's edge; each utilize brown fox sedge including *beetles* (*leaf, bill ,seed, & shield-bugs*), *aphids, leafhoppers, spittlebugs, grasshoppers, flies, moths, skippers,* and *butterflies*. Assorted *ducks, rails* (*sora and yellow*), *trumpeter swan, Canada geese, upland gamebirds* like *grouse* (especially *ruffed groused chicks*), *marsh birds* (*rails, sedge wrens*), *shorebirds, seed-eating songbirds* (*swamp, tree, song,* and *Lincoln sparrows, snow buntings, cardinals, larkspurs, woodcocks, swamp sparrows,* and *redpolls*), and many *ducks* (*mallard*) and other *waterfowl* eat the seeds. *Snapping* and *mud turtles* feed on the seeds. *Muskrats* eat the culms (stems), roots, or sprouts of this sedge; *white-tailed deer, beaver, moose,* and *black bear* feed on the foliage or seeds. Stands of this sedge in shallow water can provide valuable spawning and breeding habitat for *fish, amphibians, aquatic insects, ducks,* and other *wildlife*.

Seasonal interest:

The seedheads mature in late summer and spray out from the center of the clump, resembling a fox's tail.

Common associates include:

Water horehound; dark-green bulrush; blue vervain; boneset; Joe-Pye weed; fowl manna grass; awl-fruited sedge; blue flag iris; and swamp milkweed.

Water conservation & erosion control:

A great choice for growing in moist to wet areas to stabilize soil and to slow down, spread out, and intercept stormwater; well suited for restorations in wetlands and at the water's edge. Also a plant suitable for use in rain gardens including on top of berms; the root system is rhizomatous and fibrous. This sedge sometimes forms colonies of plants.

Fast facts

Height: *12 to 36"*

Width: *12 to 24"*

Flower color: *brown spikelets (flower clusters)*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

40. Fringed sedge
Carex crinita

Sedge family
Cyperaceae

40a

Biology notes:

Typically found in floodplain forests, black ash swamps, wet borders, and clearings, or wet depressions within deciduous forests, ranging to marshes, sedge meadows, ponds, ditches, wet hollows, and shrub carrs along streams and rivers throughout the northern two-thirds of the state and the lower Wisconsin River valley. Its nodding spikes/flowers resemble a caterpillar. Very nice for wet site restorations and rain gardens including for planting on top of the berm. The preference is light shade to full sun, wet to moist conditions, and soil containing loam, sand, clay, gravel, or peaty material. This species prefers shallow water of 6"of inundation or less to wet and saturated conditions. This lanky sedge leans to one side as the seedheads/spikelets develop. Fringed sedge actively grows during the spring and fall when soil temperatures are cool.

Beneficial insects & other wildlife support:

Many insects are adapted to feed on sedges at the water's edge; each utilize caterpillar sedge including *leaf beetles, bill-, seed-* , and *shield-bugs, aphids, leafhoppers, spittlebugs, grasshoppers, flies, moths, skippers,* and *butterflies*. Assorted *ducks, rails (sora and yellow), grouse* (especially *ruffed groused chicks), marsh birds, shorebirds, seed-eating songbirds (swamp, tree, song,* and *Lincoln sparrows, snow buntings, cardinals, larkspurs,* and *redpolls),* and most *waterfowl* eat the seeds. *Snapping* and *mud turtles* feed on the seeds. *Muskrats* eat the culms [stems], roots, or sprouts of this sedge; *white-tailed deer, beaver, moose,* and *black bear* feed on the foliage or seeds. Stands of this sedge in shallow water can provide valuable spawning and breeding habitat for *fish, amphibians, aquatic insects, ducks,* and other *wildlife*.


40b

Seasonal interest:

Fringed sedge is readily identified by its abundant, drooping spikelets/seedheads; due to its bunching habit, this sedge will look good in all landscape scenarios and serves as a great choice for stabilization in moist to wet areas.

Common associates include:

Palm sedge; riverbank wild rye; mountain mint; blueflag iris; crested wood fern; Joe-Pye weed; and cinnamon fern.

40c

Water conservation & erosion control:

Suitable plants for dry to wet areas to stabilize soil and to slow down, spread out, and intercept stormwater at the water's edge; well suited for restoration in wet sites like rain gardens. The root system is fibrous and rhizomatous; this sedge often forms colonies of plants.


40d

Height: *24 to 48"*

Width: *12 to 24"*

Flower color: *yellowish-green spikelets (flower clusters)*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

41. Indian grass
Sorghastrum nutans

Grass family
Poaceae

41a

Biology notes:

Easily grown in average, well-drained soils, usually in upland areas; the preference is full to partial sun and dry to wet moisture conditions. Various kinds of soils are tolerated, including those that contain loam, clay-loam, sand, clay, and gravel; it does well even in poor, dry, infertile soils and makes a good plant for a wide range of planting situations. Native habitats include dry-mesic prairies, moist shores along streams, rivers and lakes, open woods of pine, oak or red cedar, spreading somewhat onto disturbed sandy fields, roadsides, railroads, especially in northeastern and northwestern parts of the state. This grass stays low most of the year and then gets tall before blooming in early autumn. Indian grass is a warm season grass with most vegetative growth occurring during the summer when the weather is warm.

Beneficial insects & other wildlife support:

Several species of *grasshoppers* (*velvet-striped, little pasture, handsome*) feed on the foliage of Indian grass as do several caterpillars of *skippers, moths* and *butterflies*. These *grasshoppers* are an important source of food to many *insect-eating songbirds* and *upland gamebirds*. Native *bees* gather nesting materials from this plant. Its height and erect profile provides cover for *small mammals* and nesting habitat for many kinds of *birds*, including *ruffed grouse, wild turkeys, greater prairie chickens, northern bobwhites, mourning doves,* and *field sparrows*. *White-tailed deer* browse it; seeds are also consumed by *small mammals*.


41b

Seasonal interest:

Beautiful fall color is deep orange to purple; often used in tallgrass prairie restorations and it looks great as an ornamental; the bright yellow flowers contrast attractively with the blue-gray foliage.

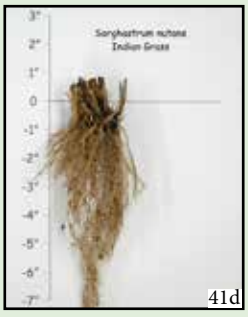

41c

Common associates include:

Thimbleweed; purple prairie clover; Canada tick trefoil; rattlesnake master; round-headed bush clover; prairie phlox; yellow coneflower; and bergamot.

Water conservation & erosion control:

A great choice for growing in dry to wet areas to stabilize soil and to slow down, spread out, and intercept stormwater; good for dry to wet steep banks, slopes, and access stairs borders. The root system is fibrous and rhizomatous and it can penetrate up to 4 ft. into the ground; this grass is suitable in shallow, well-drained rain garden sites as a contrast plant to other wildflowers, sedges, and ferns.


41d

Height: *36 to 60″*

Width: *12 to 24″*

Flower color: *golden brown spikelets (flower clusters)*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

42. June grass
Koeleria cristata

Grass family
Poaceae


42a

Biology notes:

Native habitats include dry or dry-mesic, sand prairies, barrens, oak savannas, sandy jack pine, black oak or Hill's oak woodlands, and occasionally wet-mesic prairies; sandy abandoned fields, sand dunes and other disturbed sandy places. June grass actively grows during the spring and fall when soil temperatures are cool and it likes full sun; prefers dry, sandy, gravelly soils. Flowering in early summer [throughout June and July], its preference for dry, sunny conditions makes it a popular candidate for green roofs. June grass is a cool-season grass, going dormant in late summers, so companion plants should be chosen to mask its late-summer dormancy, including shorter flowers like dwarf blazing star or smooth blue aster. It is often used in prairie restoration mixes and has been used to revegetate mines. Avoid really wet, heavy clay soils and full shade with June grass; rather, use it in sunnier upland areas or along sunny, dry slopes at lakeshore edges. June grass normally occurs in scattered tufts, rather than forming dense colonies.

Beneficial insects & other wildlife support:

Various *insects* feed on it such as caterpillars of *moths* and *butterflies*, *leafhoppers*, and *grasshoppers*, particularly those species that prefer dry habitats with sparse vegetation. June grass is *white-tailed deer* resistant, but among *vertebrate animals*, the foliage is palatable to *hoofed herbivores*, including *elk* and *white-tailed deer*. However, because this grass is short in stature and rarely forms dense stands, it provides only a minor component of the diet of these animals. It provides good cover in dry sites for grassland *birds* and other *wildlife* like *insects*, *amphibians*, and *reptiles*.


42b

Seasonal interest:

June grass has dense, silvery green, spike-like seed heads which start growth very early in spring and turn creamy-tan by mid-summer.

42c

Common associates include:

White sage; dotted horse mint; hairy penstemon; dwarf blazing star; prairie dropseed; western sunflower; little bluestem; blue-eyed grass; and lanceleaf coreopsis.

Water conservation & erosion control:

A great choice for growing in dry to moist areas to stabilize soil and to slow down, spread out, and intercept stormwater; low grower, very suitable for front edging of native plantings or access stairs borders on dry to moist slopes. It tolerates: drought, dry soil, black walnut, and air pollution; the root system is fibrous and rhizomatous.


42d

Height: *24 to 36″*

Width: *12 to 18″*

Flower color: *creamy tan*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

43. Little bluestem
Schizachryium scoparium

Grass family
Poaceae


43a

Biology notes:

Generally a species of drier habitats, as it is very drought-tolerant but it can do well in moist to wet situations too. Widespread throughout Wisconsin and locally common in dry prairies, especially steep south-facing "goat prairies," but also open oak woodlands and savannas, pine barrens, cedar glades, dunes, sandy plains, river edges, streambanks, and lakeshores, and spreading along roadsides, railroads and into old fields. Little bluestem is a must-have in any dry to wet site; the preference is full sun and dry to wet soil conditions. Different kinds of soil are tolerated, including those that contain clay-loam, gravel, or sand; less fertile soil is preferred because of the reduced competition from taller vegetation. As it is a warm season grass, most growth and development occurs during the summer months. A good low-maintenance selection for sun-baked areas.

Beneficial insects & other wildlife support:

Used by the caterpillars of *skippers* (a *skipper* looks like a cross between a *small moth* and a *small butterfly*), various *moths*, and several *butterflies* that feed on the foliage, as do many *grasshoppers*, which are an important source of food for assorted *insect-eating birds*. Other *insects* that feed on little bluestem include *leaf-mining beetles, prairie walkingsticks, thrips, spittlebugs, planthoppers*, and *leafhoppers*. The *field sparrow, tree sparrow, slate-colored junco*, and other *small songbirds* eat the seeds, particularly during the winter. The foliage of little bluestem is quite palatable to *deer, elk, moose,* and other *mammalian grass eaters*. It provides cover for *grassland birds, insects, amphibians* and *reptiles*, and many *small mammals*; one of the best grasses for nesting and roosting habitat.


43b

Seasonal interest:

Blue-green in the summer and, after the first frost, a beautiful orange-copper fall color that turns pinkish all winter; plant forms neat clumps; while the stems of other grasses become matted during the winter, the stems of little bluestem remain conspicuously upright.


43c

Common associates include:

Prairie dock; showy goldenrod; sky-blue aster; prairie blazing star; black-eyed Susan; wild quinine; prairie loosestrife; compass plant; leadplant; and purple prairie clover.

Water conservation & erosion control:

A good choice for growing in dry to wet areas to stabilize soil and to slow down, spread out, and intercept stormwater; great for planting along access stairs on dry to wet slopes or on the berm of rain gardens in sunny to part sun situations; moderate drought tolerance and broad adaptation to diverse sites. It can form mats from short rhizomes on wetter sites although this species is usually thought of as a bunchgrass (clump forming) on dry, upland sites; it has numerous branching, deep roots that can reach a depth of 6 feet.

43d

Height: *24 to 36″*

Width: *12 to 24″*

Flower color: *white spikelets (flower clusters)*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

44. Long-beaked sedge
Carex sprengelii

Sedge family
Cyperaceae

44a

Biology notes:

Found throughout the state in dry to dry-mesic deciduous woodlands and forests, forest openings and edges, mixed conifer-hardwood forests, thickets, lakeshores, limestone river bluffs, and prairies, especially in sandy soils; also in bottomland forests and occasionally oak woodlands. Tolerant of disturbance, not flourishing in dense shade. Common sedge in lower third of the state; it prefers light shade to dappled sunlight, more or less mesic conditions, and loamy soil containing decaying organic material. Growth and development begins relatively early during the spring; by late-summer, this sedge becomes dormant, dying down to the ground. Plant it in a full to partial shade garden with almost any soil moisture.

Beneficial insects & other wildlife support:

Sedges in woodlands are a source of food to various *insects*, including *moths, butterflies, grasshoppers, beetles, weevils, plant bugs, stink bugs*, and miscellaneous *aphids*. The seeds of sedges in woodlands are eaten by such *birds* as the *bobwhite quail, grouse (spruce, sharp-tailed,* and immature *ruffed grouse*), *wild turkey, eastern towhee, cardinal, junco, redpoll, larkspur, snow bunting*, and various *sparrows (song, swamp, tree,* and *Lincoln)*. When these plants are abundant, they provide cover for *small rodents, ground-nesting woodland birds*, and other *wildlife*.

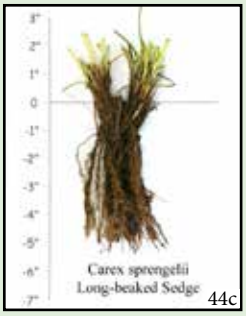

44b

Seasonal interest:

Semi-evergreen leaves; a great sedge with a very ornamental seed head and clump-forming nature.

Common associates include:

Sugar maple; common wood sedge; doll's eyes; mayapple; bottlebrush grass; bellwort; northern bedstraw; wild geranium; and Virginia waterleaf.



44c

Water conservation & erosion control:

Suitable plants for growing in dry to wet areas to stabilize soil and to slow down, spread out, and intercept stormwater; good choice for wooded sites or shady access stair borders on dry to wet slopes; the root system is fibrous-rhizomatous; this sedge reproduces by reseeding itself and by forming clonal offsets from the rhizomes of the root system.


44d

Height: *24 to 36″*

Width: *12 to 24″*

Flower color: *brown*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

45. Northern sweet grass

Hierochloe odorata *[aka Anthoxanthum hirtum]*

Grass family
Poaceae

Grass


45a

Biology notes:

Occasional to fairly common in meadows, moist prairies, sedge meadows, fens and wet prairies and on moist, sandy roadsides, lakeshores, stream and river borders, and on the edges of forests. It is one of the earliest grasses to flower, usually in late April or early May. In Wisconsin found mostly at wetland margins on moist to wet soils. Though sweet grass prefers rich, moist soils, it will grow in almost any soil that receives a minimum of a half day of sun. Sandy, well-drained sites will require mulch and watering during times of low rainfall; add compost to sand or clay soils. The cultural uses of sweet grass include ceremonial incense, perfume, hair wash, bedding, basketry, skin aid, cold remedy, cough medicine, eyewash, febrifuge, respiratory aid, analgesic, insecticide, veterinary aid, decoration and adornment. Northern sweet grass is a cool season grass, actively growing during the spring and fall when soil temperatures are cool.

Beneficial insects & other wildlife support:

Used by *butterflies, moths, grasshoppers,* and other *insects*. Provides cover and food for *grassland birds, mice, squirrels, amphibians* and *reptiles,* and assorted *small mammals*. *Rodents* and *small mammals* (such as *pika*) browse on sweetgrass. Sweetgrass is a cool-season grass; it actively grows during the spring and fall when soil temperatures are cool.

45b

Seasonal interest:

An attractive spring flowering grass; because of the sweet, vanilla-like fragrance that develops once the plant has been harvested and begins to dry the use of sweetgrass as incense and fragrance is fairly common.

Common associates include:

Yellow coneflower; bergamot; Ohio spiderwort; bottle gentian; northern bedstraw; Canada anemone; and shooting star.

45c

Water conservation & erosion control:

A great choice for growing in moist to wet areas to stabilize soil and to slow down, spread out, and intercept stormwater; sweetgrass spreads vigorously by creeping rhizomes. It has potential for erosion control on moderately sloping hillside seeps that are sometimes erosive because the soil stays liquid and the saturated conditions inhibit the growth of many plants. The sod-forming and moisture tolerant characteristics of sweet grass can help stabilize the seep zone with fibrous, interlocking roots.


45d

Fast facts

Height: *12 to 24″*

Width: *12 to 18″ and spreading*

Flower color: *tan spikelets (flower clusters)*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

46. Path rush
Juncus tenuis

Rush family
Juncaceae


46a

Biology notes:

Widespread in dry to moist ground. As the name implies, this rush is often found on paths, both in open woods and in fields, where the soil is constantly packed down and often gravelly. For this reason, you also see it in pastures, roadsides, trails, and dirt parking lots. It is not limited to these areas; it also grows along wetland edges, ditches, lakeshores, old fields, thickets, clearings, gravel pits, and swamps; less often found in peaty areas. Typical growing conditions include full sun to light shade, wet to mesic levels of moisture, and a heavy clay-loam, clay, or gravelly soil. This rush persists even in compacted soil and its tough stems withstand considerable trampling along paths, stairways, driveway edges, or on shoreline storage areas. More tolerant of drought than many other rushes; used in the bottom of constructed bioswales as a groundlayer.

Beneficial insects & other wildlife support:

Used by larvae of *moths* and *butterflies*, *leafhoppers*, *leaf beetles*, and *sawflies*. *Waterfowl*, *upland gamebirds*, *marsh birds*, and *songbirds* eat the seeds. The roots occasionally provide food for *muskrats*, *deer*, *rodents (gophers)*, *porcupines*, *rabbits* and *moose*. It forms dense colonies so it has the capacity to provide significant cover and nesting habitat for *wetland birds (rails, ducks)* and other kinds of *wildlife* like *amphibians*, *aquatic insects*, *small mammals*, and spawning ground for young *fish* like *rock bass*, *bluegills*, and other *panfish*. The tiny seeds become sticky when wet, clinging readily to the feathers of birds, fur of mammals, shoes of humans, and tires of motor vehicles; by this means, they are distributed to new locations. This is one reason why the path rush is often observed along paths and roadways.


46b © 2015 Kaity Chayka

Seasonal interest:

It has deep-green colored stems; this plant has an attractive clumped growth form.


46c

Common associates include:

Fowl manna grass; blue vervain; buttonbush; common arrowhead; arrow arum; common lake sedge; and swamp candles.

Water conservation & erosion control:

A great choice for growing in dry to wet areas to stabilize soil and to slow down, spread out, and intercept stormwater; grows well even in compacted soils; tolerates salt; great as a ground cover to help control erosion and to cover rain garden berms or access stairs borders on dry to wet slopes; the root system is fibrous with densely branched rhizomes.

46d

Height: *12 to 18″*

Width: *6 to 12″ and spreading*

Flower color: *brown*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

47. Prairie brome grass
Bromus kalmii

Grass family
Poaceae

Grass


47a

Biology notes:

Throughout Wisconsin our most common native brome grass. Found in dry to moist open ground or thickets, chiefly associated with bracken grasslands and pine or oak woodlands, especially along borders and clearings, frequently in dry (especially north facing slopes) to wet-mesic, limestone-rich prairies, on banks of streams and lakes, and occasionally along roadsides and in fields. The preference is full to partial sun, moist to slightly dry conditions, and soil with average to above-average pH containing clay-loam, gravelly material, or limy sand. This plant is easy to grow, but it tends to be short-lived; it is a short, attractive grass that can be used on erosion-prone sites such as steep slopes as a stabilizer while more slower-growing natives take hold. As it is a cool season grass, most vegetative growth occurs early in the year (from mid-spring to early summer); hot dry weather can damage or kill this grass so watering is needed in times of drought or extreme heat. Winter hardiness is excellent.

Beneficial insects & other wildlife support:

Various *insects* feed on it such as caterpillars of *moths* and *butterflies*, *grasshoppers*, *beetles*, *plant* and *stink bugs*, *aphids*, and *flies*. The relatively large seeds of brome grasses are eaten by various *upland gamebirds*, *sparrows*, *small rodents* (*ground squirrels*, *mice*), and *small mammals*, while the foliage is grazed by *cottontail rabbits*, *white-tailed deer*, and *elk*. It provides good *wildlife* cover and habitat during all seasons.


47b

Seasonal interest:

It has nice fall color; the seeds are an attractive blue-gray turning to tan when ripe; the weight of the many seeds on each stem causes them to droop gracefully downward.


47c

Common associates include:

Yarrow; flat-topped aster; pearly everlasting; pussytoes; wild strawberry; gray goldenrod; lowbush blueberry; sky-blue aster; wood betony; and dwarf red blackberry.

Water conservation & erosion control:

Suitable for growing in dry to wet areas to stabilize soil and to slow down, spread out, and intercept stormwater; good for access stairs borders on dry to wet slopes; this short, attractive grass can be used on erosion-prone sites such as steep slopes and banks as a stabilizer while allowing for more slower-growing natives take hold. The root system consists of short rhizomes and fibrous roots.


47d

Fast facts

Height: *12 to 36″*

Width: *12 to 24″*

Flower color: *tan spikelets*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

48. Prairie cord grass
Spartina pectinata

Grass family
Poaceae


48a

Biology notes:

The preference is full to partial sun, wet to mesic conditions, and a fertile, loamy soil; it also adapts to soil that is rocky if adequate moisture is available or sandy soil, usually near the water table. Common in southern Wisconsin in wet prairies, sedge meadows, and fens; elsewhere in marshes along the west shore of Green Bay, wet ditches, and sandy shores of inland lakes; sometimes in dry sand. A great choice to replace treated areas of reed canary grass or *Phragmites* near the water's edge; often used to restore wetlands where prolonged flooding does not occur. Actively grows during the summer when soil temperatures are warm. It tolerates alkaline conditions and high water tables but is not tolerant of prolonged flooding; seedlings are not shade tolerant. Prairie cordgrass has a stiff stem and vigorous rhizomes that enable it to provide good shoreline cover and contribute to wave energy dissipation. It has proven useful at preventing erosion on earth fill dams, spillways and drainage channels as an effective soil binder.

Beneficial insects & other wildlife support:

Used by *butterflies*, *moths*, *billbugs*, *leafhoppers*, *grasshoppers*, and *aphids*. The rootstocks and seedheads are eaten by *Canada geese* and occasionally by *ducks*, *mallards*, and other *waterfowl*. *Muskrats* feed on the rootstocks and foliage. Because prairie cordgrass forms dense colonies of tall vegetation, it is an important source of protective cover and nesting habitat for many *wetland birds* and other kinds of *wildlife*.


48b

Seasonal interest:

Unique seedheads in fall; yellow to tan fall color last through winter.


48c

Common associates include:

Turtlehead; swamp milkweed; Joe-Pye weed; buttonbush; dense blazing star; tussock sedge; foxglove beardtongue; porcupine sedge; and stiff goldenrod.

Water conservation & erosion control:

Good choice for growing in wet sites like ponds, streams, wetlands, lakes, and river edges to intercept stormwater and stabilize soil; can aggressively spread by rhizomes from the mother plant. Suitable selection for lakeshore edges and wet depression areas and wetlands after reed canary grass or common reed grass treatments.


48d

Height: *48 to 96"*

Width: *24 to 36" and spreading*

Flower color: *tan spikelets*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

49. Prairie dropseed
Sporobolus heterolepis

Grass family
Poaceae

Grass


49a

Biology notes:

In Wisconsin, mostly southwest of the Tension Zone, a transition area in the state between southern and northern plant communities. Can be an indicator of unplowed and relict dry and rocky prairies, often toward the bottom of steep hill prairies and on river terraces where the conditions are more mesic. Common in dry-mesic and mesic prairies. Clump former with open, fine sprays of flowers. Popular as a garden perennial; grows in bunches with wiry leaves in a neat and tidy manner. The flowers are fragrant, with some thinking they smell like buttered popcorn, others like melted crayons or cilantro. It excels in hot, dry conditions where it can really soak up the sun.

Beneficial insects & other wildlife support:

Used by *butterflies, moths, grasshoppers,* and obligate host of two uncommon *leafhoppers*. Cover, shelter, and food for *birds, mice, squirrels*, and other *small mammals*. Seeds are eaten by *field, Savannah,* and *tree sparrows* and other *songbirds* including *slate-colored juncos*. *Voles* and other *small rodents* dig burrows within the dense tufts of leaves and root mass of this prairie grass.


49b

Seasonal interest:

Good accent plant for foundation plantings or walkway and driveway borders; salt tolerant; nice golden hue all throughout the fall and winter. Prairie dropseed has an attractive clumping growth habit.

Common associates include:

Wild quinine; rosinweed; prairie dock; rattlesnake master; sawtooth sunflower; little bluestem; stiff goldenrod; and sky blue aster.


49c

Water conservation & erosion control:

Good ground cover for intercepting stormwater; suitable for hot, dry slopes to moist areas like rain gardens or access stairs borders. It forms durable root systems.


49d

Fast facts

Height: *18 to 36″*

Width: *12 to 24″*

Flower color: *tan spikelets*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

50. Purple love grass
Eragrostis spectabilis

Grass family
Poaceae


50a

Biology notes:

Locally common in western, central and southern Wisconsin in dry, open, sandy or gravelly ground, in sand barrens, dry sandy prairies, oak openings and dry sandy shores, conspicuous (even in northern Wisconsin) as a weed on roadsides, railroads and old sandy fields, spreading into waste places. Prefers disturbed areas for growing conditions in full sun and dry barren soil containing sand or gravel. Purple love grass is a warm season grass most vegetative growth occurs during the summer when the weather is warm. Purple love grass can also grow under black walnut trees where other plants fail; this low-growing grass is resistant to drought as well. The seed heads [or florets] bloom mid-summer in shades of light to bright purple, giving an overall purple haze to the landscape; tough ornamental grass.

Beneficial insects & other wildlife support:

Various *insects* feed on purple love grass including *leafhoppers* and the caterpillars of *moths* and *butterflies*. It provides cover and food for *grassland birds, voles, mice,* and *13-striped ground squirrels*. Purple love grass provides cover, nesting material, and shelter on drier lake, stream and river edges for *birds, amphibians, insects, small mammals,* and other critters.


50b

Seasonal interest:

A delicate grass that forms beautiful clouds of purple spikelets in later summer; as the seeds mature, the inflorescence usually detaches from the plant and blows along the ground like a tumbleweed distributing seed as it goes.

Common associates include:

Round-headed bush clover; side oats grama grass; purple prairie clover; prairie phlox; western sunflower; and rough blazing star.

50c

Water conservation & erosion control:

A great choice for growing in dry areas to stabilize soil and to slow down, spread out, and intercept stormwater; good for growing on dry slopes and berms of drier rain garden sites. A decent border plant for access stairs on dry slopes as well; the root system is fibrous and rhizomatous, forming colonies from the parent plant.


50d

Height: *12 to 24″*

Width: *6 to 12″*

Flower color: *purple spikelets*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

51. Rattlesnake grass
Glyceria canadensis

Grass family
Poaceae


51a

Biology notes:

An abundant wetland grass of central and northern Wisconsin, rare or absent in the far south. Characteristic of sedge meadows, bogs, swamps, wet woods, and fens, it may occur in shallow water but does not produce floating leaves. Also wet borders of ponds, lakes, rivers, streams, ditches, marshes, and other wet places. The preference is full sun to light shade, wet to mesic conditions, and a fertile loamy soil; this grass requires more moisture in sunny areas than when it is growing in the shade. A cool season grass, most vegetative growth of rattlesnake manna grass occurs during the spring and early summer.

Beneficial insects & other wildlife support:

Rattlesnake manna grass supports assorted *insects* like *moths*, *leaf-miners*, and *aphids*. The foliage is largely ignored by *white-tailed deer* and other browsers. It is not an important food source for *ducks*, although *Canada geese* will eat the foliage when this species occurs along bodies of water. Because this grass is fairly tall and occasionally forms colonies, it provides good cover for *wetland birds*, *turtles*, *frogs*, *damselfly* and *dragonfly* larvae, and spawning habitat for *fish*.

51b

Seasonal interest:

Very attractive and ornamental; with stiff, wiry stems and drooping branches. The flower clusters of this plant resemble a rattlesnake tail.


51c

Common associates include:

Leather-leaf; narrow-leaved woolly sedge; tamarack; purple Joe-Pye weed; common rush; rice cut grass; softstem bulrush; common arrowhead; and southern blue flag iris.

Water conservation & erosion control:

A great choice for growing in wet areas to stabilize soil and to slow down, spread out, and intercept stormwater, including standing water in wetlands 6-12" deep; it is also effective as a rear border or accent plant in native garden beds like rain gardens as a taller backdrop to your overall planting. It has creeping rhizomes along wet edge sites like lakeshores, rivers, streams, wetlands and ponds.


51d

Height: *24 to 36"*

Width: *6 to 12"*

Flower color: *tan spikelets*

Flower period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

52. Sand bracted sedge
Carex muehlenbergii

Sedge family
Cyperaceae

52a

Biology notes:

Found in sand barrens, upland sand prairies, sandy dunes, banks, and borders of forests, rocky upland woodlands of oak and aspen, and other dry, frequently disturbed sites such as along railroads tracks and in dry sandy fields. Located primarily in the southern half of the state; the preference is full or partial sun, mesic to dry conditions, and open areas in sandy soils that typically have reduced competition from other plants. Sand bracted sedge actively grows during the spring and fall when soil temperatures are cool.

Beneficial insects & other wildlife support:

Various *insects* feed on upland sedges including *aphids*, *billbugs*, caterpillars of *moths* and *butterflies* and many *grasshoppers*. Among *vertebrate animals*, *upland gamebirds* and seed-loving *songbirds* feed on the seeds of upland sedges; species include the *greater prairie chicken*, *wild turkey*, *horned lark*, *snow bunting*, and others. *Prairie voles* feed on both the foliage and seeds. Upland sedges provide important cover and shelter for many species of *birds*, *small mammals*, *amphibians* and *reptiles*, and other *wildlife*.

52b

Seasonal interest:

Attractive seed heads; it has an attractive clump-forming growth habit. Well-adapted to dry soil conditions.

Common associates include:

Lanceleaf coreopsis; wild lupine; June grass; white sage; leadplant; Ohio spiderwort; showy goldenrod; and starry false Solomon's seal.


52c

Water conservation & erosion control:

Suitable plants for growing in drier areas to stabilize soil and to slow down, spread out, and intercept stormwater; well suited for restoration on drier slopes and lakeshore edges; the root system is short-rhizomatous and fibrous.


52d

Height: *18 to 24″*

Width: *16 to 24″*

Flower color: *brown spikelets*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

53. Side oats grama grass
Bouteloua curtipendula

Grass family
Poaceae


53a

Biology notes:

Side oats grama grass is adapted to a broad range of sandy to clayey textured soils; it is least tolerant of loose sands and dense clays. The best stands of side-oats are found on medium to fine texture upland soils. It is quite drought-resistant and adapts well to gentle or moderate slopes. The preference is full sun and dry conditions on sandy, loamy soils. Native habitats include dry to mesic prairies, savannas, dry woodland edges, oak openings, cedar glades, and rocky bluffs. Side-oats grama grass is a rarity among native grasses in that it sports tiny attractive flowers during its summer bloom time. When the seed heads dry, they have a distinctly oat-like appearance; side-oats is a warm-season grass that grows actively during the summer months when soil temperatures are warm. Good for open, dry sites; often found growing with little bluestem, but it doesn't compete particularly well with taller grasses.

Beneficial insects & other wildlife support:

Several *leafhoppers* are specialist feeders of side oats grama grass. Many *grasshoppers* feed on this prairie grass, as do the *stinkbugs*. Other *animals* that benefit from this grass include *wild turkey, upland gamebirds, songbirds, snowshoe hare, cottontail rabbit*, and *prairie pocket mice*. Larger *mammals* including *bison, white-tailed deer*, and *elk* eat the foliage. The seeds of side oats grama grass can cling to the fur of *bison, elk, deer*, and other *mammals*; thus, these critters may spread the seeds into new areas.


52b

Seasonal interest:

Fall color is pale yellow to tan; purplish, oat-like spikelets uniformly line one side of the stem, bleaching to a tan color in the fall.


53c

Common associates include:

Bergamot; hoary vervain; prairie cinquefoil; pasque flower; dwarf blazing star; prairie smoke; evening primrose; showy goldenrod; and prairie coreopsis.

Water conservation & erosion control:

A good choice for growing in drier to moist areas to stabilize soil and to slow down, spread out, and intercept stormwater on gentle to moderate slopes; it is salt, black walnut, and air pollution tolerant. This plant is a good low-growing option for access stairs borders on dry, open, sunny slopes; the root system is fibrous and spreads by tillers and rhizomes. Side oats grama grass often forms tight bunches of culms (stems) from its rhizomes, although it also occurs as scattered plants; in moist areas where there is little competition, it may form a dense sod; deep rooted, fibrous, may have rhizomes.

53d

Height: *12 to 36″*

Width: *12 to 24″*

Flower color: *tan spikelets*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

54. Silky wild rye
Elymus villosus

Grass family
Poaceae


54a

Biology notes:

Silky wild rye is a fairly common in southern Wisconsin in dry to wet forests and savannas; also on dry rock outcrops. Found in forests, often swampy ones, along rivers, streams, and lakeshore edges; habitats include deciduous woodlands, woodland borders, rocky wooded slopes, savannas, small meadows and clearings in wooded areas, and thickets. This grass is usually found in higher quality wooded habitats. Its preference is partial sun to light shade, moist to slightly dry conditions, and a fertile loamy soil. This attractive grass can be used on erosion-prone sites such as steep slopes as a stabilizer while more slower-growing natives take hold; most wild rye grasses are short-lived perennials. Silky wild rye is a cool season grass, actively growing during the spring and fall when soil temperatures are cool.

Beneficial insects & other wildlife support:

Various *insects* feed on downy wild rye including *leafhoppers*, *aphids*, *stink bugs*, and *beetles*. Caterpillars of several *moths* mine the leaves of these grasses. As it grows near wetlands, the seed heads are sometimes eaten by the *mallard*, *lesser scaup*, and other *ducks*, while *Canada geese* feed on the foliage. The *white-footed mouse* and *prairie deer mouse* eat the seed. It provides cover, nesting material, and shelter for lake, stream and river edge *birds*, *amphibians*, *insects*, *small mammals*, and other critters.


54b

Seasonal interest:

The seeds are an attractive blue-gray turning to tan when ripe; the weight of many seeds on each stem cause them to droop gracefully downward.


54c

Common associates include:

Sugar maple; Pennsylvania sedge; Virginia water leaf; wild geranium; rosy sedge; mayapple; Virginia spring beauty; and wild ginger.

Water conservation & erosion control:

A great choice for growing in moist to wet areas to stabilize soil and to slow down, spread out, and intercept stormwater; can be used on steep slopes and access stairs borders; an attractive woodland grass with rapidly growing fibrous roots; good for rain gardens and shaded wetlands.


54d

Height: *36 to 48″*

Width: *18 to 24″*

Flower color: *tan spikelets*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
				■	■		

55. Switch grass
Panicum virgatum

Grass family
Poaceae

Grass


55a

Biology notes:

One of the main tallgrass prairie grasses, a good plant for a wide range of habitats. Prefers sunny, dry to moist sandy soils or less often seasonally marshy ground, in mesic to low prairies, swales, dunes, sand barrens and blowouts, riverbanks, streambanks, lakeshores and sand bars, spreading into sandy abandoned fields, roadsides, railroads and adjoining wasted ground. Because of its above-average tolerance of salt, switch grass can become the dominant grass along little-mowed roadsides where salt is applied during the winter. It can spread aggressively; therefore it should not be over-planted. Like big bluestem and Indian grass, it is late-blooming; purple at flowering time. As it is a warm season grass, most growth and development occurs during the summer months. Switch grass is easily established and therefore very suitable for prairie restorations.

Beneficial insects & other wildlife support:

Various *insects* feed on it such as caterpillars of *skippers*, *moths*, and *butterflies*, *grasshoppers*, *beetles*, *plant* and *stink bugs*, *leafhoppers*, *aphids*, *thrips*, and *flies*. The seeds of switch grass are eaten by a variety of *ground-feeding songbirds*, *wetland birds*, and *upland gamebirds* (*snipe, turkey, mourning dove, redwing blackbird, bobolink, cardinal, juncos, and sparrows*). *Teal*, *widgeon*, and *black ducks* eat the seeds and young foliage. Seeds are also eaten by *mice*; *hoofed mammals* chew the leaves, as do *muskrats* and *cottontail rabbits*. Switch grass provides excellent nesting and fall and winter cover for *pheasants*, *quail*, and *cottontail rabbits*.


55b

Seasonal interest:

Switch grass remains upright during the winter even in heavy snow providing forms of large clumps that act as good cover for various birds and mammals.


55c

Common associates include:

Bottle gentian; golden Alexanders; Canada anemone; yellow coneflower; prairie willow; culver's root; shooting star; bergamot; and Ohio spiderwort.

Water conservation & erosion control:

A great choice for growing in dry to wet areas to stabilize soil and to slow down, spread out, and intercept stormwater; good for dry to wet steep banks and slopes. The root system is fibrous and rhizomatous; it can penetrate up to 10 feet into the ground.


55d

Fast facts

Height: *36 to 72″*

Width: *24 to 36″*

Flower color: *purple spikelets then tan*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

56. Virginia wild rye
Elymus virginicus

Grass family
Poaceae


56a

Biology notes:

Habitats include deciduous woodlands [especially floodplain woodlands], bluffs, moist savannas and sandy savannas, rocky glades, moist prairies, edges of marshes, and low areas along rivers. This grass can tolerate low to moderate levels of disturbance. While it is often characterized as a prairie grass, Virginia wild rye is also common in wooded areas. This grass prefers full sun to light shade, moist conditions, and a fertile soil containing loam or clay-loam. Plants of this grass that grow in sunlight tend to be more robust and a lighter shade of green than those that grow in shade. This grass is easy to cultivate if it receives enough moisture; it is a short-lived perennial that reseeds itself over time. Virginia wild rye a cool season grass, actively growing during the spring and fall when soil temperatures are cool.

Beneficial insects & other wildlife support:

Used by caterpillars of *butterflies, moths, and leafhoppers, beetles, aphids,* and *stinkbugs*. Assorted animals use it as a source of food, including *mallard, lesser scaup*, and other *ducks*, while *Canada geese* feed on the foliage. Palatable and nutritious forage for *large game animals* such as *white-tailed deer as* well as assorted *blackbirds* and *bobwhite quail*. Other *birds* and *small mammals* eat the seeds and utilize the plant fibers for denning and nesting material.


56b

Seasonal interest:

It has handsome reddish-brown fall color and beautiful nodding seedheads.

Common associates include:

Hackberry; wild golden glow; stout wood reed; wild ginger; mayapple; rosy sedge; and common blue violet.


56c

Water conservation & erosion control:

A great choice for growing in moist to wet areas to stabilize soil and to slow down, spread out, and intercept stormwater; can be used on steep slopes and access stairs borders. It is an attractive grass in sun or shade; great plant for erosion control and stabilizing lake shores, wetlands, hillsides, and streambanks. The root system is fibrous; this grass can tiller at the base, forming clonal offsets from the parent root system.


56d

Height: *36 to 48″*

Width: *12 to 24″*

Flower color: *tan spikelets*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

57. Arrow-leaved aster

Aster sagittifolius *[aka Symphyotrichum urophyllum]*

Aster family
Asteraceae

Forb


57a

Biology notes:

Very common throughout most of Wisconsin, (except in the Northern Highlands), from dry oak, poplar, or occasionally pine woods to mesic maple-beech forests, especially along woodland borders and openings, peaking in southern dry-mesic forests, moist bottomland forests, thickets, roadsides, fencerows, pastures, fields and old cemeteries, occasionally in marshy or low places. The preference is partial sun, mesic to dry conditions, and soil that contain loam, clay-loam, or rocky-loam. Most commonly found in open woods and woodland borders with other asters, goldenrods, and grasses.

Beneficial insects & other wildlife support:

The nectar and pollen of the flower heads attract many kinds of *insects*, including *long-tongued bees, short-tongued bees, Syrphid flies, bee flies, wasps,* and occasional *butterflies* or *skippers*. Caterpillars of the *butterflies* (*silvery checkerspot* and *pearl crescent*) feed on the foliage of asters, while the caterpillars of many *moths* feed on the foliage, flower heads, developing seeds, stems, or roots. Other *insect* feeders include *leaf beetles, lace bugs, plant bugs, stink bugs, aphids, leafhoppers,* and the larvae of *leaf-mining flies* and *fruit flies*. *Wild turkey* and *ruffed grouse* eat the seeds and *white-tailed deer, cottontail rabbits* and *groundhogs* browse on the foliage.

57b

Seasonal interest:

Sets large, showy clusters of white-blue blossoms in autumn; tolerates disturbance to some extent. Makes a nice ground cover.


57c

Common associates include:

Red oak; wild sarsaparilla; smooth solomon's-seal; American hog peanut; mayapple; wild geranium; and zig zag goldenrod.

Water conservation & erosion control:

Fast-growing ground cover for most light conditions and all but the wettest soil sites; good border plant for access stairs on drier slopes.


57d

Fast facts

Height: *12 to 48″*

Width: *6 to 12″*

Flower color: *white-blue*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

58. Big-leaved aster
Aster macrophyllus *[aka Eurybia macrophylla]*

Aster family
Asteraceae

Forb

58a

Biology notes:

Ubiquitous throughout northern and eastern Wisconsin in almost all woods except the wettest, from dry Hill's oak-aspen-white oak through maple-basswood, hemlock-hardwoods and intermediate types to wet-mesic white cedar-balsam fir and boreal forests, rarely on the edges of swamps or bogs, also in pine barrens, oak-hickory woods, closed savannas and thickets, including wooded dunes, moraines, rocky bluffs; thrives in cut- or burned-over tracts and roadsides at forest edges. One of the most common ground covers in the state; it has broad, heart-shaped leaves and blooms best under full sunlight. In shady sites, it often spreads by rhizomes.

Beneficial insects & other wildlife support:

Visitors to big-leaved aster include *moths, butterflies, flies,* and assorted *bees*. It is a larval host plant for *silvery checkerspot, pearl crescent,* and *goldenrod hooded owlet butterflies*. The nectar and pollen of the flowers attract a large variety of *insects*, including *bees (long-tongued, short-tongued, bumble, yellow-faced), wasps, flies (Syrphid), beetles,* and *plant bugs*. Other *insects* feed on the foliage and flowers, suck plant juices, or bore through the stems and roots of this aster and others. *Ruffed grouse* and *wild turkey* eat the seeds and foliage, while *white-tailed deer* and *cottontail rabbits* sometimes browse on the foliage.

58b

Seasonal interest:

Big, showy leaves; flowers in late summer.

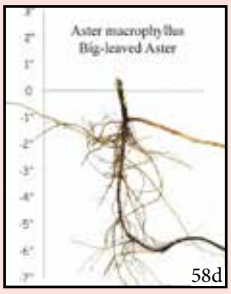
Common associates include:

Miterwort; barren's strawberry; wild geranium; pussytoes; witch hazel; sugar maple; pale-leaved sunflower; and lady fern.

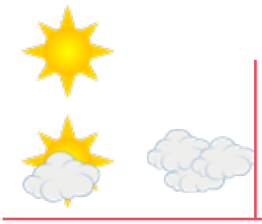

58c

Water conservation & erosion control:

Great spreading ground cover for most light conditions in all but the wettest soil sites; good border plant for access stairs on dry to moist slopes. A great choice for growing in dry moist areas to stabilize soil and to slow down, spread out, and intercept stormwater.



58d



Height: *6 to 12″*

Width: *6 to 12″*

Flower color: *white*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

Fast facts

59. Bishop's cap/two-leaf miterwort
Mitella diphylla

Saxifrage family
Saxifragaceae

Forb

Biology notes:

Typically in dry to moderately moist rich deciduous woods and forests, often in wet hollows or on moist slopes and cliffs; also in swamps, sometimes even cedar swamps. Bishop's-cap is an excellent alternative to non-native ground covers and works well planted under trees; the plants spread by rhizomes forming a compact mass. The preference is dappled sunlight during the spring, otherwise shade is tolerated. Bishop's-cap is usually found in mesic to dry areas of woodlands where the soil contains abundant organic matter, often where there is rocky ground. Most growth and development occurs during the spring when the soil is normally moist.

Beneficial insects & other wildlife support:

Small bees including *sweat bees* visit bishop's-cap, as do many kinds of flies for pollen or nectar. *Ants* crawl up the flower stalks and into the flowers to feed on the nectar. The flowers are pollinated by *Syrphid flies* and *small short-tongued bees* (including *Halictid bees* and *little carpenter bees*). These *insects* suck nectar from the flowers; the *Syrphid flies* also feed on the pollen, while the *short-tongued bees* collect pollen for their larvae. Aside from these *insect* visitors, little appears to be known about floral-faunal relationships for this species. The name bishop's cap refers to the seed capsules, which are split open to resemble the deep cleft in a bishop's miter; the upright capsules are designed for a type of seed dispersal known as splash-cup dispersal. When raindrops strike the capsule, the splash sends seeds flying up to a meter away; the plants spread slowly by rhizomes and make a wonderful addition to deciduous woodlands and shade gardens. It tolerates drier full shade sites, although its preference is for medium soils and partial sun in the spring months.

Seasonal interest:

Big, showy leaves; flowers in late summer. This delicate beauty is one of the woodland spring ephemerals that grace Wisconsin starting in April; it makes a wonderful shade or rain garden plant.

Common associates include:

Bottlebrush grass; plantain-leaved sedge; wood anemone; graceful sedge; cinnamon fern; wild geranium; round-lobed hepatica; and common elderberry.

Water conservation & erosion control:

Great ground cover for most light conditions in all but the wettest soil sites; good border plant for access stairs especially on drier slopes.

Fast facts

Height: 4 to 16"

Width: 4 to 6" and spreading

Flower color: *white*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

60. Black-eyed Susan
Rudbeckia hirta

Aster family
Asteraceae

Forb

60a

Biology notes:

In Wisconsin common throughout in wet to dry-mesic prairies, peaking in wet-mesic prairies, savannas (with jack pine, aspen, oak), fields, along roadsides and railroads, fencerows and other open habitats, especially in sandy or rocky soils; also fens, sedge meadow edges, shores, gravel and borrow pits, and other disturbed sites. The preference is full sun, and slightly moist to moderately dry soil conditions; it tolerates heat, drought and a wide range of soils except poorly-drained wet ones. This plant is fast to mature and easy to grow; a biennial, it blooms and completes its life cycle in its second year but the plant readily reproduces from seed.

Beneficial insects & other wildlife support:

Many kinds of *insects* visit the flowers, but especially *bees (honey, bumble, long-horned, sweat, cuckoo, leaf-cutting, green sweat,* and *small carpenter).* Other *insect* visitors include *wasps (bee wolves, sand, mason, thread-waisted), flies (lance, Syrphid,* and *bee), bugs (jagged ambush),* and *beetles (soldier and blister).* These insects suck nectar from the flowers, although the *bees* also collect pollen and some *beetles* feed on pollen. Caterpillars of *butterflies (silvery checkerspot)* and *moths (wavy-lined, southern emerald,* and *common Eupithecia*). *American goldfinches, sparrows, and black-capped chickadees* eat the seeds. This plant offers protection and food to several *song* and *game birds*.


60b

Seasonal interest:

Black-eyed Susan is an excellent choice for prairie restorations, or the first-year planting of a wildflower garden, as it may bloom during the first year from seed.


60c

Common associates include:

Compass plant; bergamot; mountain mint; yellow coneflower; purple prairie clover; showy sunflower; prairie coreopsis; little bluestem; culver's root; June grass; and winged loosestrife.

Water conservation & erosion control:

Fast-growing ground cover for full to part sun and all but the wettest soil sites; good border plant for along access stairs on dryer slopes and sunny locations. It has a central taproot that acts as a clay buster by punching through denser soils.


60d

Height: *12 to 24″*

Width: *6 to 12″*

Flower color: *yellow rays & brown disks*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

Fast facts

61. Southern blue flag iris

Iris virginica

Iris family
Iridaceae

Forb

61a


61b

Biology notes:

Found in wet places generally: pond edges and lake shores, marshes and sedge meadows, ditches, streamsides, river banks and alder-willow-dogwood thickets, swamps and low bottomland forests, low prairies, fens, and rarely bogs. The root system consists of fleshy rhizomes with coarse fibrous roots; colonies of plants often develop from the rhizomes. Best grown in wet, boggy, acidic, sandy soils in full sun. Also does surprisingly well in average garden soils that are kept consistently moist, however best performance in the border will generally occur with sandy-humusy, water-retentive soils that are never allowed to dry out. Place the rhizomes very near to the surface of the soil when planting.

Beneficial insects & other wildlife support:

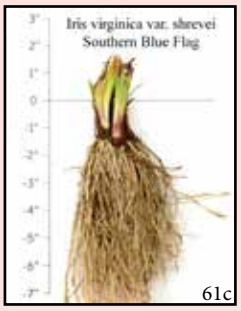
The flowers are cross-pollinated by *bumblebees* and *long-horned bees*; *butterflies* and *skippers* also visit. These *insects* suck nectar from the flowers primarily, although some of the *bees* also collect pollen. Some *insects* feed on it including *weevils*, *flies*, *mealybugs*, *thrips*, and *aphids*; also caterpillars of *moths* (*tiger* and *iris borer*). Cover for *wetland birds*, *waterfowl*, *frogs*, *turtles*, and *aquatic mammals*; provides vertical structure for emerging *insects* like *dragonflies* and *damselflies*.

Seasonal interest:

Stems provide nesting habitat and cover for beneficial insects and perches for feeding birds and emerging aquatic insects.

Common associates include:

Dark-green bulrush; broadleaf arrowhead; mountain mint; buttonbush; swamp milkweed; American sweet flag; orange jewelweed; and woolgrass.



61c

Water conservation & erosion control:

Suited for fluctuating water level conditions at the lakeshore edge and in other wetland areas – prefers water less than 40″ deep; clump-forming – it has creeping, often colony-forming rhizomes.


61d

Fast facts

Height: *24 to 36″*

Width: *4 to 6″*

Flower color: *blue-purple*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

62. Blue vervain
Verbena hastata

Verbena family
Verbenaceae

Forb


62a

Biology notes:

In Wisconsin very common in moist, sunny habitats such as marshes, northern sedge meadows, stream edges, lakeshores, wet shores of rivers and ponds, shrub-carrs, low prairies, and rarely in moist forests, tolerating much habitat disturbance; hence, common in heavily grazed pastures, roadside ditches and railroad rights-of-way and occasionally abandoned sandy fields. The preference is full to partial sunlight, moist conditions, and soil consisting of fertile loam or wet muck. This plant tolerates standing water if it is temporary; this is a good plant to locate near a small river or pond in a sunny location. The small, tubular, blue-violet flowers bloom from the bottom up in July's heat; the numerous crowning spikes of blossoms give a candelabra-like appearance to this graceful, widely-distributed plant.

Beneficial insects & other wildlife support:

The flowers of blue vervain attract many kinds of *long-tongued* and *short-tongued bees (honey, bumble, cuckoo, digger, Halictid, green sweat, long-horned, leafcutter, mining, small carpenter, verbena,* and *dagger).* These *bees* seek primarily nectar, although some species collect pollen. Other floral visitors include *Sphecid* and *Vespid wasps; Syrphid, bee,* and *thick-headed flies;* small *butterflies; skippers (silver spotted)*; and *moths*. Additional insects feed on the leaves and other parts of blue vervain including *flea beetles, midges, aphids,* and *leaf-eating moth larvae. Mammalian herbivores* usually avoid eating this plant because of its bitter leaves – an exception is the *cottontail rabbit*, which may eat the foliage of young plants to a limited extent. Also, various *songbirds* occasionally eat the seeds, including the *cardinal, swamp sparrow, field sparrow, song sparrow, and slate-colored junco*.


62b

Seasonal interest:

The flowers are often a pretty shade of blue-violet, but they are small in size. Blue vervain can offer a strong upright accent to any perennial garden or prairie/ savanna.


62c

Common associates include:

Mountain mint; Canada bluejoint grass; tussock sedge; New England aster; culver's root; boneset; Joe-Pye weed; and marsh phlox.

Water conservation & erosion control:

The root system is fibrous and rhizomatous; small clonal colonies of plants are often produced from the rhizomes. Blue vervain is a good candidate for the wetter parts of a rain garden, for the edge of a pond, stream, wetland, or lake, or another spot on your property with wet feet conditions.


62d

Height: *24 to 72″*

Width: *12 to 36″*

Flower color: *blue to violet*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

Fast facts

63. Boneset
Eupatorium perfoliatum

Aster family
Asteraceae

Forb


63a

Biology notes:

Throughout Wisconsin, common in open moist habitats such as sandy lakeshores, sand bars, beaches, sedge meadows, wet prairies, fens, southern lowlands forests, northern damp cedar-hemlock or tamarack-spruce-popple woods, clearings, thickets, wet fields, swales, shrub carrs, swamps, marshes, river and stream banks and wet cliffs, rarer in drier habitats, though often very weedy in heavily grazed pastures or gravelly dry hillsides. It tolerates flooded conditions; needs constant moisture. Easily grown in average, medium to wet soils in full sun to part shade. Does well in both sandy and clay soils. Historically, boneset was commonly include in medical herb gardens and used as a folk medicine for treatment of flus, fevers, colds and a variety of other maladies. Boneset has interesting foliage and fragrant flowers.

Beneficial insects & other wildlife support:

Visitors include *moths* (*Virginia creeper clearwing*), *butterflies* (*monarch*), *wasps* (*thynnid, cuckoo, thread-waisted, sand, paper, bald-faced, bee wolves, beetle, potter,* and *grass-carrying*), *assassin bugs, weevils, beetles* (*soldier*), *flies* (*Tachinid, thick-headed, bee,* and *Syrphid*), and assorted *bees* (*yellow-faced, bumble, honey, sweat, mining, and green sweat*). Larval host plant for *clymene moth, three lined flower moth,* and *boneset borer moth*. The small seeds appear to be of little interest to *birds* and other fauna, although they are occasionally eaten by the *swamp sparrow*. Many *insect* species are attracted to the flowers as the nectar is relatively easy to access.


63b

Seasonal interest:

Though some authorities claim the name boneset refers to a former use of the plant to aid the healing process for broken bones, others claim that the name is in reference to the plant's use as a diaphoretic in the treatment of an 18th century influenza called break bone fever.

63c

Common associates include:

Tussock sedge; southern blue flag iris; marsh fern; Joe-Pye weed; fowl manna grass; buttonbush; flat-topped aster; cinnamon fern; and swamp goldenrod.

Water conservation & erosion control:

Good for planting at mucky lakeshore edges and other wet places to intercept stormwater; the root system is fibrous and produces rhizomes in abundance. Boneset typically forms vegetative colonies from these root systems over time.


63d

Fast facts

Height: *24 to 60″*

Width: *24 to 36″*

Flower color: *white*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

64. Butterfly milkweed
Asclepias tuberosa

Dogbane family
Apocynaceae

64a

Biology notes:

Found in dry-mesic prairies, steep limy "goat prairies," dry barrens and savannas with oak, inland sands and pine plains, and sandy roadsides, railroad right-of-ways, and fields; particularly common in sandy areas of central Wisconsin. Our only "milkless" milkweed; a spectacular plant for your home landscape. Prefers dry to moderate moisture; it is a large visual attractant for monarch butterflies and other pollinators. Because of its large taproot, older butterfly milkweed does not transplant well and requires loose soils. The root system consists of a woody taproot that is thick and knobby; it can extend several feet below the ground surface. This is a great milkweed for a sunny location in a dry area; mature plants in ideal locations can make as many as 20 stems at an average height of 2 feet.

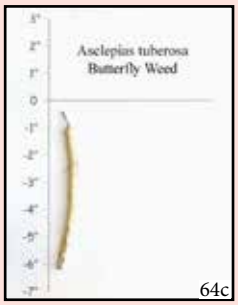
Beneficial insects & other wildlife support:

Many insects utilize butterfly milkweed including *bees (small resin, sweat, cuckoo, green sweat, small carpenter,* and *leafcutter), wasps (paper* and *thread-waisted), butterflies (sulphur, monarch, crescent, great spangled fritillary, swallowtails,* and *queen), moths (milkweed tussock), ants, bugs (small & large milkweed),* and *beetles (soldier, milkweed leaf, & blackened milkweed).* Larval host plant for *monarch and queen butterflies,* and the *milkweed tussock moth.* The *ruby-throated hummingbird* is attracted to the flowers. Some *insects* like the *curve-tailed bush katydid* feed on the leaves, flowers and buds, seedpods, and other parts of butterfly milkweed. *Mammalian herbivores* appear to avoid it.


64b

Seasonal interest:

In older plants the long tap root can extend down many feet. Due to this deep, drought-tolerant tap root, it can be late to emerge in the spring, especially in northern climates, so be patient.



64c

Common associates include:

Big bluestem; narrowleaf mountain mint; tall coreopsis; rosinweed; culver's root; prairie sedge; yarrow; prairie dock; rattlesnake master; downy wood mint; and wild petunia.

Water conservation & erosion control:

Good for planting along access stairs borders on dry, sunny slopes; can be planted in drifts effectively for a showy display. A suitable selection for growing in dry to moist areas to stabilize soil and to slow down, spread out, and intercept stormwater.


64d

Height: *24 to 36"*

Width: *12 to 18"*

Flower color: *orange*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

65. Calico aster

Aster lateriflorus *[aka Symphyotrichum lateriflorum]*

Aster family
Asteraceae

Forb

65a

Biology notes:

Abundant throughout Wisconsin in dry to moist forest, woodlands and thickets, especially along borders, trails and clearings, on floodplains and in fens, most common in the southern hardwood forests (southern wet forests), from black, white and red oak to mesic maple-basswood and maple-beech woods, northern hemlock-hardwoods and second-growth white pine, red maple and birch woods; also on clay bluffs along Lake Michigan and Lake Superior. A very common, highly variable species often weedy in grazed woods and semi-shady gardens, where it is the last autumn flower to bloom.

Beneficial insects & other wildlife support:

The florets of calico aster have shorter nectar tubes than many other species of asters, and they seem to attract a wide variety of *insects*, particularly in sunny areas. More common insect visitors include *short-tongued bees*, *wasps*, and *flies*, and less common visitors include *long-tongued bees*, *small butterflies*, *skippers*, *beetles*, and *plant bugs*. These *insects* seek nectar primarily, although the *short-tongued bees* may collect pollen, while some *beetles* and *flies* feed on the pollen. *White-tailed deer* and *cottontail rabbits* browse on the foliage.

65b

Seasonal interest:

Loose clusters of multiple flowering heads are found concentrated mainly on one side of the widely spreading branches of calico aster.


65c

Common associates include:

Wild golden glow; downy hawthorn; fringed loosestrife; rice cut grass; common elderberry; dark-green bulrush; and common blue violet.

Water conservation & erosion control:

Good quick-growing ground cover for semi-shade and shady areas; also a decent border plant for access stairs. Also a sound selection for growing in moist to wet areas to stabilize soil and to slow down, spread out, and intercept stormwater.


65d

Fast facts

Height: *36 to 48″*

Width: *12 to 24″*

Flower color: *white*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

66. Common ironweed
Vernonia fasciculata

Aster family
Asteraceae


66a

Biology notes:

In Wisconsin locally abundant south of the tension zone, occasional in the north, especially in wet-mesic prairies, tall forb communities along railroads, open lakeshores and riverbanks, open river-bottom forests, swamps and marshes the preference is full sun, moist conditions, and fertile soil; it will thrive in wetter soils in partial sun as well. It will thrive in moister soils with full to partial sun. The seeds are fluffy and brown and disperse nicely in the wind. Common ironweed when combined with the yellows of native sunflowers with which it often grows makes for a striking combination in the home landscape.

Beneficial insects & other wildlife support:

The flowers attract *long-tongued bees, butterflies (Peck's skipper, eastern tiger swallowtail, American painted lady)*, and *skippers* primarily. Other visitors include *bee flies* and *Halictid bees, Syrphid flies*, and *soldier beetles*. These insects seek nectar, although bees also collect pollen. Among the *long-tongued bees* are such visitors as *bumblebees, Epeoline cuckoo bees, miner bees, green sweat bees, long-horned bees,* and *large leaf-cutting bees*. The caterpillars of several *moths* feed on ironweed, including the *Parthenice tiger moth* and the *red groundling*. Caterpillars that bore into the roots or stems of ironweed include the *ironweed borer moth* and the *eupatorium borer moth*. The bitter foliage of ironweed deters consumption by mammalian herbivores.

66b

Seasonal interest:

This stately plant offers a large cluster of unusually brilliant purple flowers on top of up to 6' tall, unbranched stems; it is a sight to see in late summer and into fall.

66c

Common associates include:

Spotted Joe-Pye weed; common boneset; culver's root; swamp milkweed; water horehound; foxglove beardtongue; rattle-snake master; bluejoint grass; cup-plant; dark-green bulrush; and winged loosestrife.

Water conservation & erosion control:

This plant withstands occasional flooding for short time periods; the root system is spreading and fibrous. Ironweed can be utilized as a backdrop in low-lying moist locations like pond, creek, wetland, or lake edges; it is also very suitable for rain garden plantings as a center piece and focal point being a taller specimen to place other plants around.


66d

Height: *24 to 72"*

Width: *18 to 36"*

Flower color: *deep pink to purple*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

67. Common milkweed
Asclepias syriaca

Dogbane family
Apocynaceae

Forb


67a

Biology notes:

Widespread throughout Wisconsin, and one of our most common native plants. Found in prairies (wet-mesic prairies), fields, pastures, roadsides and railroad embankments, sand dunes, openings in aspen woods and pine savannas. Can be generally weedy in dry to somewhat moist, usually sandy, often disturbed sunny habitats, forming nearly pure stands. Common milkweed is one of the easiest and fastest to establish of the milkweeds; showy and fragrant. Easily grown in average, dry to medium, well-drained soils in full sun; drought tolerant. Does well in poor, dryish soils. Once found in abundance in nearly every farm field, ditch, and disturbed site, common milkweed numbers have been in dramatic decline in recent years, due in part to suburban development and the increased efficiency of herbicides used in conjunction with herbicide-tolerant, genetically modified row crops. It spreads readily by seed and underground rhizomes and its taproot can withstand drought.

Beneficial insects & other wildlife support:

Favorite of *monarch caterpillars* as nectar and larval host plant and other *butterflies, moths, beetles, flies, wasps, ants, bugs,* and *bees*. The flowers are very popular with many kinds of *insects*, especially *long-tongued bees, wasps, flies, skippers,* and *butterflies*, which seek nectar. Other insect visitors include *short-tongued bees*, various *milkweed plant bugs, and moths*, including *Sphinx moths*. The caterpillars of *monarch butterfly* feed on the foliage, as do the caterpillars of a few *moths* including *milkweed tiger moth* and *delicate cycnia*. Less common insects feeding on this plant include *seed bugs, weevils,* and *aphids*.


67b

Seasonal interest:

Monarch butterflies lay their eggs exclusively on milkweed plants, making them the sole food source for their larvae.


67c

Common associates include:

Round-headed bush clover; ox-eye daisy; alumroot; American hazelnut; grass-leaved goldenrod; bottle gentian; prairie cord grass; and New England aster.

Water conservation & erosion control

Tall cover for moist soils on woodland and wetland edges and moist slopes; its roots bust through clayey soils to help infiltrate water; can act as natural screening on property lines. Good for the property edges of the waterfront area and as a backdrop specimen planted in areas with ample space as it can spread; not suitable for smaller sites, promoting the vegetative spread of this milkweed.


67d

Fast facts

Height: *24 to 48″*

Width: *12 to 24″ and spreading*

Flower color: *pink*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

68. Culver's root
Veronicastrum virginicum

Plantain family
Plantaginaceae

Forb


69a

Biology notes:

Handsome widespread herb of the eastern deciduous forest; common throughout southern and western Wisconsin (below the Tension Zone). Found in wet to mesic sand prairies, fens, oak openings and thickets, edges of moist woodlands, savannas, ocasionally on lakeshores and in swampy meadows along rivers and ditches; prefers deep loamy soil [black, clayey or sandy], often growing in partial shade to full sun conditions. Culver's root is one of a few perennials with whorled leaves; these dark green whorls create tiers that set of the narrow, white flowersheads. These leaves are whorled in groups of 3 to 7, with 4 or 5 most common. Once called culver's-physic in reference to its use in folk medicine. The current name, culver's root, is derived from Dr. Coulvert of the late 17th to early 18th century, who found laxative properties in the plant.

Beneficial insects & other wildlife support:

Bees (*leafcutter; sweat, yellow-faced, long-horned, long- & short-tongued*), *flies* and *butterflies* (*red admiral, azure, eastern tailed blue*) are the most frequent visitors. Other *insect* callers include *Sphecid wasps, moths,* and *Syrphid* flies. The latter include species that feed on pollen only and are non-pollinating. Culver's root does not appear to be bothered by leaf-chewing insects or *mammalian herbivores* to the same extent as other plants. The seeds are too tiny to be of much interest to birds. It's an elegant unbranched plant, reaching heights of 5' with candelabra-like spikes of white flowers that open from the bottom up mid-summer.


69b

Seasonal interest:

Culver's root offers a strong upright accent to any perennial garden or prairie/savanna. The small white flowers are densely packed together and can sometimes take on a purple hue; the contrast of these flowers against the dark green foliage is stunning.


69c

Common associates include:

Spotted Joe-Pye weed; blue vervain; swamp milkweed; common ironweed; bergamot; shooting star; Ohio spiderwort; yellow coneflower; and prairie cord grass.

Water conservation & erosion control:

A great choice for growing in moist to wet areas to stabilize soil and to slow down, spread out, and intercept stormwater; culver's root has a fibrous and rhizomotous root system that can extend feet into the ground especially in humus-rich soils.


69d

Height: *36 to 72"*

Width: *24 to 36"*

Flower color: *white*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

Fast facts

69. Cup-plant
Silphium perfoliatum

Aster family
Asteraceae

Forb


68a

Biology notes:

In Wisconsin chiefly in the southwest half on the edges of low woods, low wet prairies, and river and stream banks of southern wet forests, common along open or shaded roadsides, fields and other rich and moist habitats such as meadows near rivers, low-lying woodland edges and thickets, fens and seeps, lake borders, fence rows, and along ditches near railroads; in the north adventive, usually along wooded roadsides and railroad rights-of-way, and also populations from long-ago introductions on the Bad River, Lac du Flambeau and Menominee Nations reservations. The preference is full or partial sun, and moist loamy soil. The root system consists of a central taproot, and abundant shallow rhizomes that help to spread the plant vegetatively, often forming substantial colonies. The leaves themselves form a small basin that allows rain water to collect in tiny pools around the stem, hence the cup comparison.

Beneficial insects & other wildlife support:

Assorted *bees (cuckoo, mining, long-horned, bumble, leafcutter, and green sweat), butterflies* and *skippers (eastern tiger swallowtail, fiery skipper),* and *moths (silphium, giant eucosma)* are common visitors and the most important pollinators of the flowers. Other *insects* that utilize it include *wasps, katydids, bee flies,* and other kinds of *flies* that visit the flowers for pollen or nectar. Various *birds*, especially *American goldfinches* and *black-capped chickadees*, are very fond of the seeds, and drink water from the cups formed by the leaves. Because of the tendency for it to form dense colonies, this plant provides good cover for birds, which often lurk among the leaves during the heat of the day, searching for insects or pausing to rest.


68b

Seasonal interest:

Cup-plant is nature's bird feeder; it has high nutrient seeds and cup-like leaf junctions which collect water drunk by birds and other wildlife. Cup-plant has showy yellow flowers that are bee magnets as well; its sturdy stems stay upright year-round providing winter interest and bird perches around feeders.


68c

Common associates include:

Prairie dock; turtlehead; Virginia wild rye; compass plant; shooting star; mountain mint; boneset; and swamp rose.

Water conservation & erosion control:

This plant withstands occasional flooding for short time periods; the root system is spreading and fibrous. Ironweed can be utilized as a backdrop in low-lying moist locations like pond, creek, wetland, or lake edges; it is also very suitable for rain garden plantings as a center piece and focal point being a taller specimen to place other plants around.


68d

Fast facts

Height: *36 to 96″*

Width: *24 to 36″ and spreading*

Flower color: *yellow*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

70. Early meadow rue
Thalictrum diocum

Buttercup family
Ranunculaceae

Forb


70a

Biology notes:

Typically in rich deciduous forests, often on wooded clay slopes; also in oak-hickory forests and thickets along rivers and streams, shaded areas near cliffs, and rocky ravines. The preference is light shade, mesic conditions, and a loam or clay-loam soil. Most vegetative growth occurs during the spring and early summer. Early meadow rue is an excellent shade-garden plant. Use it to fill in where many of your early spring woodland flowers will go dormant. It is valued for its delicate green fern-like foliage, which will last spring through fall. Cool, gray-green foliage provides an attractive complement to later blooming perennials in the garden border.

Beneficial insects & other wildlife support:

Visitors attracted to the abundant pollen of the male flowers include *honeybees* and other *bees*. There are relatively few insects that feed on the foliage, stems, and other parts of this and other *Thalictrum* spp. This select group of species includes the *aphids* and caterpillars of *moths (Canadian owlet, borer, straight-lined looper,* and *meadow rue borer). White-tailed deer* browse may browse on the foliage sparingly.


70b

Seasonal interest:

The greenish-yellow flowers resemble little tassels and bloom in early spring when the leaves have not quite opened and the canopy of the trees above is not yet shading the woodland floor.


70c

Common associates include:

Jack-in-the-pulpit; wild ginger; zig zag goldenrod; great white trillium; wild grape; hog peanut; woodland phlox; pale-leaved sunflower; and marsh marigold.

Water conservation & erosion control:

A great choice for growing in moist to wet areas to stabilize soil and to slow down, spread out, and intercept stormwater; it has a root system that is fibrous and rhizomatous. These offsets can create expanding patches of this plant over time.


70d

Height: *12 to 24″*

Width: *12 to 24″*

Flower color: *white to cream*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

Fast facts

71. False sunflower / ox eye daisy

Heliopsis helianthoides

Aster family
Asteraceae

Forb


71a

Biology notes:

Common throughout Wisconsin, in the south and west in wet to dry-mesic prairies, fens, meadows, savannas, although most common in mesic prairies, often in and on the edges of open, cutover woods, in thickets, on floodplains, lakeshores, low or abandoned fields, and along roadsides and railroads; in the north along wooded roadsides and lakes and streams. Being very shade tolerant, false sunflower is likely more of a savanna than prairie species. Easy to grow.

Beneficial insects & other wildlife support:

The main visitors to ox-eye daisy include *moths* (*clearwing & looper*), *butterflies* (*crescent & common ringlets*), *beetles* (*soldier & ground*), *flies* (*Syrphid & Sinous bee*), *wasps* (*thread-waisted*), and assorted *bees* (*honey, bumble, little carpenter, digger, cuckoo, leaf-cutting, cuckoo, sweat & long-horned*). *Herbivores* browse its young foliage, while upland *gamebirds*, *songbirds*, and small *rodents* eat the seeds.


71b

Seasonal interest:

False sunflower has a long blooming period, with the first blooms appearing by mid-June and the last dying out around the end of September. It also has rigid stems that provide nesting habitat and cover for beneficial insects and perches for feeding birds in winter.


71c

Common associates include:

Compass plant; tall thimbleweed; sweet Joe-Pye weed; flat-topped aster; bergamot; yellow coneflower; brown-eyed Susan; culver's root; and bluejoint grass.

Water conservation & erosion control:

Good for a range of sites, from dry to wet soils; also well-suited for fluctuating water conditions at the lakeshore edge or along wetland fringes. It can be an aggressive self-seeder so give it some room to spread out. A great choice for growing in moist to wet areas to stabilize soil and to slow down, spread out, and intercept stormwater.


71d

Fast facts

Height: *36 to 60″*

Width: *24 to 36″*

Flower color: *yellow*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

72. Field pussytoes
Antennaria neglecta

Aster family
Asteraceae

Forb


72a

Biology notes:

In pastures, oak openings, oak barrens, cedar glades, pine barrens, dry pine woods, dry oak woods, fields, lawns, and all but the wet prairies. In sandy soil, dry to moderate moisture. Early flowering. Spreading by rhizomes, pussy toes provide a good ground cover for dry areas in all but full shade; lawn alternative for harsher sites. The late spring flowers look like tiny cat's feet, thus the name. Spreading by rhizomes, pussytoes provide a good ground cover for dry areas such as rock slopes.

Beneficial insects & other wildlife support:

The flowers are visited primarily by *small flies (flesh, blow, Syrphid,* and *Muscid)* and *bees (Andrenid, Halictid,* and *cuckoo).* Insects that feed on pussytoes include *leafminer flies, midges,* some *butterflies (everlasting tebenna* and *American painted lady),* and *aphids.* Among *vertebrate animals,* some *upland grassland birds* feed on the seedheads including *bobwhite quail* and *greater prairie chicken,* as well as *ruffed grouse* but most parts of the plant are poisonous so *white-tailed deer* and *cottontail rabbits* and other *small animals* do not touch them.

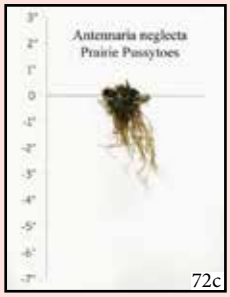

72b

Seasonal interest:

Pussytoes usually are grown for their velvety leaves rather than the white to pale pink flower. Flowers will reach up to about a foot in height but the leaves grow at ground level.

Common associates include:

Leadplant; big bluestem; false Solomon's seal; purple prairie clover; round-headed bush clover; common milkweed; and thimbleweed.



72c

Water conservation & erosion control:

Spreading by rhizomes, pussytoes provide a good ground cover for drier areas such as steep slopes and access stairs along lakes, rivers, or streams. Its colony-forming roots help stabilize soil.


72d

Height: *2 to 16"*

Width: *2 to 4" and spreading*

Flower color: *white to pink*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

Fast facts

73. Fireweed

Epilobium angustifolium *[aka Chamaenerion angustifolium]*

Evening primrose family
Onagraceae

Forb


73a

Biology notes:

Dry forests (aspen, jack, etc.), fields, roadsides, rocky ground; clearings and borders of forest, upper shores; gravels pits, and other disturbed ground; frequently in rather wet places; as the common name suggests, thrives in burned over areas, blooming in three months following a spring fire. The preferences are full or partial sun, moist conditions, and cool to warm temperatures; this plant becomes dormant during hot summer weather. The soil should contain abundant organic matter, with or without sand; a low pH is tolerated, if not preferred. This plant is fairly easy to grow, even under conditions that are not entirely suitable for it, but it has difficulty competing with plants that are better adapted to hot, dry summer weather. In heat or on warm slopes, does better with afternoon shade; needs regular moisture to do well too. Its common name comes from its sudden appearance after a wildfire; a forested site completely devoid of this species can quickly become a dense stand of bright pink fireweed following a modest burn. The root system is fibrous and rhizomatous, which enables this plant to form colonies.

Beneficial insects & other wildlife support:

The flowers attract *bees* (*long-tongued, bumble, leafcutting, and short-tongued*) and *flies* (*Syrphid*) which seek nectar and pollen. Additional *insects* feed on the foliage including *leaf beetles, moths, spittlebugs,* and *aphids*. The seeds are too small to be of much interest to *birds*. The foliage is non-toxic and occasionally eaten by *herbivores*, but it has low food value. Its common name comes from its sudden appearance after a wildfire. A forested site completely devoid of this species can quickly become a dense stand of bright pink fireweed following a modest burn.

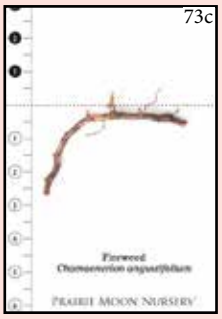
73b

Seasonal interest:

Fireweed has willow-like leaves and red stems like other plants in its genus, but its stunning magenta blossoms make it unique. Flowers bloom bottom to top.

Common associates include:

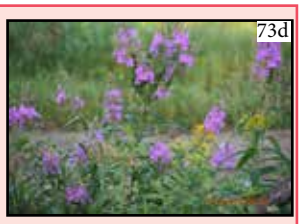
Pearly everlasting; lowbush blueberry; evening primrose; yarrow; pussytoes; northern heart-leaved aster; wild strawberry; and dwarf raspberry.



73c

Water conservation & erosion control:

Good for a range of sites, from dry to wet; also well-suited for fluctuating water conditions at the lakeshore edge. These plants spread by both rhizomes and self-seeding. It can be a vibrant addition to sunny, moist sites, but it spreads aggressively by rhizomes so care is needed in small landscape plantings. Provided with ample amounts of sun and decently moist soils, this member of the willow herb family can rise to surprising abundance in a very short amount of time.


73d

Fast facts

Height: *24 to 72″*

Width: *12 to 24″*

Flower color: *pink*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

74. Flat-topped aster

Aster umbellatus *[aka Doellingeria umbellata]*

Aster family
Asteraceae

Forb


74a

Biology notes:

Throughout Wisconsin in diverse habitats, mostly marshy, swampy, or peaty ground, also in sandy or rocky uplands (such as bracken grasslands), north of the Tension Zone in spruce-cedar-ash swamps, moist fir-yellow birch-hemlock woods, and second-growth aspen, white birch, pine or red maple stands, edges of tamarack or sphagnum bogs; more ecologically restricted to the south, there in fens, low prairies, sedge meadows, shrub carrs, openings in low sandy woods, drained, burned or cut-over lowlands; can get weedy in drainage ditches, roadsides, and old grassy fields. Use on the edge of moist sites, rain gardens, shoreline plantings, or low-lying, sunny areas. Great for planting at the water's edge. Its preference is full or partial sun, slightly wet to moist conditions, and calcareous soil that contains sandy-loam.

Beneficial insects & other wildlife support:

The nectar and pollen of the flower heads attract *long-tongued bees, short-tongued bees, wasps, flies, butterflies, beetles,* and other *insects*. The foliage, plant juices, roots, and other parts of flat-topped aster are also eaten by insects and others. The caterpillars of an uncommon *butterfly, Harris' checkerspot,* feed on it specifically. Other *insect* feeders include caterpillars of *moths (aster borers), aster leafhoppers,* various *aphids, plant* and *lace bugs, leaf beetles,* and the caterpillars of several *butterflies (silvery checkerspot, pearl crescent), leaf miners (aster leaf miner fly),* and the larvae of *small flies*. *Ruffed grouse* and *wild turkey* feed on the seeds and foliage, as do *songbirds (swamp sparrow and eastern goldfinch). White-tailed deer* and *cottontail rabbits* browse on the foliage.

74b

Seasonal interest:

This early blooming aster starts flowering in July with clusters of white petals and yellow center disks; as a plant ages, the color will dull, paling to a yellowish tan. The alternately-attached leaves are simple, rounded, toothless spears with short hairs that add texture.


74c

Common associates include:

Ohio spiderwort; blue vervain; rosinweed; prairie dropseed; mountain mint; purple meadow rue; sawtooth sunflower; and sweet coneflower.

Water conservation & erosion control:

A great choice for growing in moist to wet areas to stabilize soil and to slow down, spread out, and intercept stormwater; the root system is fibrous and rhizomatous and occasionally, small colonies are formed from vegetative offsets.

74d

Height: *36 to 48″*

Width: *12 to 24″*

Flower color: *white*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

Fast facts

75. Golden Alexanders

Zizia aurea

Carrot family
Apiaceae

Forb


75a

Biology notes:

The preference is full to partial sun, although light shade under trees is tolerated. The soil should be moist and loamy, and can contain some rocky material. Very common in southern Wisconsin, less frequent northward, in open, mesic to wet habitats, especially abundant in wet prairies, fens, grassy meadows, old fields,roadsides, openings, and thickets on streambanks, rights-of-way and fencerows, less often dry prairies and in deciduous woods of all kinds, especially in open spots. Golden Alexanders should not be confused with the similar-looking wild parsnip, a highly invasive Eurasian biennial commonly found on roadsides and other disturbed sites; wild parsnip is taller than golden Alexanders, blooms later and can cause painful skin burns. Often grows in colonies.

Beneficial insects & other wildlife support:

The small, numerous, shallow flowers of golden Alexanders provide nectar for *short-* and *long-tongued bees* throughout the flower development. They are the larval host for *black swallowtails* and get visits from *azure butterflies* for nectar. *Bees* (*mining, Andrena, mason, bumble, sweat, yellow-faced, & small carpenter*), *bugs, soldier beetles, paper wasps* (*mason, potter, & paper*), *flies,* and *crab spiders*. One of those natives that every garden should have. It is fairly easy to grow and, although short-lived, will self-seed and persist in many sun/soil situations.


75b

Seasonal interest:

Golden Alexanders have a long bloom time, giving your landscape some well-deserved early color for several weeks in late spring to early summer when many other plants have not yet flowered.

Common associates include:

Wild lupine; smooth beardtongue; wild geranium; Ohio spiderwort; rosinweed; bergamot; prairie phlox; wild garlic; and big bluestem.


75c

Water conservation & erosion control:

A very adaptable native perennial for average soils and moisture; a good choice for growing in moist to wet areas to stabilize soil and to slow down, spread out, and intercept stormwater especially at the water's edge; the root system is fibrous and spreads by offsets and self-seeding.


75d

Fast facts

Height: *12 to 36″*

Width: *12 to 24″*

Flower color: *yellow*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

76. Grass-leaved goldenrod
Euthamia graminifolia

Aster family
Asteraceae

76a

Biology notes:

Common throughout most of Wisconsin in mesic to moist prairie remnants, moist to dry fallow fields and northern sedge meadows, also on edges of marshes, bogs, and moist maple-basswood and hemlock-yellow birch-maple woods, rarely in open deciduous woods, somewhat weedy along fencerows, open sandy or clayey roadsides and railroad rights-of-way; rock crevices along Lake Superior. Typical of moist sandy or gravelly (rarely clay) shores, ditches, fields, interdunal flats and beach pools, exposed lake beds, clearings, borrow pits and other excavations, usually at or near the water table. The root system is fibrous, and new plants develop vegetatively from rhizomes.

Beneficial insects & other wildlife support:

The small flowers attract many kinds of *insects*, including *long-tongued bees*, *short-tongued bees*, *wasps*, *flies*, *butterflies*, *moths*, and *beetles* (*goldenrod soldier* and *black blister*). The seeds are eaten by *American goldfinches*, *black-capped chickadees*, and *swamp sparrows* among others. The foliage is eaten by *greater prairie chickens*, *cottontail rabbits*, and *white-tailed deer*.


76b

Seasonal interest:

Good for a range of sites, from dry to wet; also well-suited for fluctuating water level conditions at the lakeshore edge or as a border plant for access stairs; spreads by rhizomes a little bit every year from the mother plant.


76c

Common associates include:

White sage; leadplant; thimbleweed; Ohio spiderwort; butterfly milkweed; wild lupine; lanceleaf coreopsis; shooting star; golden Alexanders; and sky-blue aster.

Water conservation & erosion control:

Grass-leaved goldenrod provides a nectar source for pollinators and is well-suited for use in pollinator plantings. A good selection for growing in dry to moist areas to stabilize soil and to slow down, spread out, and intercept stormwater.


76d

Height: *24 to 36″*

Width: *12 to 24″*

Flower color: *yellow*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

77. Gray goldenrod
Solidago nemoralis

Aster family
Asteraceae

Forb


77a


77b

Biology notes:

A variable species of open, sunny prairies, plains, and woodlands; common throughout Wisconsin on dry, sandy, clayey and sterile soils in abandoned fields, pastures, roadsides, on mesic to dry prairies, open barren ground, rocky clearings and outcrops, railroad embankments, in jack pine and black oak barrens, and blowout sand dunes. The preference is full sun and dry-mesic to dry soil. Because of reduced competition, field goldenrod thrives best in soil containing sand, clay or gravel, but it will flourish in fertile soil as well.

Beneficial insects & other wildlife support:

A wide range of *insects* visit the flowers for pollen and nectar, including *bees* (*long-tongued, short-tongued, honey, little carpenter, Halictid, Andrenid, and plasterer*), *wasps* (*Sphecid and Vespid*), flies (*Syrphid, Tachinid, flesh, blow, and Muscid*), *butterflies*, and *beetles*. The caterpillars of many *moths*, including *goldenrod scarlet plant bug, net-veined beetle* and *leaf-footed bug*, feed on the foliage and other parts of this plant. *Plant* and *lace bugs, grasshoppers, leaf beetles,* and *aphids* feed on the foliage. The seeds are eaten by *American goldfinches, sparrows, black-capped chickadees, greater prairie chickens* and other upland *gamebirds*. *Herbivores* such as *groundhogs, cottontail rabbits,* and *white-tailed deer* browse on it.

Seasonal interest:

This small goldenrod blooms later than most goldenrods. This plant is a good choice for difficult locations such as sunny slopes or open areas with poor soils where little else will grow.


77c

Common associates include:

Culver's root; dotted horse mint; downy sunflower; white wild indigo bush; June grass; pointed broom sedge; rough blazing star; and rattlesnake master.

Water conservation & erosion control:

Helps to create an effective ground cover in open, harsh, sunny conditions or along access stairs on dryer slopes; the root system consists of fibrous roots and rhizomes – at suitable locations, field goldenrod has a tendency to form clonal colonies.


77d

Fast facts

Height: *18 to 24″*

Width: *8 to 12″*

Flower color: *yellow*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

78. Great blue lobelia
Lobelia siphilitica

Lobelia family
Lobeliaceae


78a

Biology notes:

Found throughout Wisconsin in moist to wet, neutral or somewhat calcareous ground. Common in all but the northern counties in low woods, wet hollows, meadows, streamsides, deciduous forests and occasionally white cedar woods, clearings, marshes, fens, swales, pastures, swamps (hardwood and tamarack), floodplains, thickets, lake shores, ditches, and pond edges. The small seeds require light to germinate; short-lived perennial that reseeds itself back in overtime. The preference is wet to moist soil and partial sun. Full sun is tolerated if the soil is consistently moist, and light shade is also acceptable. The soil should be fertile and loamy. This plant withstands occasional flooding, but it will become muddy and ragged-looking if it receives too much abuse.

Beneficial insects & other wildlife support:

The main visitors to great blue lobelia include *weevils* and assorted *bees* (*digger, yellow-faced, green sweat, small carpenter,* & *bumble*). The nectar and pollen of the flowers attract primarily *bumble bees* and *long-tongued bees* but also *honey, yellow-faced, digger, small carpenter,* and *green sweat bees*. *Bumble bees* are the most frequent visitor and primary pollinators. Less common visitors include the *ruby-throated hummingbird*, larger *butterflies* (*common buckeye, viceroy, wild indigo duskywing,* & *silver-spotted skipper*), and some *moths* (*pink-washed looper*). Lobelias produce a secondary compound known as "lobeline," which deters herbivores like *white-tailed deer*.


78b

Seasonal interest:

One of the best attributes of this plant is the vibrant blue flower color; its deep-hued blue color gives a delightful counterpoint to the yellows of late summer in our gardens.

78c

Common associates include:

Swamp milkweed; common ironweed; mountain mint; turtlehead; zig zag goldenrod; wild ginger; Riddell's goldenrod; bluejoint grass; and fox sedge.

Water conservation & erosion control:

Well-suited for fluctuating water conditions at the lakeshore or wetland edge; a good choice for growing in moist to wet areas to stabilize soil and to slow down, spread out, and intercept stormwater. It has a fibrous root system.


78d

Height: *12 to 48"*

Width: *6 to 12"*

Flower color: *blue*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

79. Great St. John's wort

Hypericum pyramidatum *[Hypericum ascyron]*

St. John's wort family
Hypericaceae

Forb


79a

Biology notes:

Found throughout Wisconsin commonly on moist to wet gravelly soils of wet and open habitats along rivers and streams, alder thickets, sphagnous sedge meadows, borders of marshes and swamps, wet meadows, mesic forest edges and drainage ditches. Conical seed capsules are attractive. On drier sites, the flowering period is shortened dramatically; performs best on moist to wet sites. The root system is rhizomatous, often forming small colonies of plants. The preference is full sun to light shade and moist conditions. This wildflower adapts to different kinds of soil, including loam, clay-loam, and rocky soil. It is robust and easy to grow.

Beneficial insects & other wildlife support:

The main visitors to great St. John's-wort include *moth* (*common pug, wavy-lined emerald, common hyppa, black arches, gray half-spot*), and *butterfly* (*gray hairstreak*) caterpillars, *beetles* (*leaf, banded long-horned*), flies (*Syrphid, Tropidia*), *aphids*, *bee wolves*, and assorted *bees* (*leafcutter, green sweat, bumble, honey*). The flowers are pollinated primarily by *bumblebees*, which collect pollen. Smaller *bees* and other *insects* may visit the flowers as well, but they are less effective *pollinators*. Only pollen is available as a reward to floral visitors. The foliage is somewhat toxic to *mammalian herbivores* and usually avoided.


79b

Seasonal interest:

This species has large attractive flowers that are from 2 to 2½ inches across. With its numerous stamens in the flowers, great St. John's wort produces a large quantity of pollen.

79c

Common associates include:

Michigan lily; tall meadow rue; culver's root; swamp milkweed; awl-fruited sedge; mountain mint; great blue lobelia; common ironweed; sensitive fern; and marsh marigold.

Water conservation & erosion control:

Tall and robust shrub-like plant capable of intercepting water; can be used as an herbaceous hedge. A great choice for growing in moist to wet areas to stabilize soil and to slow down, spread out, and intercept stormwater; the root system is fibrous and rhizomatous and occasionally small colonies are formed from vegetative offsets.


79d

Fast facts

Height: *24 to 60″*

Width: *12 to 36″*

Flower color: *yellow*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

80. Harebell
Campanula rotundifolia

Bellflower family
Campanulaceae


80a

Biology notes:

In Wisconsin frequent in diverse, dry to damp open habitats such as sandy woods (pine, oak, aspen), sandstone or limestone bluffs, cliffs, outcrops and ledges, dry to dry-mesic prairies and cedar glades, also on sandy shores and dunes, spreading into fields and along embankments and roadsides. Common throughout Wisconsin on dry sites; showy blue bell-shaped flowers atop grassy-like foliage. This little plant prefers full sunlight and moist to dry conditions; it typically grows in shallow rocky soil, but will flourish in ordinary garden soil if taller, more aggressive plants are kept away. It tolerates alkaline soil. Effective in lightly shaded woodland areas where plants can be left alone to naturalize; mass plantings or large groupings are best. Harebell does well in rocky soils and crevices, often self-seeding in retaining walls.

Beneficial insects & other wildlife support:

Various small- to medium-sized *bees* (*green sweat, small carpenter, leafcutter, digger, mason*, and *long-horned*) visit the flowers for the nectar; *orange mint moths* visit harebell for nectar too. *Small bees* climb into the base of the flowers to access nectar; other *bees* collect and feed on pollen from the flowers.

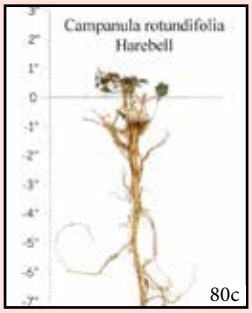

80b

Seasonal interest:

Delicate beauty with small blue-violet bell-shaped flowers that nod from the tips of slender stems, blooming in spurts from summer to fall.

Common associates include:

Prairie phlox; hairy beardtongue; cut-leaved toothwort; pale purple coneflower; Ohio spiderwort; nodding wild onion; blue-eyed grass; and dotted horse mint.



80c

Water conservation & erosion control:

Good for drier sites with sunny slopes; shade-tolerant as well. Choose as a border plant for access stairs on dry slopes; plants will spread in the garden by creeping roots.


80d

Height: *12 to 24″*

Width: *4 to 6″*

Flower color: *blue*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

81. Hoary vervain
Verbena stricta

Verbena family
Verbenaceae

Forb


81a

Biology notes:

In Wisconsin mostly south of the tension zone in various sunny habitats such as xeric and sandy dry prairies, limy or "goat prairies", abundant in heavily grazed, sandy or gravelly pastures and abandoned fields, less frequently in open oak and oak-jack pine woods, roadsides and railroad rights-of-way; northern populations probably adventive. The preference is full sun and mesic to dry conditions. Generally, hoary vervain flourishes in poor soil containing some clay, sand, or gravel. In rich loamy soil, it will grow well, but has difficulty competing with other plants. The seeds germinate readily in open areas where there is some exposure to sunlight. Drought resistance is good, although some of the lower leaves may shrivel and fall off the plant.

Beneficial insects & other wildlife support:

The flowers of blue vervain attract many kinds of *long-tongued* and *short-tongued bees* (*honey, bumble, cuckoo, green sweat, long-horned, green metallic, leafcutter, & verbena*). These *bees* seek primarily nectar, although some species collect pollen. Other floral visitors include *soldier beetles, wasps* (*thread-waisted*), *Syrphid* and *bee flies; skippers* (*silver spotted, peck's, & fiery*), *moths* (*eastern tailed-blue*), and *butterflies* (*common wood nymph* and *cabbage white*). Several *grasshoppers* (*wrinkled, little pasture, red-legged, & Keeler's*) feed on the leaves. Other insect feeders include caterpillars of *moths* (*fine-lined Sallow, verbena*), and aphids. The seeds of it are eaten by various *songbirds* including the *cardinal* (winter), *slate-colored junco* [winter], *field sparrow*, and others. It is possible that these birds help to distribute the seeds to new areas. *Mammalian herbivores* rarely eat hoary vervain because the foliage is quite hairy and bitter.


81b

Seasonal interest:

With its long flowering period and high drought tolerance, it is an excellent plant for sandy, well-drained soils.

81c

Common associates include:

Bergamot; dotted horse mint; black-eyed Susan; stiff goldenrod; butterfly milkweed; purple anise hyssop; white sage; san-bracted sedge; heath aster; and western sunflower.

Water conservation & erosion control:

Hoary vervain can be utilized to help create an effective ground cover in open, harsh, sunny conditions or along access stairs on dryer slopes; it has a root system consisting of a taproot, (which may tiller from the base – sending up multiple stems).


81d

Fast facts

Height: *24 to 48"*

Width: *12 to 24"*

Flower color: *blue to violet*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

82. Jacob's ladder
Polemonium reptans

Phlox family
Polemoniaceae


82a

Biology notes:

Common in Wisconsin south of the floristic Tension Zone in southern dry-mesic forests, rich, often moist hardwoods of sugar maple, basswood, elm and oak, northward in white pine-red maple forests, mesic oak savanna, frequently in low meadows, fens, marshes and even sphagnum and tamarack bogs, on wooded bluffs of sandstone (rarely limestone), uncommonly in deep-soil, wet-mesic and wet prairies, and along roadsides and railroad rights-of-way. The preference is light shade or dappled sun, more or less mesic conditions, and loamy soil with decaying organic matter. This plant is not aggressive; it is able to adapt to somewhat shady gardens that are located near deciduous trees. Although technically rhizomatous, plants do not creep as the common name somewhat erroneously suggests; rather, it spreads by self-seeding.

Beneficial insects & other wildlife support:

The nectar and pollen of the flowers attract *beetles* (*fire-colored*), *flies* (*giant bee* and *Syrphid*), *aphids*, and *bees* (*long- and short-tongued, sweat, honey, bumble, little carpenter, digger, mason, cuckoo, Halictid*, and *Andrenid*). The flowers are also visited by *giant bee flies*, *butterflies*, *skippers*, and *moths*, which seek nectar. The larvae of two *moths* mine the leaflets. *Aphids* suck the sap of the plant.

82b

Seasonal interest:

Jacob's ladder is a rather floppy plant, although both the flowers and foliage are quite attractive; the bell-shaped flowers and compound leaves together provide a distinctive ground cover in partial shade.


82c

Common associates include:

Zig zag goldenrod; white baneberry; wild geranium; sweet cicely; Virginia bluebells; long-beaked sedge; bottlebrush grass; wild garlic; and Dutchman's breeches.

Water conservation & erosion control:

Fast-growing ground cover that performs best under part shade and moist ground; good border plant for woodland edges or next to access stairs on shady waterfronts. The root system consists of a short vertical crown with abundant fibrous roots; it freely self-seeds in ideal growing conditions.


82d

Height: *8 to 20″*

Width: *6 to 8″*

Flower color: *light blue*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

83. Marsh / red / swamp milkweed

Asclepias incarnata

Dogbane family
Apocynaceae

Forb


83a

Biology notes:

This is our only milkweed of truly wet ground, often in several inches of water. In Wisconsin common in wet, acidic to calcareous, open habitats such as shores of lakes and rivers, edges of swamps, bogs, woods and thickets, fens, wet to wet-mesic prairies, swales and ditches; often in alluvial soils. One of our showiest species in its deep color; the flowers have a strong, vanilla-like odor. Use on the edge of moist sites, rain gardens, shoreline plantings, or low-lying, sunny areas. Great for planting at the water's edge; aquatic insect adults in their late instar larval nymph stage [like dragonflies and damselflies] utilize marsh milkweed vegetation during the summer for emerging from the lake or river bottom.

Beneficial insects & other wildlife support:

Favorite of *monarch caterpillars* as nectar and larval host plant and for other *butterflies* (*monarch, great spangled fritillary, swallowtail, red admiral*), *moths* (*hummingbird clearwig*), *skippers, beetles, flies* (*green bottle, Tachinid, Syrphid*), *bee flies, wasps* (*great black, yellow jacket, square-headed, great golden digger*), *katydids, bugs* (*large milkweed*), *beetles* (*milkweed leaf, red milkweed, soldier, banded long-horned*), *aphids* (*yellow milkweed*), and *bees* (*yellow-faced, bumble, sweat, green sweat, small resin, leafcutter, and honey*). Another occasional visitor of the flowers is the *ruby-throated hummingbird*.


83b

Seasonal interest:

Hollow stems provide nesting habitat and cover for beneficial insects and perches for feeding birds.


83c

Common associates include:

Cardinal flower; turtlehead; purple-stemmed aster; woolgrass; monkey flower; tussock sedge; bluejoint grass; Joe-Pye weed; southern blue flag iris; and blue vervain.

Water conservation & erosion control:

Good for a range of sites, from dry to wet; also well-suited for fluctuating water level conditions at the lakeshore edge or along access stairs bordering other waterfronts including wetland fringes. It prefers wet to mesic slopes on sandy-loam soils; the root system forms clonal colonies of plants from rhizomes.


83d

Fast facts

Height: *36 to 60″*

Width: *12 to 24″*

Flower color: *red*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

84. Meadow anemone / Canada anemone

Anemone canadensis

Buttercup family
Ranunculaceae


84a

Biology notes:

Locally common throughout Wisconsin in open or partly shaded, usually mesic to moist ground; most frequently in southern sedge meadows, sandy lakeshores with moist soils, along borders and clearings in oak, sugar maple, basswood and silver maple woods, sometimes in mixed conifer-hardwood forests, locally on roadsides, railroads, grassy or brushy streambanks and stony shores, and in mesic to moist prairies, marshes, swales and shrub carrs; often thriving where native associates have been destroyed. The preference is full or partial sun, moist conditions, and calcareous soil containing loam or gravelly material. Spreads via self-seeding and rhizomes.

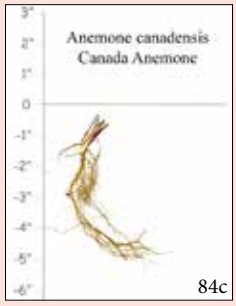
Beneficial insects & other wildlife support:

With no nectar offered, Canada anemone puts its resources into pollen production to attract *pollinators*. The flowers attract many types of *bees* (*mining, small carpenter, sweat, green sweat,* and *yellow-faced*), *beetles* (*fruitworm long-horned, tumbling flower*), *flies* (*Syrphid*), *crab spiders,* and *katydids.* Because the foliage contains blistering agents that can irritate the gastrointestinal tract, *mammalian herbivores* usually do not eat it.


84b

Seasonal interest:

In only a few seasons, a few plants of Canada anemone can quickly become a beautiful mat of white flowers. Even when not in bloom, the foliage makes an attractive ground cover.



84c

Common associates include:

Great blue lobelia; swamp milkweed; golden ragwort; great angelica; little bluestem; boneset; bluejoint grass; southern blue flag iris; stiff goldenrod; and tussock sedge.

Water conservation & erosion control:

An excellent choice for growing in moist to wet areas to stabilize soil and to slow down, spread out, and intercept stormwater; good border plant for access stairs in full sun or part shade and moist conditions. This ground-creeper has a root system that is rhizomatous and forms vegetative colonies of plants from these offshoots.


84d

Height: *8 to 30″*

Width: *6 to 12″*

Flower color: *white*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

85. Mountain mint
Pycnanthemum virginianum

Mint family
Lamiaceae

Forb


85a

Biology notes:

In Wisconsin mostly in the southern half of the state, in mesic to wet-mesic prairies, bog and marsh borders, meadows, pastures, fens, tamarack swamps, swales, sedge meadows, depressions such as old lake beds, fields, sandy banks and occasionally dry prairies or oak-pine woods. The preference is full or partial sun, and moist to average conditions. The soil can contain loam, sand, clay, or gravel; this plant is not fussy about soil texture. The long bloom time, a month or more from July on into September, is another reason mountain mint is a great choice for those interested in feeding pollinators. The light green foliage of all mountain mint species is visually pleasing too, making it a nice garden choice for greenery even when not flowering. It does well in low lying areas.

Beneficial insects & other wildlife support:

Mountain mint attracts a diversity of *insects* to its flowers, usually for nectar, including various *bees* (*honey, long-horned, sweat, yellow-faced, small resin, bumble, cuckoo, and Halictid*), *wasps* (*Sphecid, great golden digger, paper, potter, grass-carrying, Thynnid, cuckoo, great black, and Eumenine*), *ants, flies* (*bee, soldier,* and *tachinid*), small *butterflies* (*pearl crescent & banded hairstreak*), *moths,* and *beetles* (*wedge-shaped*). *Mammalian herbivores* and many leaf-chewing insects apparently find the mint fragrance of the leaves and stems repugnant, and rarely bother this plant. All parts of the plant emit a strong, mint-like aroma when crushed or brushed against.

85b

Seasonal interest:

Mountain mint has a long bloom time culminating in beautiful yellow fall color; its light green foliage makes it a nice garden choice even when not flowering.


85c

Common associates include:

Turtlehead; porcupine sedge; prairie blzing star; boneset; stiff goldenrod; compass plant; prairie dock; bottle gentian; water horehound; sensitive fern; and sneezeweed.

Water conservation & erosion control:

The root system produces rhizomes, which spread a short distance from the mother plant; after time, small colonies of plants are formed vegetatively. A good border plant for moist woodland edges or next to access stairs on dry to mesic-wet slopes or wetland fringes.


85d

Fast facts

Height: *24 to 36″*

Width: *12 to 18″*

Flower color: *white*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

86. New England aster

Aster novae-angliae *[aka Symphyotrichum novae-angliae]*

Aster family
Asteraceae

Forb


86a

Biology notes:

Abundant in Wisconsin mostly south of the Tension Zone in diverse, usually mesic to wet, open habitats, especially in mesic to wet-mesic prairies, marshes, sedge meadows, fens and swales, also in moist woods and thickets, stream banks and lake shores, often in disturbed, sometimes dry ground such as fields, quarries, pastures, ditches and railroad ballast, and somewhat common on roadsides and fencerows. Nice perennial for moist to wet areas; the numerous disc florets on the flower provide both nectar and pollen to assorted insects. This plant colonizes disturbed areas readily, but it also occurs in high quality habitats. The preference is full or partial sun, and moist to average conditions; the soil can contain loam or clay. The colors of New England aster can vary from purple, violet, and lavender to all shades of pink. It is easy to identify the plant because of the hairy stem and leaves that clasp the stem in a distinctive manner, nearly encircling it, making it unique from other asters.

Beneficial insects & other wildlife support:

Visitors to New England aster for nectar, pollen, and other gifts include *moths* (*Canadian sonia, Arcigera flower*), *butterflies* (*pearl crescent, common buckeye, northern crescent*), *flies* (*bee* & *Syrphid*), *beetles* (*soldier*), *skippers*, and assorted *bees*. These *bees* (*mining, small carpenter, long-horned, cuckoo, leafcutter, bumble*, & *green sweat*) are the primary visitors to the flowers. The seeds and leaves of this plant are eaten to a limited extent by the *wild turkey*, while *white-tailed deer* and *cottontail rabbits* occasionally browse on the foliage, sometimes eating the entire plant. However, New England aster is not a preferred food source for these *animals*. The nectar of the flower provides an excellent source for *monarch* and other *butterflies* late into the fall.

86b

Seasonal interest:

Provides color and contrast deep into fall; drought tolerant and deer-resistant. The colors of the New England aster can vary from purple, violet, and lavender to all shades of pink.

86c

Common associates include:

Cup-plant; bottle gentian; prairie dock; boneset; sneezeweed; big bluestem; stiff goldenrod; indian grass; mountain mint; and winged loosetrife.

Water conservation & erosion control:

A good choice for growing in moist to wet areas to stabilize soil and to slow down, spread out, and intercept stormwater; also suitable for wet lakeshore edge plantings or along wetland fringes. The root system consists of stout, fibrous roots, which often produce short, thick rhizomes, enabling this plant to spread over time.


86d

Height: *36 to 72″*

Width: *18 to 24″*

Flower color: *purple to pink*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

Fast facts

87. Northern bedstraw
Galium boreale

Madder family
Rubiaceae

Forb

87a

87b

Biology notes:

In Wisconsin abundant (except in the Northern Highlands) in moist to mesic prairies, fens, open hardwood forests (both southern and northern), oak, hickory, aspen, and pine openings and a variety of other habitats like tamarack swamps, thickets, fields, meadows, banks of ditches, streams, and lakes. Showing the best growth in full sun; prefers moist soils where it will often spread by creeping roots and self-seeding. Can be useful in shady areas of woodland or shade gardens. Easily grown in average, medium, well-drained soils in part shade; avoid heavy, poorly-drained soils.

Beneficial insects & other wildlife support:

The flowers are occasionally visited by small *bees* or *flies*; these *insects* usually suck nectar. Northern bedstraw is food for the caterpillars and larvae of many *moths* (*large* and *small elephant hawk moths, galium carpet, shaded pug, barred straw, drab brown wave, white-banded toothed carpet,* and *galium sphinx*). Other *insect* feeders include *midges, sawflies,* and *aphids*. *White-tailed deer* and *cottontail rabbits* eat the foliage. The bristly seeds of bedstraw can cling to the fur of animals and the clothing of humans in dispersal; by this means, the seeds are distributed to new locations. Pair with wild columbine and golden Alexanders for stunning color contrast in the spring.

Seasonal interest:

The dried foliage has a nice vanilla scent; this plant thrives in part shade and medium-dry to medium-moist soils. The flower is similar to other bedstraws, consisting of four petals that are bleach white; northern bedstraw flowers in a mass of branched clusters.


87c

Common associates include:

Whorled loostrife; wild columbine; golden Alexanders; prairie phlox; golden ragwort; mountain mint; yellow coneflower; culver's root; and thimbleweed.

Water conservation & erosion control:


87d

Good for a range of sites, from dry to wet; also well-suited for fluctuating water level conditions at the lakeshore edge or along wetland fringes. Can also be used as a border plant along access stairs or in the view corridor in shady situations; northern bedstraw grows in dense clumps and can be aggressive at times because of how it spreads both by self-seeding and underground rhizomes from its root system.

Fast facts

Height: *16 to 24″*

Width: *6 to 8″*

Flower color: *white*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

88. Northern blue flag iris
Iris versicolor

Iris family
Iridaceae

Forb

88a

Biology notes:

Found in wet places generally: lake shores, marshes, river borders, stream banks and open bottomland woodlands, wet meadows, ditches, swamps, fens, sphagnum bogs, seeps, edges of ponds and streams, and low-lying ground along railroads and roadsides. Grows best in wet to moist conditions, partial to full sun, and in a rich organic soil. In light shade, this plant often fails to flower, and it tends to decline in abundance if conditions become too dry. This iris may be grown in up to 4-6" of shallow, standing water, in moist shoreline soils, or in constantly moist humusy soils of a border. Attracts butterflies and hummingbirds, and it is excellent to use in the garden to add some color to any location.

Beneficial insects & other wildlife support:

The flowers are cross-pollinated by *bumble bees* and *long-horned bees*; *butterflies* and *skippers* also visit. These insects suck nectar from the flowers primarily, although some of the *bees* also collect pollen. Some *insects* feed on it destructively including *weevils*, *flies*, *mealybugs*, *thrips*, and *aphids*; also caterpillars of *moths* (*tiger* and *iris borer*). Provides great cover for *wetland birds*, *waterfowl*, *small mammals*, *frogs*, *turtles*, and *aquatic insects*; gives vertical structure for emerging *insects* like *dragonflies* and *damselflies*.

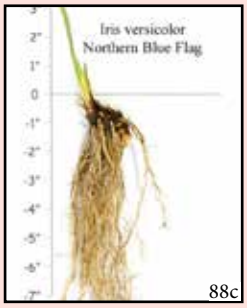

88b

Seasonal interest:

Stems provide nesting habitat and cover for beneficial insects, amphibians, and perches for feeding birds and emerging aquatic insects; this species can be utilized for its brightly colored floral display.

Common associates include:

Marsh marigold; blue vervain; marsh fern; starflower; wintergreen; creeping dogwwod; leatherleaf; spinulose wood fern; bog rosemary; turtlehead; and Labrador tea.



88c

Water conservation & erosion control:

Northern blue flag iris is well suited to fluctuating water level conditions at the lakeshore edge or along wetland fringes with less than 40" deep water; it will spread to form colonies via its clump-forming root masswhich provides good shoreline protection over time..


88d

Height: *24 to 36"*

Width: *4 to 6" and spreading*

Flower color: *blue*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

Fast facts

89. Prairie smoke
Geum triflorum

Rose family
Rosaceae

Forb


89a

Biology notes:

Common over southern Wisconsin on dry prairies, hillsides, jack pine barrens, oak savanna, sandy prairie relicts, open sandy ridges and bluffs of exposed sandstone, on poor dry soil of open fields, hillsides, pastures and roadsides; occasionally in moist meadows and marshes. Great as a ground cover or border plant on sunny, dryer slopes; it has beautiful, wind-dispersed seeds. Excellent native perennial for massing along the front edge of a planting. Best grown in dry, well-drained soils in full sun; tolerates light shade and prefers some afternoon shade in hot summers. This wildflower can form small clonal colonies of plants from the rhizomes. Low to the ground leaves persists through the winter; these winter leaves are often reddish purple.

Beneficial insects & other wildlife support:

Visitors to prairie-smoke include *moths, butterflies,* and assorted *bees* (*sweat, bumble*). *Bumble bees* buzz pollinate prairie smoke flowers and are the primary pollinators. Prairie smoke remains attractive throughout the year, and it attracts upland game birds and songbirds. Prairie smoke is an attractive little plant that should be cultivated more often. The reddish flowers remain attractive for 2-3 months during both the blooming period and afterwards

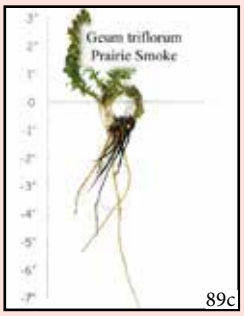

89b

Seasonal interest:

Early in the season bloomer; best know for its hairy, feathery looking seed heads that flutter in the wind; foliage can stay green under the snow.

Common associates include:

Wild lupine; side oats grama grass; wild petunia; prairie phlox; common wood sedge; spring beauty; wild geranium; and yellow trout lily.



89c

Water conservation & erosion control:

Durable ground cover for most light conditions and all but the wettest soils; good border plant for access stairs on dry to moist sites with full sun to part shade light situations to create an effective ground cover. The root system consists of fibrous roots and rhizomes – at suitable locations, prairie smoke spreads to form small colonies.


89d

Fast facts

Height: *4 to 16″*

Width: *6 to 8″ and spreading*

Flower color: *pink to purple to red*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

90. Purple giant hyssop
Agastache scrophulariaefolia

Mint family
Lamiaceae

Forb


90a

Biology notes:

Purple giant hyssop prefers full or partial sun, and mesic to dry conditions; the soil can consist of loam, clay-loam, or contain some rocky material. Typical habitats include openings in dry to moist upland forests, upland areas of prairies, scrubby barrens, and moist thickets. The individual blossoms open over a period of several weeks in the fall; that long bloom time, combined with high nectar content, makes this plant highly attractive to bees and butterflies, including the federally-endangered rusty patched bumblebee. Birds feed on the tiny black seeds that follow. Purple giant hyssop has sturdy, sqaure stems that support highly fragrant foliage and turn a rich brown and provide upright interest throughout the winter months.

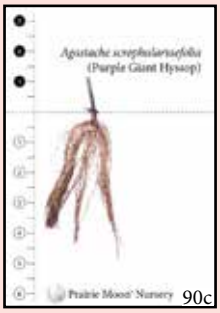
Beneficial insects & other wildlife support:

The flowers are cross-pollinated primarily by *bees* (*honey, bumble, digger, leaf-cutters, long-horned, Halictid bees, small resin*, and *masked bees*), which seek nectar or pollen. Other occasional floral visitors are *Syrphid flies, bee flies, beetles* (*soldier*), *butterflies* (*great spangled frittillary*), *skippers*, and *moths* (*Peck, silver spotted*). *Mammalian herbivores* normally avoid eating this plant as the anise scent of the foliage is repugnant to them; this anise scent may also deter some leaf-chewing insect species. The pith-filled stems of purple giant hyssop provide nesting habitat and cover for beneficial *insects* and perches for feeding *birds*.


90b

Seasonal interest:

Can be cut back in late spring to reduce overall plant height and encourage a bushier appearance. Sensitive to competition, purple giant hyssop requires some habitat disturbance to persist in an area over time. The foliage has a lovely anise scent.



90c

Common associates include:

Spreading dogbane; black-eyed Susan; little bluestem; shagbark hickory; false Solomon's seal; pale-leaved sunflower; arrowleaf aster; and wild grape.

Water conservation & erosion control:

Purple giant hyssop sets soft plumes of the palest purple flowers that top out at 6 feet, soaring above most other plants in the garden; it is a good choice for growing in moist to wet areas to stabilize soil and to slow down, spread out, and intercept stormwater.


90d

Height: *36 to 72″*

Width: *18 to 24″*

Flower color: *pink to purple*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

Fast facts

91. Purple meadow rue
Thalictrum dasycarpum

Buttercup family
Ranunculaceae

Forb

91a

Biology notes:

The preference is full sun to light shade, wet to mesic conditions, and soil that is loamy, slightly sandy, or slightly rocky; the size of individual plants can vary significantly depending on environmental conditions. Habitats consist of river-bottom prairies, moist and wet edges of savannas and thickets, woodland borders, openings in wooded areas, wooded ravines, floodplain woodlands, swamps, and edges of fens. Sometimes it is found in sandy wetlands. Purple meadow rue, like its smaller fern-like woodland cousin early meadow rue, politely displays its delicate, yellow tassle-like flowers in late spring.

Beneficial insects & other wildlife support:

Tall meadow rue has separate male and female plants; just the male plants of it attract female *bees* (*small sweat, bumble*) interested in collecting the flower's pollen. Besides *bees, long-honed beetles* and *flies* visit the flowers. Purple meadow rue provides tall and expansive cover for ground nesting *birds*.


91b

Seasonal interest:

The fall color is pale yellow; this 6' beauty may be the most graceful plant that you encounter in a medium-wet prairie or savanna. The stems are distinctly purple, thus the name, and they have the strength to hold up to high winds.

Common associates include:

Woodland phlox; orange jewelweed; golden Alexanders; elderberry; common blue violet; Jack-in-the-pulpit; Virginia wild rye; and false Solomon's seal.


91c

Water conservation & erosion control:

This tall and robust shrub-like plant is capable of intercepting water; it can be used as an herbaceous hedge. A great choice for growing in moist to wet areas to stabilize soil and to slow down, spread out, and intercept stormwater; the root system is fibrous and rhizomatous. Clonal offsets are sometimes produced from the rhizomes.


91d

Fast facts

Height: *24 to 96"*

Width: *24 to 36"*

Flower color: *cream*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

92. Rough blazing star
Liatris aspera

Aster family
Asteraceae

Forb

92a

Biology notes:

Throughout Wisconsin, (but rare in the central Northern Highlands), most common on mesic prairies such as are found along railroads, on dry, especially sandy prairie relics, becoming less common in open woods, on bluffs and river banks, fields, plains, clearings, roadsides, railroad right-of-ways and in willow thickets, often associated with jack pine and scrub oak savannas. The preference is full sun and mesic to dry conditions. The soil can contain significant amounts of loam, clay, sand, or rocky material; however, this plant typically grows in less fertile acidic soil that is rather rocky or sandy. This plant is easy to grow under well-drained conditions, but has a tendency to flop over while in flower if it is spoiled with rich soil or too much moisture; staking or propping up with clump-forming sedges may be desired.

Beneficial insects & other wildlife support:

The main visitors to rough blazing star include *moths, butterflies, flies* (*bee, Syrphid*), *skippers*, and assorted *bees* (*Halictine, long-tongued, green metallic, honeybees, bumble, little carpenter, miner,* and *leaf-cutting*). *Butterfly* visitors include *monarchs, painted ladies, black swallowtails, wood nymphs, fritillaries,* and *sulfurs*. The caterpillars of the *rare glorious flower moth* feed on the flowers and seed capsules of this and other gayfeathers. *Herbivores*, large and small, readily eat the foliage and stems, including *cottontail rabbits, white-tailed deer,* and *groundhogs*; *songbirds* like *American goldfinches* and *black-capped chickadees* feed on the seeds. Sometimes *small rodents* will dig up the corms and eat them.


92b

Seasonal interest:

This is a beautiful plant while it is flowering, although the blooms decline relatively quick; butterfly magnet for wonderful nectar.

92c

Common associates include:

Showy goldenrod; butterfly milkweed; prairie dropsed; thimbleweed; New Jersey tea; prairie dock; prairie phlox; wild lupine; lance-leaved coreopsis; and prairie brome grass.

Water conservation & erosion control:

Good for dryer sites with sunny slopes; the root system consists of a woody corm – occasionally offsets develop a short distance from the mother plant, creating small colonies. Helps to create an effective ground cover in open, harsh, sunny conditions or along access stairs on dryer slopes.


92d

Height: *24 to 36″*

Width: *10 to 18″*

Flower color: *purple*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

Fast facts

93. Showy goldenrod
Solidago speciosa

Aster family
Asteraceae

Forb


93a

Biology notes:

Scattered in dry, open, sandy habitats, chiefly in western and southwestern Wisconsin south of the Tension Zone, in remnant, often sandy, mesic prairies, abandoned fields, roadsides, open sandstone bluffs, steep roadbanks, neglected cemeteries and sometimes in black oak savannas or open jack pine woods; spreading northward and eastward along sandy roadsides and railroad rights-of-ways. It prefers full or partial sun, and slightly moist to slight dry conditions; the soil can contain significant amounts of loam, sand, or rocky material. Showy goldenrod tends to bloom a little later than most goldenrods. Sadly, goldenrods often get blamed for causing the dreaded hay fever; this is simply not true. Their pollen is quite large and sticky so as to better adhere to the body of visiting insects. Because of this, goldenrod pollen cannot become airborne and can never make its way into your sinuses.

Beneficial insects & other wildlife support:

A wide range of *insects* visit the flowers for pollen and nectar, including *bees* (*long-tongued, short-tongued, honey, and bumblebees*), ants, the occasional *butterfly* or *moth*, and *beetles* (*goldenrod soldier & black blister*). The seeds are eaten by *American goldfinches, sparrows, black-capped chickadees, greater prairie chickens* and other upland *gamebirds* like *ruffed, spruce, & sharp-tailed grouse*. These *insects* seek nectar primarily. The caterpillars of many *moths* feed on various parts of this goldenrod. Other insect feeders include various *leafhoppers, lace bugs, plant bugs,* and *beetles*. *Mammalian herbivores* occasionally eat the leaves, stems, and flowers, including *beaver, white-tailed deer, cottontail rabbits, meadow mice,* and *groundhogs*.


93b © 2009 Katy Chayka

Seasonal interest:

Showy goldenrod is indeed one of the showiest of the genus with a feathery plume comprised of a dense clump of pale yellow to deep yellow flowers atop an attractive red stem.


93c

Common associates include:

White sage; whorled milkweed; round-headed bush clover; big bluestem; lanceleaf coreopsis; sky-blue aster; Ohio spiderwort; leadplant; and rough blazing star.

Water conservation & erosion control:

Helps to create an effective ground cover in open, harsh, sunny conditions or along access stairs on dryer slopes; provides good color and contrast in late summer for the perennial border. The root system is fibrous and rhizomatous, occasionally forming vegetative offsets.


93d

Fast facts

Height: *24 to 36″*

Width: *24 to 36″*

Flower color: *yellow*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

94. Sky-blue aster

Aster oolentangiensis *[aka Symphyotrichum oolentangiense]*

Aster family
Asteraceae

Forb


94a

Biology notes:

Locally common throughout much of Wisconsin but absent from more acidic soils of the north, mostly on dry, sandy, gravelly, or rocky soil, especially in dry to dry-mesic prairies or occasionally in mesic or wet-mesic prairies, in open upland northern pine woods, oak woods and oak openings, black oak and/or jack pine savannas, red pine and/or white pine woods, aspen stands, lakeshores, limy bluffs, cliffs, ledges, limestone flats, dunes, and along railroad rights-of-way and similar dry sites. Sky-blue aster prefers full or partial sun and mesic to dry site conditions. This plant is rather indifferent to soil characteristics – it can flourish in soil that is loamy, sandy, rocky, or contains clay, as long as it is well-drained, making it a versatile native plant.

Beneficial insects & other wildlife support:

Sky blue aster attracts *bees* (*bumble, digger, leaf-cutting, Halictid, Halictus*, and *Andrenid bees*), *flies* (*Syrphid* & *bee*), *butterflies* (*silvery checkerspot* & *pearl crescent*), *skippers, beetles, grasshoppers*, and other *insects* like *aphids, midges*, and *plant bugs*, and *moths* (*aster borer*). Among *birds*, the *ruffed grouse* and *wild turkey* browse it, as do *tree sparrows*. *Cottontail rabbits, groundhogs, eastern chipmunks*, and *white-tailed deer* also browse it and the *white-footed mouse* eats the seeds.

94b

Seasonal interest:

Sky blue aster has very attractive blue flowers and is easy to grow; it is also drought tolerant and an excellent butterfly and bee plant for autumn.

Common associates include:

Nodding wild onion; northern bedstraw; purple prairie clover; leadplant; big bluestem; yellow coneflower; stiff goldenrod; white sage; and butterfly milkweed.

94c

Water conservation & erosion control:

Decent ground cover for drier sites; good mixed border plant along access stairs or in the view corridor on dry to moist slopes and shorelines. A great choice for growing in dry to moist areas to stabilize soil and to slow down, spread out, and intercept stormwater; the root system has long creeping rhizomes, promoting the vegetative spread of this plant.


94d

Height: *24 to 36″*

Width: *12 to 24″*

Flower color: *blue*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

Fast facts

95. Smooth blue aster

Aster laevis *[aka Symphyotrichum laeve]*

Aster family
Asteraceae

Forb


95a

Biology notes:

Found in dry, open forests and woods (*oak, aspen, jack pine, or red cedar)* and thickets, barrens and edges of lowland forests dry to mesic prairies, sometimes in old fields, commonly on shaded or partly open banks, clay bluffs along lake Michigan, roadsides, railroad right-of-ways, and fencerows. Also on lakeshores and various disturbed habitatst like quairries, gravel pits, pastures, and even fallow vegetable gardens. Smooth blue aster has many attractive qualities – they include its adaptability, beautiful flower heads, attractive foliage, and flowering stems that usually remain erect; it's surprising that this aster is not grown more often in flower gardens.

Beneficial insects & other wildlife support:

Visitors to smooth blue aster include *moths, butterflies*, and assorted *bees* (*honeybees, bumblebees, cuckoo, digger, leaf-cutting, Halictid, Halictus,* and *Andrenid*), *wasps* (*Sphecid*), *flies, butterflies* (*pearl crescent*), *beetles*, and *skippers*. *Ruffed grouse* and *wild turkeys* feed on it as do *tree sparrows* and *white-footed mice*. The young foliage of these plants is browsed occasionally by *white-tailed deer, cottontail rabbits*, and *groundhogs* as well.


95b

Seasonal interest:

Smooth blue aster has a tough stem that often takes on a shade of blue and allows it to stand tall during its long late summer to mid fall bloom.

Common associates include:

Canada tick trefoil; rosinweed; shooting star; copper-shouldered oval sedge; showy sunflower; bergamot; rough-leaved blazing star; and yellow pimpernel.

95c

Water conservation & erosion control:

Smooth blue aster is a good border plant for access stairs on dryer slopes; it has a non-aggressive rhizomatous root system that allows the plant to spread slowly. In a garden setting, smooth blue aster will persist for many years.


95d

Fast facts

Height: *36 to 48″*

Width: *12 to 24″*

Flower color: *blue*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

96. Sneezeweed
Helenium autumnale

Aster family
Asteraceae

Forb


96a

Biology notes:

Abundant in all but northernmost Wisconsin, in sunny to shady areas such as river bottom floodplain forests, shores, low open woods and thickets with alder, willow, elm, ash, red-osier dogwood, silver maple and yellow birch. Also found on sand and gravel bars of rivers and lakeshores, banks of streams, wet and sedge meadows, fens, tamarack swamps, edges of cedar swamps, in low swales or marshes, floodplains, and peaking most abundantly in wet prairies. Sneezeweed prefers full to partial sun, wet to moist conditions, and soil containing loam or silt that is relatively high in organic material. Sneezeweed can appear sloppy and unkempt as a taller plant, particularly if it is allowed to dry out. Although not required, plants may be cut back in early June (at least six weeks before normal flowering) to reduce plant height and to encourage branching, thus leading to a more floriferous bloom, healthier foliage and less need for support as without it this plant gets "leggy".

Beneficial insects & other wildlife support:

The most common visitors to the flowers are *bees* (*honey, bumble, long-horned, Halictid, cuckoo*, and *leaf-cutting*), *wasps* (*Sphecid* and *Vespid*), *flies* (*Syrphid*), *butterflies, moths*, and *beetles*. Most of these *insects* suck nectar, although some *bees* also collect pollen and some *beetles* feed on the pollen. Several *aphids* suck plant juices from sneezeweed, while the caterpillars of rigid sunflower borer moth bore through its stems and feed on the pith. *Mammalian herbivores* usually do not eat this plant because its foliage is toxic and bitter; be mindful that there are reports of severe poisoning in livestock that have consumed this plant.

96b

Seasonal interest:

Notwithstanding its common name, this plant doesn't cause sneezing or hay fever during the autumn – its pollen is distributed by insects, rather than the wind. The common name comes from use of this plants dried, pulverized seed heads to make a snuff that supports sneezing; super butterfly plant for later in the growing season.

96c

Common associates include:

Canada bluejoint grass; New England aster; mountain mint; winged loosestrife; fowl manna grass; whorled loosestrife; royal fern; ironweed; blue vervain; and water horehound.

Water conservation & erosion control:

Good choice for the lakeshore edge or along a wetland fringe; the root system is shallow and fibrous with this clump-forming beauty. Sneezeweed is a good choice for growing in moist to wet areas to stabilize soil and to slow down, spread out, and intercept stormwater.


96d

Height: *36 to 60"*

Width: *24 to 36"*

Flower color: *yellow*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

Fast facts

97. Spikenard
Aralia racemosa

Ginseng family
Araliaceae

Forb


97a

97b

Biology notes:

Found in rich soil, usually moist beech-maple and hemlock-hardwoods, especially along edges of clearings; in oak forests and conifer (mostly cedar) swamps. Widely spreading and bushy, with enormous leaves and a big flower that yields beautiful, purple-black fruit. It is a taller, wider woodland plant than most so be cautious when planting it next to smaller plants – make sure to give it plenty of elbow room. Easily grown in average, medium moisture, well-drained soils in full sun to part shade; perhaps best in part shade. Prefers moist, fertile loams, but tolerates a wide range of soils including rocky and clayey ones. Best sited in areas sheltered from strong winds to help protect the large compound leaves.

Beneficial insects & other wildlife support:

The main visitors to spikenard include *moths* (*Aralia shoot borer*), *butterflies, ants*, and assorted *bees* (*small sweat, yellow-faced, & metallic green sweat*). The berries of aralia plants are eaten by some woodland *songbirds*, including the *white-throated sparrow, swainson's thrush, and wood thrush*. Spikenard berries are also eaten by some *mammals*, including the *red fox, eastern skunk, black bear, and eastern chipmunk*. Highly shade tolerant, it makes an excellent urban shade garden specimen providing wildlife habitat in both structure and food. Flowering in mid-summer when few other perennials in shady areas are active, spikenard provides valuable forage for bees in shade gardens. Besides attracting *bees*, many types of beneficial, *solitary wasps* are common callers of the flowers.

Seasonal interest:

Spikenard is a large, spreading, shrub-like plant at maturity, dying all the way back to the ground during the dormant season; it is also an excellent substitute for gardeners who find the shape and form of the highly invasive Japanese knotweed desirable. One of the largest herbaceous species in our state flora.

97c

Common associates include:

Calico aster; Dutchman's breeches; early meadow rue; hairy wood mint; purple giant hyssop; wild black currant; fowl manna grass; wild geranium; and blue cohosh.

Water conservation & erosion control:

Good for growing to intercept stormwater, especially in shady areas; great for planting along access stairs on dry to mesic, shadier slopes and edges along lakeshores, streams, rivers, and wetlands. Spikenard spreads along the woodland ground by rhizomes from the mother plant creating patches of cover.


97d

Fast facts

Height: *24 to 48″*

Width: *24 to 36″ and spreading*

Flower color: *greenish to white*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

98. Spotted Joe-Pye weed

Eupatorium maculatum *[aka Eutrochium maculatum]*

Aster family
Asteraceae

Forb


98a

Biology notes:

Found throughout Wisconsin, characteristic of wet prairies and especially northern sedge meadows, in marshes, alder thickets, wet woods, lowlands, fens, and along streams and lakes, less common in bogs, cedar swamps, or drier habitats; also found in wet ditches and roadsides, thickets, and moist clearings, hollows, and openings. Spotted Joe-Pye weed prefers full or partial sun, wet to moist conditions, and a mineral-rich soil containing silty or sandy loam; it is more tolerant of water-logged conditions than most plants. Spotted Joe-Pye weed is partial to sandy wetlands, but it is also found in non-sandy wetlands. It is usually found in high quality natural areas, rather than degraded habitats with a history of disturbance.

Beneficial insects & other wildlife support:

Numerous tiny disc florets on the large flower heads offer a large quantity of nectar to visiting *pollinators*. The nectar of the flowers attracts many visitors including assorted *bees* (*honey, cuckoo, bumble,* and *leafcutter*), *bee flies, butterflies* (*azure, white admiral, tortoiseshell, eastern tiger swallowtail*, and *monarchs) skippers* (*silver spotted*), *wasps, leaf beetles*, and *aphids*. The seeds of Joe-Pye weed are eaten by assorted *sparrows, black-capped chickadees*, and *American goldfinches*, among other *birds*. *White-tailed deer* and *cottontail rabbits* eat the foliage.

98b

Seasonal interest:

Spotted Joe-Pye weed has strong stems (with whorled leaves in groups of 3 to 6) that support it so that it rarely needs to be staked even though it is quite a tall plant.

98c

Common associates include:

Marsh marigold; turtlehead; purple meadow rue; bergamot; mountain mint; stiff goldenrod; rosinweed; Michigan lily; Indian grass; winged loosestrife; and golden ragwort.

Water conservation & erosion control:

Large plant capable of intercepting rainfall effectively; prefers moist, fertile, humusy soils which do not dry out. Good choice for the lakeshore edge or along a wetland fringe. The root system is fibrous and rhizomatous; this plant often forms small clonal colonies. A good choice for growing in moist to wet areas to stabilize soil and to slow down, spread out, and intercept stormwater.


98d

Height: *24 to 72″*

Width: *24 to 36″*

Flower color: *pink to purple*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

Fast facts

99. Stiff goldenrod

Solidago rigida *[aka Oligoneuron rigidum]*

Aster family
Asteraceae

Forb


99a

Biology notes:

Widespread in dry to mesic or wet-mesic prairies, sometimes a common weed in overgrazed pastures, dry fields and hillsides, spreading beyond the limits of the prairie areas into northern and eastern Wisconsin on sandy soils along roadsides, railroad rights-of-way and lakeshores. Stiff goldenrod has larger, flatter flower clusters than most goldenrods, which attracts a host of insects. The preference is full sun and moist to slightly dry conditions. This plant is not particular about soil, which can consist of loam, clay-loam, or gravelly material. Drought resistance is good; some of the lower leaves may wither away in response to heat. This plant is easy to grow and it is one of the more attractive goldenrods. On many sites stiff goldenrod can be a prolific self-seeder.

Beneficial insects & other wildlife support:

With its abundant pollen and nectar rewards, this plant attracts a diversity of insects including many kinds of *bees* (*long-horned, sweat, bumble, yellow-faced, green sweat, honey, small carpenter,* and *leafcutter*), *beetles* (*locust borer, flea, leafminer*), *flies* (*Syrphid & Tachinid*), *butterflies* (*monarch* and *crescent*), *moths, grasshoppers* (*spur-throated*), *lace bugs*, and *wasps* (*yellow-jacketed, paper, digger, potter, mason, grass-carrying, thread-waisted, and square-headed*). Larval host plant for *dart moth*. The greater prairie chicken and eastern goldfinch eat the seeds to a limited extent. Many *mammalian herbivores* eat this plant, particularly during the early stages of growth and development. This includes the *white-tailed deer, cottontail rabbits*, and *muskrats*.


99b

Seasonal interest:

The leaves turn nice shades of red in the fall, for a colorful fall show; stiff goldenrod is a taller plant for all but the shadiest conditions. It is well-suited to most soil types.

99c

Common associates include:

Rattlesnake master; big bluestem; white wild indigo; showy sunflower; switchgrass; bergamot; rough blazing star; heath aster; prairie dock; tall coreopsis; and leadplant.

Water conservation & erosion control:

Stiff goldenrod helps to create an effective ground cover in open, harsh, sunny conditions or along access stairs on dryer slopes; the root system is fibrous and rhizomatous, occasionally forming vegetative offsets. A great choice for growing in dry to moist areas to stabilize soil and to slow down, spread out, and intercept stormwater.


99d

Fast facts

Height: *48 to 60″*

Width: *18 to 24″*

Flower color: *yellow*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

100. Turtlehead
Chelone glabra

Figwort family
Scrophulariaceae

Forb


100a

Biology notes:

Common throughout Wisconsin in low wet habitats with black soil, peat, or muck such as marshes, sedge meadows, wet prairies, fens, swales, edges of tamarack bogs and cedar swamps, willow or alder thickets, floodplains forests, moist ground along woods, stream banks, river banks, pond edges, and lakeshores. Spikes of showy turtle-head shaped flowers atop glossy green foliage. The preference is full or partial sun, wet to moist conditions, and a fertile soil containing some organic matter. This plant can be maintained in gardens if it is watered during dry spells; it appreciates a good, composted leaf mulch in sunny areas.

Beneficial insects & other wildlife support:

Worker *bumble bees* and *ruby-throated hummingbirds* are the most frequent visitors to turtlehead; others that come include *moths, butterflies, flies,* and other *bees* (*long-horned*). Nectar is secreted around the base inside the opening of the flower; typical visits by callers to access the sugary nectar averages ~30 seconds. A large amount of energy goes into prying open the flower and climbing inside; *bees* push through the opening of the flower by forcing through the upper and lower lips of it to access the nectar. These efforts are worthwhile for *bumble bees* and others, as turtlehead flowers provide lower visitation rates, high nectar rewards, and on average over three milligrams of sugar daily. The foliage is bitter and usually avoided by *white-tailed deer* and other *herbivores*.


100b

Seasonal interest:

Named for its pretty white blossoms which resemble a turtle head poking out from its shell.

Common associates include:

Bottle gentian; golden Alexanders; common ironweed; cardinal flower; winged loostrife; marsh milkweed; bluejoint grass; cinnamon fern; great blue lobelia; porcupine sedge; broadleaf arrowhead; and prairie cord grass.

100c

Water conservation & erosion control:

A good selection for planting along mucky lakeshore and wetland edges to intercept stormwater; temporary flooding is tolerated. A low-lying spot in a rain garden or bioswale is also a suitable site for this native plant. The root system consists of a taproot, fibrous branches, and rhizomes; vegetative colonies may form as a result of these offsets.


100d

Height: *24 to 48″*

Width: *8 to 12″*

Flower color: *white*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

Fast facts

101. Water horehound aka American bugleweed

Lycopus americanus

Mint family
Lamiaceae

Forb

101a

101b

Biology notes:

Very common throughout Wisconsin, nearly always in moist to wet places: lake shores, edges of marshes and ponds, fens and springy areas, ditches and swales, river and stream margins, swamps, wet gravel pits, other wetlands like sedge meadows and shrub carrs, and other excavations [or filled ground areas]. Water horehound prefers partial to full sunlight and wet to moist conditions. This plant normally grows in flood-prone areas where the soil contains loam, silt, or clay properties.

Beneficial insects & other wildlife support:

A variety of insects visit the flowers, primarily for nectar, especially *short-tongued bees, wasps,* and *flies*. Other floral visitors include *long-tongued bees, butterflies, skippers,* and *beetles*. The caterpillars of *hermit sphinx* feed on the foliage of this and other bugleweeds. Other insect feeders include *aphids* and *gall flies*. Because the leaves of water-horehound are bitter-tasting, they are not often eaten by *mammalian herbivores*. Pith-filled stems provide nesting habitat and cover for beneficial *insects* and perches for feeding *birds* and emerging *aquatic insects*.

Seasonal interest:

Water horehound is a fairly typical member of the mint family; however, it is not particularly showy. This plant has a tendency to sprawl in the absence of supportive vegetation nearby like a clumpy sedge or grass.


101c

Common associates include:

Hard-stemmed bulrush; tussock sedge; marsh milkweed; bluejoint grass; blue flag iris; prairie cord grass; mountain mint; winged loostrife; boneset; and blue vervain.

Water conservation & erosion control:

Good for a range of sites, from moist to wet; also well-suited for fluctuating water level conditions at the lakeshore edge or along wetland fringes. The root system is rhizomatous, but lacks tubers; small colonies of clonal plants are often formed from these offsets. A great choice for growing in moist to wet areas to stabilize soil and to slow down, spread out, and intercept stormwater.


101d

Fast facts

Height: *4 to 40″*

Width: *4 to 8″*

Flower color: *white*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

102. Wild bergamot
Monarda fistulosa

Mint family
Lamiaceae


102a

Biology notes:

In Wisconsin, common throughout, on mesic to dry, open, sandy, gravelly, or rocky ground such as oak or pine barrens, prairies, fields, pastures, cedar glades, and roadsides; occasionally in sedge meadows or other moist places; often at edges of forests, woods, and thickets, and on open stream and lake banks and stabilized dunes. Spreading into disturbed sites such as railroad embankments and waste places. One of the best-known, most widespread mints. Best grown in sites with dry to medium moisture and well-drained soils found in full sun to part shade. It tolerates somewhat poor soils and some drought as well. Plants benefit from good air circulation to avoid powdery mildew.

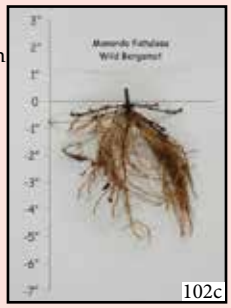
Beneficial insects & other wildlife support:

The nectar of the flowers attracts *bees* (*long-tongued, bumble, miner, cuckoo,* & *leaf-cutter*), *bee flies, butterflies, skippers, wasps* (*mason, green black*), and *hummingbird moths*. A *small black sweat bee (Dufourea monardae)* specializes in the pollination of *Monarda* flowers. Sometimes *Halictid bees* collect pollen, while some wasps steal nectar by perforating the nectar tube. *Ruby-throated hummingbirds* visit the flowers, while the caterpillars of several *moths* (*hermit sphinx, gray marvel*) feed on the foliage. *Mammalian herbivores* usually avoid this plant as a food source, probably because of the oregano-mint flavor of the leaves and its capacity to cause indigestion.


102b

Seasonal interest:

Wild bergamot provides color and contrast all summer long in the garden; it is one of the best forage plants for bumblebees. Its flowers open continuously throughout the day, providing ongoing nectar as older flowers decline and are replaced by newly opened flowers.


102c

Common associates include:

Black-eyed Susan; purple giant hyssop; butterfly milkweed; wild quinine; hoary vervain; wild petunia; New Jersey tea; wood lily; whorled loosestrife; and Indian grass.

Water conservation & erosion control:

Mid-size wildflower suitable for rain gardens and plantings at the water's edge of lakeshores and wetlands; it has an aromatic quality that can deter deer and rabbit browse. This fast-spreading perennial spreads by rhizomatous offsets growing from the root system.


102d

Height: *24 to 48″*

Width: *24 to 36″*

Flower color: *pale pink to lavender*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

103. Wild columbine
Aquilegia canadensis

Buttercup family
Ranunculaceae

Forb


103a

103b

Biology notes:

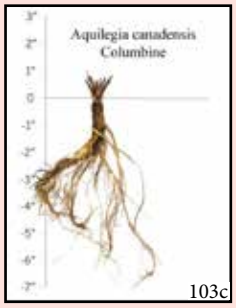
Throughout Wisconsin in dry to mesic or even low woods, especially along borders or clearings of oak-hickory, oak-maple and maple-basswood forests, black oak savannas, cedar glades, pine woods and mixed conifer hardwood forests, also on a variety of more or less wooded to often open rocky hillsides, bluffs, calcareous cliffs, outcrops, ledges and talus, and frequently on banks, beach ridges, gravelly shores, roadsides and quarries. Forms large clumps with attractive foliage in sun to shade. Because the foliage is toxic to them, it is little bothered by herbivores. The preference is light shade to partial sun, moist to dry conditions, and soil that is loamy, rocky, or slightly sandy. Mature plants can also tolerate full sun, although young plants require some shade from neighboring vegetation. Once it becomes established, this plant is easy to maintain.

Beneficial insects & other wildlife support:

Bumblebees, honeybees, sweat bees, and the *ruby-throated hummingbird* visit the flowers for nectar; *bumblebees* may also collect pollen for their larvae. *Short-tongued Halictid bees* collect pollen from the flowers, but they are less effective at cross-pollination. Utilized by the larvae of various *butterflies* (*columbine duskywing*), *moths* (*columbine borer*), and several *leaf miner* flies as well as the *columbine sawfly*. At least four bee species have been found to be effective *pollinators* of columbine in southeastern Wisconsin and northwards.

Seasonal interest:

Columbine provides a showy addition to rain gardens and is an excellent ruby-throated hummingbird nectar plant—one of the few plants in the local flora that is pollinated by hummingbirds, as one would expect from the red flower with long nectar-filled spurs.



103c

Common associates include:

Pussytoes; prairie smoke; blue-eyed grass; golden Alexanders; interrupted fern; lady fern; wild lupine; Jacob's ladder; Virginia waterleaf; thimbleweed; and spikenard.

Water conservation & erosion control:

Columbine provides a showy addition to rain gardens to attract ruby-throated hummingbirds; good border plant for woodland edges or next to access stairs on dry to moist slopes in light shade or partial sun. A great choice for growing in dry to moist areas in combination with ferns to stabilize soil and to slow down, spread out, and intercept stormwater.


103d

Fast facts

Height: *24 to 48″*

Width: *12 to 24″ and spreading*

Flower color: *red*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

104. Wild geranium
Geranium maculatum

Geranium family
Geraniaceae

Forb

104a

Biology notes:

In Wisconsin very common except in the far north, reaching greatest abundance in southern dry-mesic forests and rich mesophytic habitats including sugar maple, beech and basswood stands, not uncommon in oak-hickory, aspen birch, or white pine woods, often in shady ravines and streamside thickets as well as low floodplain forests and white cedar woods, occasionally in mesic prairies and borders of sedge meadows; somewhat weedy and thriving in open or disturbed woods, on soils ranging from dry sand through loam or clay to black muck. Usually left alone by rabbits and deer. The preference is light shade to partial sunlight, moist to slightly dry conditions, and rich loamy soil with abundant organic matter. This plant also tolerates full sunlight if there is sufficient moisture in the soil; it is one of the easier woodland species to cultivate. Each seed is packed into a pod and the pods are attached to a structure that resembles a cranes bill. As the bill dries, it literally catapults the seeds away from the parent plant. Each seed has a small tail-like structure attached to it that bends and moves in response to changes in humidity, which helps to drive the seed into the soil where it can safely germinate.

Beneficial insects & other wildlife support:

Visitors to wild geranium include *moths* (*white-marked tussock, geranium & tobacco budworms & leafroller*), *butterflies, skippers, flies* (*Syrphid & thick-headed*), *beetles* (*leaf-mining & fruitworm*), *bugs* (*plant, burrowing, and stink*), *aphids*, and assorted *bees* (*bumble, cuckoo, small carpenter, sweat, mason, long-horned, Halictid*, and *Andrenid*). Dark lines on the flowers act as nectar guides. It is the larval host plant for *leafmining moths* and *white-marked tussock moths*. Among other *animals, chipmunks, squirrels*, and *mice* eat the seeds.


104b

Seasonal interest:

Foliage turns bright red in fall; flowers give way to distinctive, beaked seed capsules aka crane's bill. An excellent plant to mass under trees, interplant with ferns or late-summer flowering woodland natives.

Common associates include:

Red baneberry; woodland phlox; sweet cicely; Virginia waterleaf; wild ginger; plantain-leaved sedge; comon wood violet; great white trillium; and early meadow rue.

104c

Water conservation & erosion control:

Wild geranium is a spreading ground cover appropriate in most light conditions and all but the wettest soil sites; good border plant for woodland edges or next to access stairs on shadier slopes that have dry to mesic soils. A great choice for growing in dry to moist areas to stabilize soil and to slow down, spread out, and intercept stormwater.


104d

Height: *18 to 24″*

Width: *12 to 18″*

Flower color: *pink*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

Fast facts

105. Wild ginger
Asarum canadense

Birthwort family
Aristolochiaceae

Forb


105a

Biology notes:

In rich soil of moist to wet woodlands and deciduous forests, especially on banks; sometimes found in cedar swamps. A beautiful woodland ground cover with nearly round leaves and a strong ginger fragrance. Best known for its use as an attractive, low-growing ground cover in a shaded woodland setting; wild ginger is also deer-resistant. It enjoys shaded, moist, somewhat acidic soils and it will grow only six inches in height and the large heart-shaped leaves can be eight inches in diameter. The leaves are shiny when fully opened and the stems are hairy. Unlike many early spring woodland plants, wild ginger will keep its leaves throughout the season; it will not go dormant so it is a good species to plant among spring ephemerals that do go dormant.

Beneficial insects & other wildlife support:

The reddish brown flowers attract *flies* and *beetles* as pollinating agents. The seeds attract *ants* because of their fleshy appendages; these *insects* help to disperse the seeds. The toxic foliage is not eaten by *herbivores*. It is an important food source for the *pipevine swallowtail butterfly*.


105b

Seasonal interest:

Its unusual flowers are held at ground level and are pollinated by beetles. A must plant for woodland restorations and shady perennial gardens.

105c

Common associates include:

Chokecherry; early meadow rue; zig zag goldenrod; pagoda dogwood; jack-in-the-pulpit; wild columbine; white lettuce; purple Joe-Pye weed; and false Solomon's seal.

Water conservation & erosion control:

Wild ginger is a spreading ground cover that prefers shady moist areas and performs well in all but the wettest soil sites; good border plant for woodland edges or next to access stairs on shadier slopes that have dry to mesic soils. A great choice for growing in dry to moist areas of part sun to full shade locations to stabilize soil and to slow down, spread out, and intercept stormwater.


105d

Fast facts

Height: *2 to 8″*

Width: *6 to 8″ and spreading*

Flower color: *red*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

106. Yellow avens
Geum aleppicum

Rose family
Rosaceae


106a

Biology notes:

Usually in moist places: meadows, marshy ground, along streams, thickets and swamps [coniferous and deciduous]; deciduous, mixed, and coniferous forests, especially along trails, two-track logging roads, and in clearings; ditches and roadsides. The bristly seeds can cling to the fur of mammals, feathers of birds, and clothing of humans. By this means, they are distributed into new areas.

Beneficial insects & other wildlife support:

The flowers attract *small bees* primarily, including *little carpenter bees*, *Halictid bees*, *cuckoo bees*, and *masked bees*; these *small bees* suck mostly nectar, although some of the *Halictid bees* collect pollen for their larvae. Occasionally, *Syrphid flies*, *Tachinid flies*, and other *flies* also visit the flowers. The leaves of avens are sometimes grazed by *white-tailed deer*.

106b

Seasonal interest:

The leaves of yellow avens will remain green year-round, making it a plant that will provide some interest to your garden even in winter.

106c

Common associates include:

Tussock sedge; bluejoint grass; wood betony; Riddell's goldenrod; fowl manna grass; boneset; turtlehead; orange jewelweed; whorled loosestrife; and spotted Joe-Pye weed.

Water conservation & erosion control:

Yellow avens is a spreading ground cover that thrives in wet and moist soils, so it would make a good addition to a rain garden or wetland with good drainage. Also a great border plant selection for woodland edges or next to access stairs on shadier slopes that have moist to wet soil conditions. Use to help stabilize soil and to slow down, spread out, and intercept stormwater.


106d

Height: *20 to 40″*

Width: *6 to 12″ and spreading*

Flower color: *yellow*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

107. Yellow coneflower
Ratibida pinnata

Aster family
Asteraceae

Forb


107a

Biology notes:

Very common in southern and southwestern Wisconsin, occasional elsewhere, a characteristic species of mesic to wet prairies, most prevalent in wet-mesic prairies, less frequent in xeric "goat prairies," often in degraded dry prairies, rocky fields, margins of swamps, and along railroads and roadsides; in the north isolated colonies along forest edges, roadsides, and railroad rights-of-way. The preference is full sun, mesic conditions, and a loam or clay-loam soil. However, this is a robust plant that will tolerate partial sun, moist to slightly dry conditions, and many kinds of soil. Very attractive to insect life. It grows and transplants very easily, is drought-tolerant, and makes an excellent cut flower. The entire plant is delicately constructed, and has a tendency to sway or flutter with each passing breeze.

Beneficial insects & other wildlife support:

Many kinds of *insects* visit the flowers, but especially *bees* (*bumble, honey, mining, long-horned, sweat, epeoline, cuckoo, large leaf-cutting, green metallic,* and other *Halictine bees*). Other *insect* visitors include *wasps* (*Icheumon* and *chalcid*), *flies* (*lance, Syrphid,* and *leaf miner*), *small butterflies* (*azure*), *ants*, and *beetles* (*soldier*). These *insects* suck nectar from the flowers, although the *bees* also collect pollen and some *beetles* feed on pollen. Caterpillars of *butterflies* (*silvery checkerspot*) and *moths* (*wavy-lined emerald, mint,* and *common Eupithecia*) feed on yellow coneflower. *American goldfinches, sparrows,* and *black-capped chickadees* eat the seed heads in the late fall.


107b

Seasonal interest:

Yellow coneflower has sturdy, long flower stalks and large, drooping flowers; highly rated plant for attracting beneficial insects that keep problem insect populations in balance.


107c

Common associates include:

Butterfly milkweed; rattlesnake master; spotted beebalm; wild bergamot; little bluestem; nodding onion; prairie coreopsis; Ohio spiderwort; showy sunflower; and compass plant.

Water conservation & erosion control:

Yellow coneflower is a good choice for the lakeshore edge or along a wetland fringe; the root system is rhizomatous, often forming tight clumps of plants. Also a sound selection for growing in moist to wet areas to stabilize soil and to slow down, spread out, and intercept stormwater. Claybuster too, breaking down into hard-packed soils effectively!


107d

Fast facts

Height: *36 to 60″*

Width: *18 to 24″*

Flower color: *yellow*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

108. Zig zag goldenrod
Solidago flexicaulis

Aster family
Asteraceae

Forb

108a

Biology notes:

Moist, rich forests, often in wet hollows, ravines, and banks; rocky (especially limestone) forests; shaded stream borders, swamps (cedar, ash). The preference is sun-dappled shade, moist to dry-mesic conditions in sheltered situations, and fertile loamy soil with decaying organic matter. This is one of the most shade-tolerant goldenrods. Sadly, goldenrods often get blamed for causing the dreaded hayfever. This is simply not true. Their pollen is quite large and sticky so as to better adhere to the body of visiting insects. Because of this, goldenrod pollen cannot become airborne and never makes its way into your sinuses. The true cause of hayfever is the wind pollinated ragweeds, which broadcast large amounts of lightweight pollen into the air. It cannot be stressed enough how important goldenrods are on the landscape; including them on your property provides ecosystem services well into the fall when most other plant life is shutting down.

Beneficial insects & other wildlife support:

It attracts a diversity of insects to its flowers including various *bees* (*honey, mining, sweat, small-* and *long-tongued, bumble, yellow-faced*, and *green sweat*), *wasps* (*mason, thread-waisted, paper, yellowjacket, carrot*), *flies* (*Syrphid*), *butterflies, moths* (*brown hooded owlet* and *twirler*), and *beetles* (*soldier*). Many *insects* feed on the leaves, flowers, seeds, and roots of goldenrods. These *insect feeders* include *plant bugs, stink bugs, aphids, leaf beetles*, and the caterpillars of many *moths*. These *insects* are a source of food to many *woodland songbirds* and some *upland gamebirds*. *White-tailed deer* will browse on the foliage.


108b

Seasonal interest:

Zig zag goldenrod gets its name from the way that its stems "zig zag" from leaf to leaf; it is a very shade-tolerant plant. Use under deciduous trees for emerging caterpillar cover.

Common associates include:

Wild geranium; bishop's cap; Virginia bluebells; large-leaved aster; bottlebrush grass; American spikenard; northern lady fern; silky wild rye; and wild ginger.

108c

Water conservation & erosion control:

Fast-growing ground cover for most light conditions and dry-mesic to wet ground; grow to intercept stormwater, especially in shady woods or as a border plant at woodland edges or next to access stairs. The root system is fibrous and rhizomatous; vegetative colonies of plants are sometimes formed from the spreading rhizomes.


108d

Height: *8 to 36"*

Width: *12 to 24 and spreading*

Flower color: *yellow*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

Fast facts

109. Common lady fern
Athyrium filix-femina

Wood fern family
Dryopteridaceae

Fern


109a

Biology notes:

While typically found in full to part shade in drier soils than most ferns, lady fern is also tolerant of full sun if the site can be kept moist; it grows in moist, humus-rich soils generally. The preference is dappled sunlight to moderate shade, moist to mesic conditions, and a loose loamy soil that is slightly acidic. This fern likes high humidity and some protection from the wind; common in our area of the Midwest. Native habitats include forests, woodlands, wet meadows, prairies, fields, moist thickets, swamps, marshes, and lakeshores. Its light-green color and twice-pinnate fronds with finely toothed leaflets create the illusion of a dainty fern, despite its large size. Stems are greenish-yellow to red. Highly variable in appearance over its range. Not a flowering plant but reproduces by spores. This perennial fern has deciduous leaves about 2–3½′ long that are arranged in loose tufts.

Beneficial insects & other wildlife support:

Information about floral-faunal relationships for this fern is limited. *Insects* that feed on the lady fern include the *aphids* and the larvae of *moths* and *butterflies*. *White-tailed deer* browse sparingly on the leaves of this fern during the summer. Because this fern is fairly large in size and sometimes forms colonies, it can provide significant cover for wildlife in those few areas where it is locally common.

109b

Seasonal interest:

With deeply-cut, light green fronds, it pairs nicely with wild ginger or Jack-in-the-pulpit, and all are cottontail rabbit and white-tailed deer resistant! Lady fern is a classic fern for any woodland garden.


109c

Common associates include:

Golden Alexanders; fringed sedge; large-flowered bellwort; woodland phlox; American hog peanut; blue flag iris; fringed loosestrife; and wild geranium.

Water conservation & erosion control:

Can be used as a ground cover to slow down runoff in part shade or shady conditions; it spreads slowly by underground rhizomes from fibrous roots. Division is a common propagation method for most native ferns. Divide plants in early spring for quicker spread or to create a fern glade (a small open space covered in ferns surrounded by woods).


109d

Fast facts

Height: *16 to 40″*

Width: *8 to 12″ and spreading*

Flower color: *fiddleheads emerge in early spring; the slender stem is covered in dark brown scales. Mature sori (spores) are brown*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

110. Interrupted fern
Osmunda claytoniana

Royal fern family
Osmundaceae


110a

Biology notes:

Prefers ~pH<6.8. Interrupted fern prefers moist, rich, acidic soil typical of a healthy woodland but can adapt to drier soils and nearly full sun; common native fern in our area. Habitats include rich forests and wooded slopes, moist to dry woodland edges, moist ledges, moist thickets and roadsides. On average this vase-shaped, broad-leaf fern is 2-3 feet but can reach 4 to 6 feet in consistently moist settings. The broad fronds are "interrupted" in the middle by spore-bearing leaflets which lends to the common name: interrupted. Rugged and persistent in almost any kind of soil or location. Not a flowering plant but reproduces by spores; the leaves of this fern are deciduous and they die down during the autumn.

Beneficial insects & other wildlife support:

The caterpillars of several *moths* feed on interrupted fern and other *Osmunda* spp. Because the foliage of this fern is bitter and probably toxic, it is rarely eaten by *mammals*. The large leaves provide cover for *ground-nesting birds* and other animals, particularly when large colonies of plants are formed.


110b

Seasonal interest:

Interrupted ferns hold their greenery into late fall; they can most easily be distinguished by the fruiting fertile fronds – interrupted fern's spores are in the middle of a leaf.


110c

Common associates include:

Bluebead lily; orange jewelweed; mayapple; wild ginger; sharp-lobed hepatica; Jacob's ladder; Virginia waterleaf; partrigeberry; false Solomon's seal; and northern bedstraw.

Water conservation & erosion control:

A good selection for planting along mucky lakeshore and wetland edges to intercept stormwater; temporary flooding is tolerated. A low-lying spot in a rain garden or bioswale is also a suitable site for this native fern. The root system consists of heavy rhizomes; vegetative colonies may form as a result of these offsets.


110d

Height: *20 to 40"*

Width: *24 to 36"*

Flower color: *fiddleheads in early spring; mature sori (spores) brown to black.*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

111. Ostrich fern
Matteuccia struthiopteris

Wood fern family
Dryopteridaceae


111a


111b

Biology notes:

Prefers ~pH<6.8-7.2. It grows in moist to wet, acid to neutral soils. Common in our area. Native habitats include wetlands, bottomland forests and woodlands, and moist to wet thickets. It has basket-like tufts of ostrich-plume-shaped leaves of dark rich green; spreads by numerous underground runners producing next year's plants. Roots are black, wiry, numerous, and quite deep in the ground. One of our largest ferns. Not a flowering plant but reproduces by spores; deciduous. The preference is light shade or dappled sunlight, moist to wet conditions, and a somewhat acidic soil that is peaty and/or sandy. Average moisture conditions are tolerated if this fern is watered during dry spells; the leaves are delicate and easily damaged. Wonderful lower canopy of contrast to blooming spring wildflowers.

Beneficial insects & other wildlife support:

Because ostrich fern has large leaves and often forms colonies, it can provide substantial protective cover to various kinds of wildlife where it is locally common including several *birds* and *small mammals*. Some *aphids* are known to feed on it. Ostrich fern is circumboreal in its distribution, occurring in parts of North America, Eurasia, and East Asia.

Seasonal interest:

Dark brown fertile leaves persist through winter; the unfurled sterile leaves of ostrich fern, when they first appear above the ground during the spring, are rolled and circular in shape. At this stage of development, they are referred to as 'fiddleheads' or 'croziers.' These unfurled leaves can be collected and eaten as gourmet food.

111c

Common associates include:

American figwort; starry campion; bottlebrush grass; wild columbine; golden Alexanders; zigzag goldenrod; Virginia waterfleaf; tall meadow rue; and false indigo bush.

Water conservation & erosion control:

A good selection for planting along mucky lakeshores, rivers, and wetland edges to intercept stormwater; temporary flooding is tolerated. A low-lying spot in a rain garden or bioswale is also a suitable site for this native fern. The root system consists of heavy rhizomes; vegetative colonies may form as a result of these offsets.


111d

Height: *28 to 52″*

Width: *24 to 36″ and spreading*

Flower color: *fiddleheads emerge in early spring; the mature sori (spores) are brown.*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

112. Spinulose wood fern
Dryopteris carthusiana

Wood fern family
Dryopteridaceae

112a

Biology notes:

Prefers ~pH6.8. Grows in acidic, humus-rich, moist, well-drained soils. Common throughout our area. Native habitats include rich forests and wet woodlands, moist thickets, swamps, and rocky slopes. Narrow, finely-divided, lacy fronds (leaves) appear early in spring in a vase-like cluster; the sterile fronds (leaves) are evergreen. Roots are black, wiry, and widely spreading. Not a flowering plant but reproduces by spores. The preference is light shade to dappled sunlight, moist conditions, and a slightly acidic soil containing sand or rocky material. The leaves remain in good condition throughout the summer and may persist during the winter where winters are not severe. The leaves of the toothed wood fern are more intricate and lacy in their appearance than the leaves of many other ferns because of their complex structure and strongly toothed margins.

Beneficial insects & other wildlife support:

Several *insects* feed on the developing sporangia (individual spore-bearing seedlike structures) of the toothed wood fern and other ferns. The caterpillar of a *moth* folds the leaf margins or leaf tips of wood ferns to construct a protective shelter. Generally, the foliage of wood ferns are more or less toxic to *herbivorous mammals* or *birds*, although the *white-tailed deer* and *ruffed grouse* sometimes eat their leaves, especially during the winter, when other sources of food are scarce. Provides shelter and cover for different *wildlife* including *ground-nesting birds*.


112b

Seasonal interest:

The leaves remain in good condition throughout the summer and may remain evergreen when winters are not severe.


112c

Common associates include:

Wild geranium; Jack-in-the-pulpit; white baneberry; Pensylvania sedge; Virginia waterleaf; Jacob's ladder; smooth Solomon's seal; sharp-lobed hepatica; and barren strawberry.

Water conservation & erosion control:

The root system is fibrous and rhizomatous. New leaves are occasionally produced from the rhizomes as vegetative offsets. Good for low-growing areas and intercepting stormwater in wet depressions.


112d

Height: *6 to 30″*

Width: *6 to 12″*

Flower color: *fiddleheads emerge in early spring; the mature sori (spores) are black.*

Flowering period:

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct

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Photography credits

Deborah J.G. Brown [American hazelnut (3.65892); Hill's Oak (3.46321); swamp rose (3.68432); and white oak (3.46086)], courtesy of The Morton Arboretum **2a; 8c; 21d;** and **26a**.

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John Hagstrom [American hazelnut (3.71701); American cranberry-bush (3.69960); beaked hazelnut (3.71714); nannyberry (3.69815); red maple (3.79143); swamp rose (3.78415); black cherry (3.78181)], courtesy of The Morton Arboretum **2d; 3c; 5c; 10d; 15c; 21c;** and **29a**.

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Kitty Kohout [red maple (3.38141)], courtesy of The Morton Arboretum **15b**.

Keir Morse, courtesy of Minnesota Wildflowers **46c**.

New Hampshire State Nursery **4d**.

Prairie Moon Nursery **1d; 9d; 11b; 11c; 12c; 13a; 13b; 13c; 13d; 14c; 16d; 18c; 25b; 25c; 25d; 30a; 30b; 32a; 32c; 33a; 34a; 35b; 35c; 36a; 36c; 37a; 38a; 39b; 40c; 41b; 41d; 42a; 42c; 43a; 43b; 43d; 44b; 44c; 44d; 45a; 45c; 45d; 46a; 46d; 47a; 47b; 48a; 49a; 49b; 49c; 50a; 50b; 50c; 50d; 51a; 53a; 53d; 54a; 55a; 55b; 55c; 56a; 56b; 57a; 57d; 58d; 59c; 60b; 61b; 61c; 62a; 62b; 63a; 63c; 64b; 64c; 65d; 66a; 66d; 67a; 67c; 68a; 68b; 68c; 69a; 69c; 69d; 70a; 70b; 70c; 71a; 71b; 72a; 72b; 72c; 72d; 73a; 73c; 74a; 74c; 74d; 75a; 75b; 75c; 75d; 76b; 76d; 77b; 78b; 78d; 79b; 79c; 79d; 80a; 80b; 80c; 80d; 81a; 81b; 81c; 82a; 82c; 83a; 83b; 84a; 84b; 84c; 85a; 85c; 86a; 86c; 87d; 88b; 88c; 89b; 89c; 89d; 90a; 90b; 90c; 90d; 91b; 91c; 92b; 92c; 93a; 93c; 94a; 94c; 95c; 96d; 97a; 97c; 98a; 98c; 99a; 99b; 99c; 100a; 100b; 100c; 102a; 102b; 102c; 103a; 103c; 104a; 104b; 104c; 104d; 105a; 105b; 105c; 106a; 107a; 107b; 107c; 108b; 108c; 109a; 109c; 110b; 110c; 111b; and 111c.**

Joy Zedler and Botany 670 class students (University of Wisconsin-Madison Arboretum Leaflet #15) **30c; 31b; 33d; 34c; 37d; 38c; 39c; 48c; 56d; 60c; 62d; 66c; 71c; 78c; 83d; 96c; 101c;** and **106c**.

These images were used in accordance with each photographer's use policies; I thank them for allowing their use for educational purposes. Their images are incredibly important in helping people learn about these native plants and we thank them for sharing their work with us!

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Appendices

Appendix 1:

Online native plant classes

Missouri Botanical Garden Native Plant School is a year-round series of classes taught by the horticulture staff at Shaw Nature Reserve and covers various aspects of native landscaping.
https://www.missouribotanicalgarden.org/visit/family-of-attractions/shaw-nature-reserve/gardens-gardening-at-shaw-nature-reserve/native-landscaping-for-the-home-gardener/native-plant-school.aspx

Lady Bird Johnson Wildflower Center Adult Programs – Native Plant Gardening Series & other online programs.
https://www.wildflower.org/learn/adults
https://www.wildflower.org/plants-main

Native Plant Trust – Conserving and promoting New England's native plants to ensure healthy, biologically diverse landscapes.
https://www.nativeplanttrust.org/education/

University of Wisconsin–Madison Arboretum "*Native by Design: Gardening for a Sustainable Future*" is held every September at the Arboretum. This Native Gardening Conference promotes sustainable gardening practices and use of native plants in home landscapes.
https://arboretum.wisc.edu/

F***ox Valley Area Wild Ones*** "*Wisconsin Native Plant Certification Program*" increases your knowledge and skills in botany, ecology, conservation, and uses of native vegetation in Wisconsin.
https://foxvalleyarea.wildones.org/

The National Wildlife Federation "*Garden for wildlife*" program: standing seven million people strong, Garden for Wildlife is America's largest, longest-running movement dedicated to helping local wildlife and wild spaces.
https://gardenforwildlife.com/

Appendix 2:

Wisconsin native plant groups/clubs

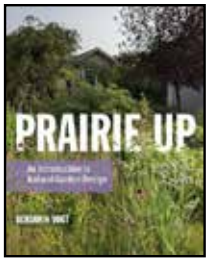
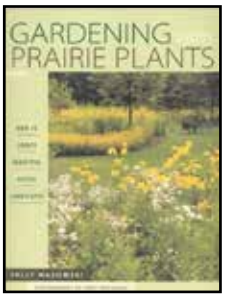
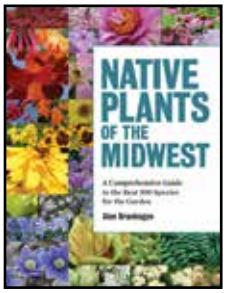
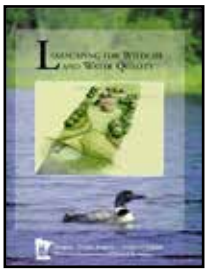
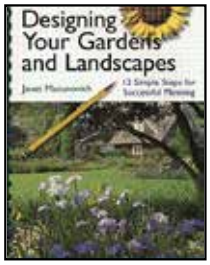
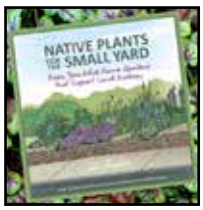
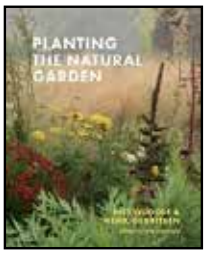
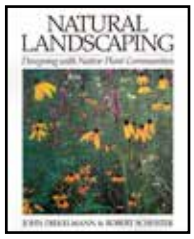
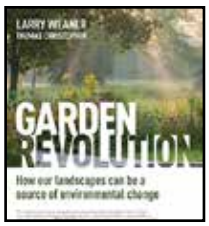
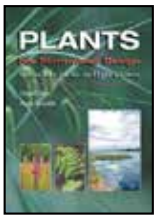
The Botanical Club of Wisconsin: the state's only organization dedicated to the study of our native flora, was founded in 1968 by John Thomson as an affiliate of the Wisconsin Academy of Sciences, Arts and Letters. The BCW serves the interests of amateur and professional botanists toward the common goal of learning more about our state's plant biodiversity.
https://sites.google.com/site/botanicalclubofwisconsin/

The Prairie Enthusiasts (TPE): is a private organization committed to the protection and management of native prairie and savanna of the Upper Midwest. We have a nonprofit status (501(c)(3)) and are a grass-roots organization operating primarily through volunteers. The Prairie Enthusiasts differ from other conservation groups in our sole dedication to the preservation of the last remaining pieces of the once vast, now endangered, prairies and savannas of the Upper Midwest through land protection and management. The Prairie Enthusiasts evolved from small prairie preservation organizations that began in the mid-1970s. We now have 11 chapters in Illinois, Minnesota, and Wisconsin.
https://www.theprairieenthusiasts.org/

The Wild Ones: promotes environmentally friendly, sound landscaping to preserve biodiversity through the preservation, restoration, and establishment of native plant communities by: providing free, educational resources and learning opportunities that are open to the public; supporting the efforts of over 90+ local Wild Ones chapters in 27 states; publishing a quarterly, award-winning journal for members featuring current native plant information and resources; and offering free, professionally designed native garden templates for multiple regions in the United States.
https://wildones.org/
https://wildones.org/chapters/chapters-in-wisconsin/

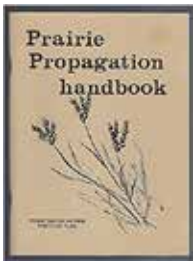
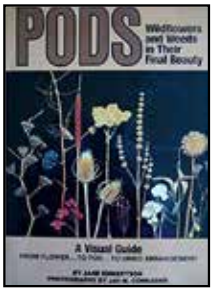
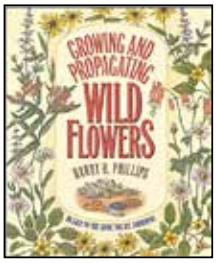
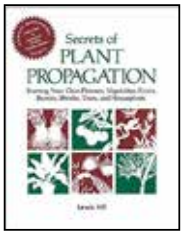
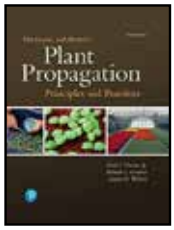
Appendix 3:

Site preparation, design, and planting resources

"Planting guides" Prairie Nursery https://www.prairienursery.com/resources-guides/gardening-guides/ *"Growing your prairie-establishing a native plant community from seed"* Prairie Moon Nursery https://www.prairiemoon.com/blog/resources-and-information/how-to-grow-a-prairie-from-seed	*"Prairie Up: An Introduction to Natural Garden Design"* Benjamin Vogt 	*"Prairie primer"* Stan Nichols, Lynn Entine, and Evelyn Howell 
"Gardening with prairie plants" Sally Wasowski 	*"Native plants of the Midwest"* Alan Branhagen 	*"Landscaping for wildlife and water quality"*. Carrol L. Henderson, Carolyn Dindorf and Fred Rozumalski 
"Designing your gardens and landscapes" Janet Macunovich 	*"Native plants for the small yard: easy, beautiful home gardens that support local ecology"* Kate Brandis 	*"Planting the natural garden"* Piet Oudolf and Henk Gerritsen 
"Natural landscaping: designing with native plants" John Diekelmann and Robert Schuster 	*"Garden revolution: how our landscapes can be a source of environmental change"* Larry Weaner and Thomas Christopher 	*"Planting in a post-wild world: designing plant communities for resilient landscapes"* Thomas Rainer and Claudia West 
"Native garden design website" Wild Ones https://nativegardendesigns.wildones.org/ 	*"Plants for stormwater design: species selection for the upper Midwest"* Daniel Shaw and Rusty Schmidt https://www.pca.state.mn.us/water/plants-stormwater-design 	*"The naturescaping workbook"* Beth O'Donnell Young 

Appendix 4:

General native seed collection and propagation resources

"The Tallgrass Prairie Center guide to seed and seedling identification in the upper Midwest" Dave Williams 	*"Prairie propagation handbook"* *[6th Edition]* Harold Rock 	*"The prairie in seed: identifying seed-bearing prairie plants in the upper Midwest"* Dave Williams 
"Pods: wildflowers and weeds in their final beauty" Jane Embertson 	*"Seed collecting from tallgrass prairies"* Tallgrass Prairie Center 	*"Basics of seed collecting" video* Dave Williams, Tallgrass Prairie Center https://www.youtube.com/watch?v=7W-3W4DW4TB0
"Growing and propagating wild flowers" Harry Phillips 	*"Secrets of plant propagation: starting your own flowers, vegetables, fruits, berries, shrubs, trees, and houseplants"* Lewis Hill 	*"Seed heads of common native plants of the tallgrass prairie"* Izabella Redlinski The Field Museum, Chicago, Illinois 
"Propagation protocol database" Native Plant Network Propagation Protocol DATABASE https://npn.rngr.net/propagation	*"Hartmann & Kester's Plant Propagation: Principles and Practices"* by Fred Davies, Robert Geneve, Sandra Wilson, Hudson Hartmann, and Dale Kester 	*"Restoring living shorelands - a webinar offered by the New England Chapter of the North American Lakes Management Society (NALMS)"*  https://www.youtube.com/watch?v=Z130xp56VTA&t=2378s

Appendix 5:

Resources for finding and buying native plant material (seeds, plant plugs, containers, etc.) and connecting with restoration consultants and landscapers that can do the installation

Wisconsin Pollinators *"Wisconsin Native Plant Nurseries" listing*
https://wisconsinpollinators.com/Garden/G_Nurseries.aspx

Wisconsin Native Plant Nurseries
Compiled by the Natural Heritage Conservation Program, Wisconsin Department of Natural Resources
https://widnr.widen.net/s/rfsbfc22w6/nh0698

Wisconsin Restoration Contractors
Compiled by the Natural Heritage Conservation Program, Wisconsin Department of Natural Resources
https://widnr.widen.net/s/ccwrwvshvh/nh0699

Appendix 6:

Some tribal perspectives around native plants to explore

"Plants used by the Great Lakes Ojibwa"
Great Lakes Indian Fish & Wildlife Commission

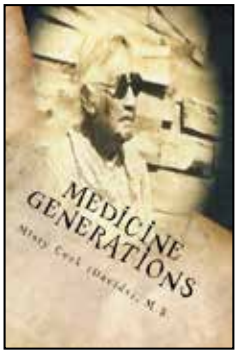
James E. Meeker, Joan E. Elias, and John A. Heim

"Dibaginjigaadeg Anishinaabe Ezhitwaad A Tribal Climate Adaptation Menu"

Great Lakes Indian Fish & Wildlife Commission

"Medicine generations: natural Native American medicines traditional to the Stockbridge-Munsee Band of Mohicans Tribe"

Mrs. Misty D. Cook (Davids)



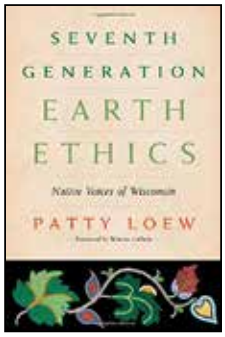
"Gikinoo'wizhiwe Onji Waaban" (Guiding for Tomorrow) or "G-WOW" Initiative"

University of Wisconsin-Extension , Great Lakes Indian Fish and Wildlife Commission, US Forest Service, National Park Service, and the Northern Great Lakes Visitor Center, Ashland, WI.

http://www.g-wow.org/en-us/default.aspx

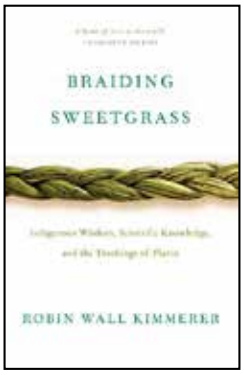
"Seventh generation Earth ethics: native voices of Wisconsin"

Patty Loew



"Braiding sweetgrass: indigenous wisdom, scientific knowledge and the teachings of plants"

Robin Wall Kimmerer

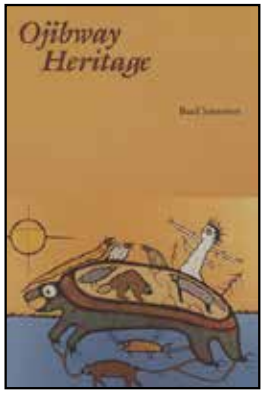


"Native people of Wisconsin"

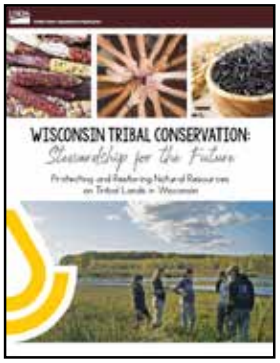
Patty Loew

"Ojibway heritage"

Basil Johnston



"Wisconsin Tribal Conservation Advisory Council (WTCAC)"



https://www.wtcac.org/

"Great Lakes Fish and Wildlife Commission (GLIFWC)"

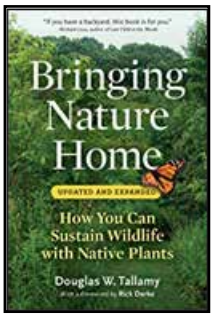
http://glifwc.org/

Appendix 7:

Why native plants?

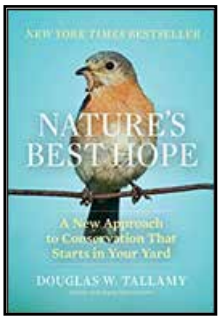
"Bringing nature home: how you can sustain wildlife with native plants "

Doug Tallamy



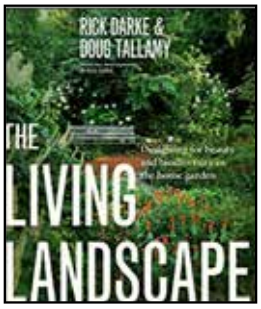
"Nature's best hope: a new approach to conservation that starts in your yard"

Doug Tallamy



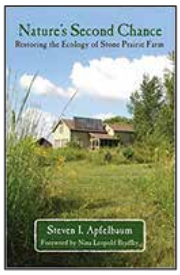
"The living landscape"

Rick Darke & Doug Tallamy



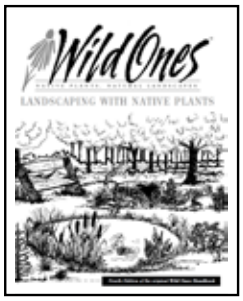
"Nature's second chance: restoring the ecology of Stone Prairie Farm"

Steven Apfelbaum



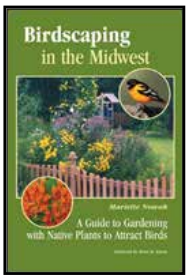
"Landscaping with native plants"

Wild Ones Handbook



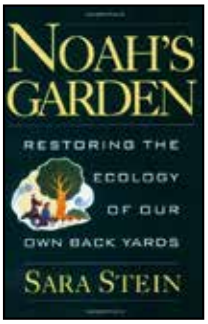
"Birdscaping in the Midwest: a guide to gardening with native plants to attract birds"

Mariette Nowak



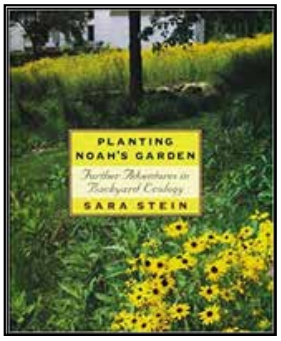
"Noah's garden: restoring the ecology of our own back yards"

Sara Stein



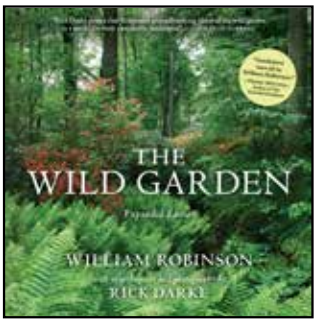
"Planting Noah's garden: further adventures in backyard ecology"

Sara Stein



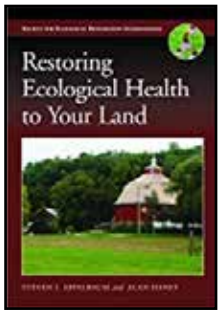
"The wild garden"

William Robinson



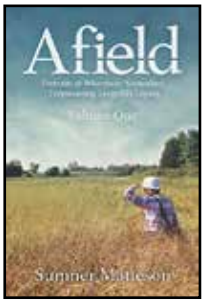
"Restoring ecological health to your land"

Steven Apfelbaum and Alan Haney



"Afield: portraits of Wisconsin naturalists, empowering Leopold's legacy"

Sumner Matteson



"A how-to natural landscaping guide"

The Conservation Foundation

https://www.theconservationfoundation.org/conservation/images/CAH%20Native%20Landscaping%20Brochure.pdf

Appendix 8:

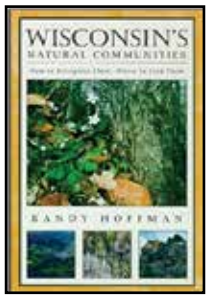
Natural plant community resources

"Wisconsin native plants: recommendations for landscaping and natural community restoration"

Natural Heritage Conservation Program, WDNR

"Wisconsin's natural communities: how to recognize them, where to find them"

Randy Hoffman



"Native landscape & ecological restoration guide"

Native Landscape & Restoration Contractor Selection Guide Working Group – September 2016

https://chicagorti.org/resources/native-landscape-ecological-restoration-guide/

"Wisconsin master naturalist program"

Extension, University of Wisconsin-Madison

WISCONSIN Master Naturalist

https://wimasternaturalist.org/

"A guide to forest communities and habitat types of northern Wisconsin"

John Kotar, Joseph A. Kovach, & Timothy L. Burger

"A guide to forest communities and habitat types of central and southern Wisconsin"

John Kotar and Timothy L. Burger

https://kemp.wisc.edu/outreach/forest-habitat-guides/

"Steps for adding native plants to your property"

Wisconsin Department of Natural Resources

https://widnr.widen.net/s/kwppnwt6mg

"Ecological restoration training" / Restoring Minnesota Ecological Restoration Training Cooperative courses

University of Minnesota

https://extension.umn.edu/courses-and-events/ecological-restoration-training-online

CERP CERTIFIED ECOLOGICAL RESTORATION PRACTITIONER PROGRAM

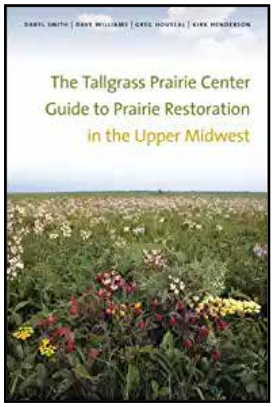
Certified Ecological Restoration Practitioner (CERP) Program

Society for Ecological Restoration

https://www.ser.org/general/custom.asp?page=CERPProgram

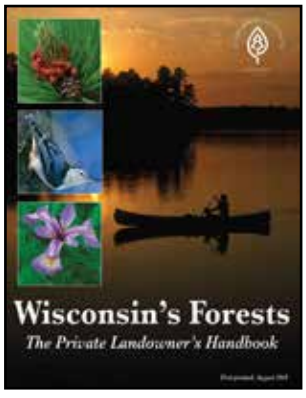
"The Tallgrass Prairie Center guide to prairie restoration in the upper Midwest"

D. Smith, D. Williams, G. Houseal, and K. Henderson



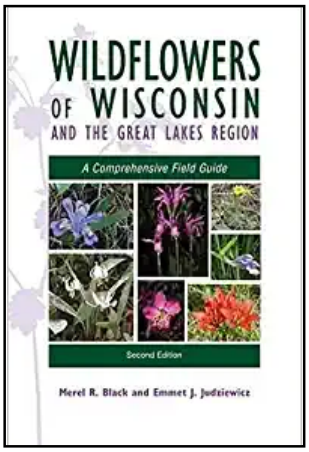
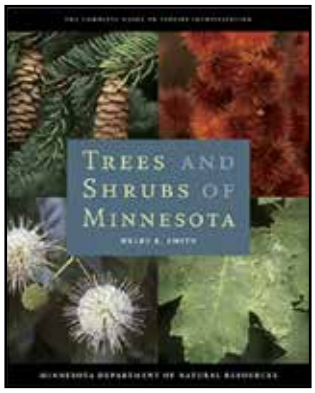
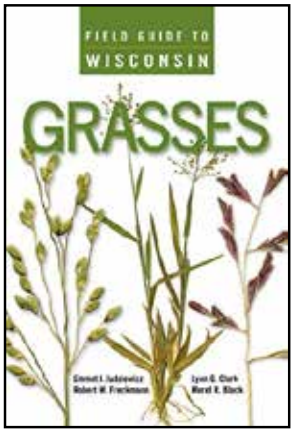
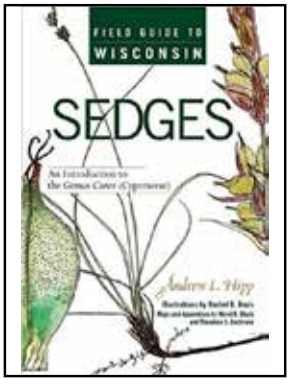
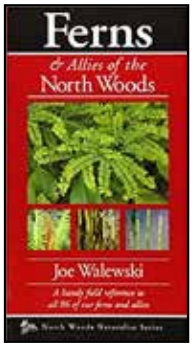
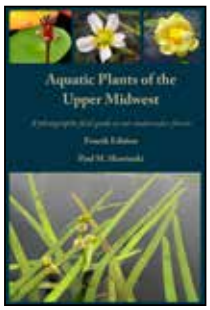
"Wisconsin's forests: the private landowner's handbook"

Sustainable Forestry Initiative Implementation Committee



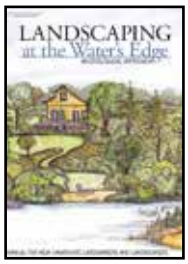
Appendix 9:

Native plants of Wisconsin identification resources

"Wildflowers of Wisconsin and the Great Lakes region: a comprehensive field guide" Merel Black and Emmet Judziewicz 	*"Trees and shrubs of Minnesota (The complete guide to species identification)"* Welby R. Smith 	*"Field guide to Wisconsin grasses"* Emmet J. Judziewicz, Robert W. Freckmann, Lynn G. Clark, and Merel R. Black 
"Field guide to Wisconsin sedges: an introduction to the genus Carex (Cyperaceae)" Andrew L. Hipp, and Rachel D. Davis, et al. 	*"Ferns & allies of the North Woods: a handy field reference to all 86 of our ferns and allies (Naturalist Series)"* Joe Walewski 	*"Online virtual flora of Wisconsin"* Wisconsin State Herbarium, UW-Madison  https://wisflora.herbarium.wisc.edu/index.php
"I-naturalist? https://www.inaturalist.org/ 	*"Wisconsin flora: an illustrated guide to the vascular plants of Wisconsin"* Steve W. Chadde 	*"Aquatic plants of the upper Midwest: a photographic field guide to our underwater forests"* Paul M. Skawinski  https://cnroutreached.asapconnected.com/#ProductDetail=12743

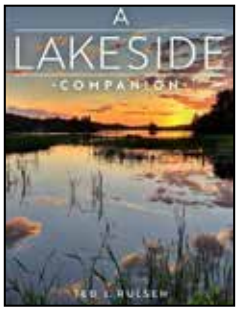
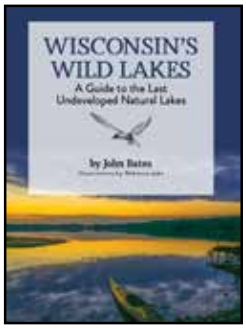
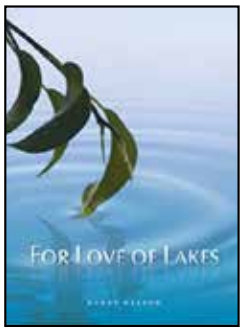
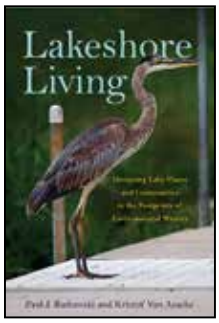
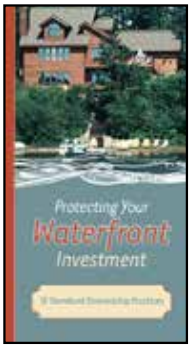
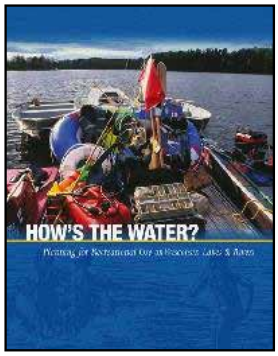
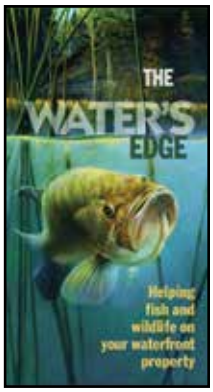
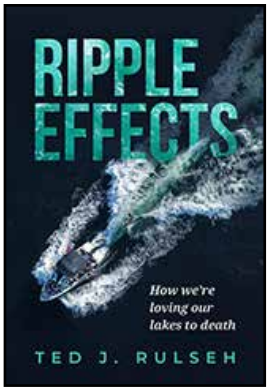
Appendix 10:

Bioengineering and erosion control resources

Shoreline Living magazine  http://midwestglaciallakes.org/resources/shorelineliving/	*Shoreline stabilization*  https://wisconsinlandwater.org/members-hub/conservation-resources/shoreline	*Streambank and shoreline erosion 580 conservation standard*  https://socwisconsin.org/wp-content/uploads/2020/01/CPS-580-Streambank-and-Shoreline-Protection.pdf
Wisconsin biology technical note 1: shoreland habitat  http://socwisconsin.org/wp-content/uploads/2012/10/Biology_Tech_Note_1.pdf	*Controlling runoff and erosion from your waterfront property*  https://www.burnettcounty.com/DocumentCenter/View/119/Controlling-Run-off-and-Erosion-from-Your-Waterfro?bidId=#:~:text=Planting%20to%20cover%20bare%20soil,reducing%20erosion%20and%20increasing%20infiltration	*Vermont bioengineering manual*  https://dec.vermont.gov/watershed/lakes-ponds/permit/encroachment/shoreline-stabilization
Landscaping at the water's edge  https://extension.unh.edu/resources/files/resource004159_rep5940.pdf	*Natural shoreline landscapes on Michigan's inland lakes*  http://www.hlca.us/pdf/Guidebook%20-%20Michigan%20Shoreline%20Landscapes.pdf	*Wildlife-friendly erosion control*  https://files.dnr.state.mn.us/eco/nongame/wildlife-friendly-erosion-control.pdf
Shoreland restoration: a growing solution  https://www.youtube.com/watch?v=p3z0ZTB87NM	*Erosion control treatment selection guide*  http://www.fs.fed.us/eng/pubs/pdf/hi_res/06771203hi.pdf	*Wisconsin Chapter-North American Stormwater and Erosion Control Association (NASECA)*  https://nasecawi.org/

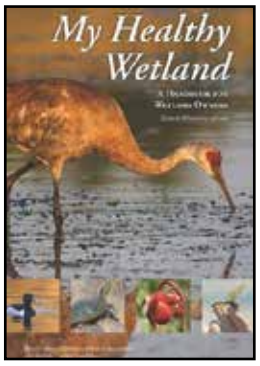
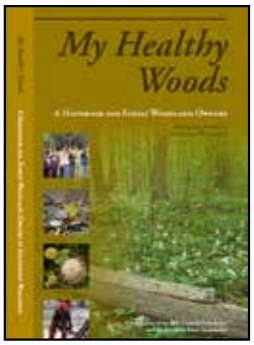
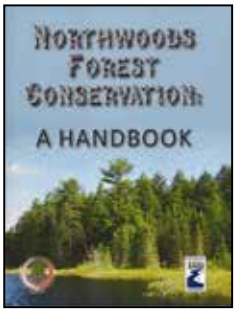
Appendix 11:

Friendly lake living books and booklets

A Lakeside Companion Ted J. Rulseh 	*Wisconsin's Wild Lakes: A guide to the last undeveloped natural lakes* John Bates 	*For Love of Lakes* Darby Nelson 
Lakeshore Living Paul J Radomski and Kristof Van Assche  https://paulradomski.com/book	*Protecting your waterfront investment: 10 shoreland Stewardship Practices*  https://cnroutreached.asapconnected.com/#ProductDetail=12773	*Shoreland property: a guide to environmentally sound stewardship*  https://archive.epa.gov/water/archive/web/pdf/property.pdf
How's the water: planning for recreational use on Wisconsin's lakes and rivers  https://cnroutreached.asapconnected.com/#ProductDetail=12746	*The water's edge: helping fish and wildlife on your waterfront property*  https://cnroutreached.asapconnected.com/#ProductDetail=13736	*Ripple effects: how we're loving our lakes to death* 

Appendix 12:

Wetlands, forests and woodlands, and river landowner resources

My healthy wetland: a handbook for wetland landowners  https://www.wisconsinwetlands.org/for-landowners/handbook/	*My healthy woods: a handbook for family woodland owners*  https://www.smokylakemaple.com/product/my-healthy-woods-a-handbook-for-family-woodland-owners/	*Creating a landowner pathway for forest health* My Wisconsin Woods https://mywisconsinwoods.org/
Gathering Waters: connecting to Wisconsin's land trusts gathering waters wisconsin's alliance for land trusts https://gatheringwaters.org/find-land-trust-near-you	*River Alliance of Wisconsin-The Wisconsin Water Agenda* WISCONSIN WATER AGENDA https://wisconsinrivers.org/wisconsin-water-agenda/	*Wetlands of Wisconsin*  https://www.wisconsinwetlands.org/wp-content/uploads/2016/10/Guide-toWisconsinWetlandTypes.pdf
Life at the water's edge: living in harmony with your backyard stream  http://cuyahogariver.org	*Northwoods forest conservation: a handbook*  https://www.northwoodalliance.org/nfcbooks	*The watershed book: a citizen's guide to healthy streams and clean water*  http://cuyahogariver.org/assets/ws-bookfinal.pdf

Appendix 13:

Seed collection timing, propagation needs, & recommended spacing

COMMON NAME	***SCIENTIFIC NAME***	***TIME TO COLLECT SEED***	***STRATIFICATION OR SCARIFICATION NEEDS***	***SPACING NEEDS***
1. Alleghany serviceberry	*Amelanchier laevis*	May-June	Requires 120 days of cold, moist stratification in a refrigerator.	12′ to 15′ apart
2. American hazelnut	*Corylus americana*	Late August through October	Germination rates and speed can be increased by scarification; sow nuts at least 3 to 4 inches deep to protect them from deer, rodents and birds.	5′ to 10′ apart
3. American highbush cranberry	*Viburnum opulus* L. subsp. *trilobum*	July-August	Remove the pulp as soon as possible after picking by stripping off the pulp by hand or very lightly in a blender with water or rubbing the berry on a sieve and floating off the pulp. Dry seeds for 1 week. Once seeds have dried begin stratification; stratify for 3 months.	10′ apart
4. Balsam fir	*Abies balsamea*	Late August to early September	Requires 28 days of cold, moist stratification in a refrigerator.	15′ to 20′ apart
5, Beaked hazelnut	*Corylus cornuta*	Late August through October	Seeds are placed in cold moist stratification for 60 to 120 days in a refrigerator.	5′ to 10′ apart
6. Black chokeberry	*Aronia melanocarpa*	Mid August to late September	90 days of cold & moist stratification in a refrigerator.	4′ to 6′ apart
7. Downy arrow-wood viburnum	*Viburnum rafinesquianum*	Early August to mid September	Remove the pulp as soon as possible after picking by stripping off the pulp by hand or very lightly in a blender with water or rubbing the berry on a sieve and floating off the pulp. Dry seeds for 1 week. No stratification treatment needed.	5′ to 7′ apart
8. Hill's oak/ northern pin oak	*Quercus ellipsoidalis*	The fruit ripens over 2 years; dispersal occurs from late August to early October	You can increase your chances for success by picking acorns from the tree as soon as their color changes from green to brown, and sowing them immediately into the grow site.	20 to 25′ apart
9. Meadowsweet	*Spiraea alba*	Early September to mid October	Seeds are very small and need exposure to direct sunlight for germination. Fruit is a cluster of 4 to 6 tiny pods (follicles), each containing a single seed. Meadowsweet seeds require light to germinate, so they perform best when surface sown. Scatter two or three seeds across the surface of the medium with approximately 1 inch of space between them. The seeds must be lightly pressed onto the surface so they are firmly anchored to the soil.	2′ to 3′ apart

Appendix 13:

Seed collection timing, propagation needs, & recommended spacing [continued]

COMMON NAME	*SCIENTIFIC NAME*	*TIME TO COLLECT SEED*	*STRATIFICATION OR SCARIFICATION NEEDS*	*SPACING NEEDS*
10. Nannyberry	*Viburnum lentago*	Late August to late September	The "perfect" flowers – having both male and female parts – are self-infertile and cross pollination is needed for reliable fruit production. Two or three shrubs are recommended for ample fruiting. Remove pulp from seed and dry out for a week; no pre-treatment needed. Spread the seed evenly on the soil surface and then cover with 1/4 inch of additional moistened soil.	10′ to 15′ apart
11. Northern bush honeysuckle	*Diervilla lonicera*	Mid July to mid September	Seeds are less than .5mm long, golden brown with a textured surface. They are very small and need exposure to direct sunlight for germination. Requires 90 days of cold, moist stratification in a refrigerator.	2′ to 3′ apart
12. Pagoda dogwood	*Cornus alternifolia*	Late July to late September	Remove the pulp as soon as possible after picking by stripping off the pulp by hand or very lightly with a blender using water or rubbing the berry on a sieve and floating off the pulp. Dry seeds for 1 week; then 60 to 90 days of cold, moist stratification in a refrigerator.	15′ to 20′ apart
13. Pasture rose	*Rosa carolina*	July to August	Remove pulp from seed and dry out for a week; then it requires 60 days of cold and moist stratification in a refrigerator.	3′ apart
14. Pussy willow	*Salix discolor*	May to June	Pussy willow is a dioecious species – male & female flowers are produced on separate plants. If fruits or seeds are desired, it is recommended that 3-5 plants be installed in fairly close proximity to ensure the presence of both sexes. Plant the seed fresh or keep it moist and cool until planting.	5′ to 10′ apart
15. Red maple	*Acer rubrum*	May to June	Easily propagated from seeds in early summer when seeds are mature; they turn light brown and begin to drop from the tree when ripe.	20′ to 25′ apart
16. Red osier dogwood	*Cornus stolonifera*	June to August	Cold stratify for 90 days in a refrigerator; live stakes of 2-foot long cuttings are also a viable option with this plant.	5′ to 10′

Appendix 13:

Seed collection timing, propagation needs, & recommended spacing [continued]

COMMON NAME	*SCIENTIFIC NAME*	*TIME TO COLLECT SEED*	*STRATIFICATION OR SCARIFICATION NEEDS*	*SPACING NEEDS*
17. River birch	*Betula nigra*	September to October	Seeds are cold stratified for 30 to 60 days in a refrigerator; germination is greater in light than dark. Can be propagated with a softwood terminal cutting as well.	20′ to 30′ apart
18. Shadblow serviceberry	*Amelanchier arborea*	May to June	Remove the pulp as soon as possible after picking by churning in a blender lightly or rubbing the berry on a sieve and floating off the pulp. Dry seeds for 1 week; then 60 to 90 days of cold and moist stratification in a refrigerator. Seeds germinate best when planted outdoors directly in fall.	12′ to 15′ apart
19. Speckled alder	*Alnus incana*	May to June	60 days cold stratification in a refrigerator.	20′ apart
20. Steeplebush	*Spiraea tomentosa*	September to October	Requires 60 days of cold storage or stratification in a refrigerator; seeds are very small so sprinkle over soil to start.	2′ apart
21. Swamp rose	*Rosa palustris*	August to October	Seeds need a cold, moist period in storage (winter) followed by a warm, moist period of storage (summer) followed by a 2nd cold, moist period of storage in a refrigerator.	3′ to 4′ apart
22. Swamp white oak	*Quercus bicolor*	September to October (of 1st year)	Plant fresh acorns directly in the soil where you what the tree to grow.	20′ to 30′ apart
23. Sweet fern	*Comptonia peregrina*	Take cuttings in early spring, April to May	Best propagated using young shoots (6 to 8 cm in length) recently emerged from rhizomes taken as cuttings from the roots. Propagation by seed is considered difficult because seeds have a complex dormancy.	2′ to 3′ apart
24. Tamarack	*Larix laricina*	September to October (of 1st year)	Requires 30 days of cold storage, moist stratification in a refrigerator; germination is greater in light than in dark.	20′ to 30′ apart
25. Virgin's bower	*Clematis virginiana*	September to October	Best planted outdoors in fall.	3′ to 4′ apart
26. White oak	*Quercus alba*	September to October (of 1st year)	Increase your chances for success by picking acorns from the tree as soon as their color changes from green to brown, and sowing them immediately into the grow site.	15′ to 20′ apart

Appendix 13:

Seed collection timing, propagation needs, & recommended spacing [continued]

COMMON NAME	*SCIENTIFIC NAME*	*TIME TO COLLECT SEED*	*STRATIFICATION OR SCARIFICATION NEEDS*	*SPACING NEEDS*
27. White spruce	*Picea glauca*	September to October	Plant directly in soil after collecting in fall.	15′ to 20′ apart
28. White snowberry	*Symphoricarpos albus*	August to September	Seeds are placed in cold moist stratification for 180 days in a refrigerator.	5′ apart
29. Wild black cherry	*Prunus serotina*	August to September	Remove the pulp as soon as possible after picking by stripping off the pulp by hand or very lightly in a blender with water or rubbing the berry on a sieve and floating off the pulp. Dry seeds for 1 week. Once seeds have dried begin stratification; put in moist, cold stratification for 120 days in a refrigerator.	15′ to 20′ apart
30. Big bluestem grass	*Andropogon gerardii*	September to October	No pre-treatment is necessary: seed should germinate upon sowing in a warm location. Does well when directly sown in field.	2′ to 3′ apart
31. Blue-joint grass	*Calamagrostis canadensis*	July to August	No pre-treatment is necessary: seed should germinate upon sowing in a warm location. Live plants can also be divided in spring.	2′ to 3′ apart
32. Bottlebrush grass	*Elymus hystrix*	August to September	No pre-treatment is necessary: seed should germinate upon sowing in a warm location.	12″ to 18″ apart
33. Canada wild rye grass	*Elymus canadensis*	September to October	No pre-treatment is necessary: seed should germinate upon sowing in a warm location.	2′ to 3′ apart
34. Common fox sedge	*Carex stipata*	July	Requires 30 to 60 days of cold, moist stratification in a refrigerator. Works well to direct sow seeds in target containers.	12″ to 18″ apart
35. Common oak sedge	*Carex pensylvanica*	June to July	Requires 60 days of cold, moist stratification in a refrigerator. To start a larger area from seed is not realistic as this seed is difficult and slow to germinate.	6″ to 10″ apart
36. Common rush	*Juncus effusus*	August to October	Requires 60 days of cold, moist stratification in a refrigerator. Seeds are small and may need direct sunlight to germinate, so sprinkle gently on top of soil when sowing it.	12″ to 24″apart
37. Dark-green bulrush	*Scirpus atrovirens*	August to September	Requires 60 days of cold, moist stratification in a refrigerator or best planted directly outdoors in fall.	1′ to 3′ apart

Appendix 13:

Seed collection timing, propagation needs, & recommended spacing [continued]

COMMON NAME	*SCIENTIFIC NAME*	*TIME TO COLLECT SEED*	*STRATIFICATION OR SCARIFICATION NEEDS*	*SPACING NEEDS*
38. Fowl manna grass	*Glyceria striata*	August to September	No pre-treatment is necessary: seed should germinate upon sowing in a warm location. The seeds are small and may need direct sunlight to germinate, so sprinkle gently on top of soil when sowing it.	1′ apart
39. Fox sedge	*Carex vulpinoidea*	July to August	Requires 60 days of cold, moist stratification in a refrigerator. The seeds are small and may need direct sunlight to germinate, so sprinkle gently on top of soil when sowing it.	10″ to 24″apart
40. Fringed sedge	*Carex crinita*	July to August	Requires 60 days of cold, moist stratification in a refrigerator.	12″ to 24″ apart
41. Indian grass	*Sorghastrum nutans*	September to October	No pre-treatment is necessary: seed should germinate upon sowing in a warm location.	18″ to 24″ apart
42. June grass	*Koeleria cristata*	July to August	No pre-treatment is necessary: the seeds are small and may need direct sunlight to germinate, so sprinkle gently on top of soil when sowing it. Seeds germinate most successfully in cool soil; direct sow seeds in late fall (after hard frost) through early spring.	10″ to 12″ apart
43. Little bluestem grass	*Schizachyrium scoparium*	September to October	No pre-treatment is necessary: seed should germinate upon sowing in a warm location.	12″ to 24″ apart
44. Long-beaked sedge	*Carex sprengelii*	June to August	Requires 60 days of cold, moist stratification in a refrigerator.	10″ to 12″ apart
45. Northern sweet grass	*Hierochloe odorata*	June to July	Requires 30 days of cold, moist stratification in a refrigerator.	12″ to 24″ apart
46. Path rush	*Juncus tenuis*	July to October	Requires 60 days of cold, moist stratification in a refrigerator. The seeds are small and may need direct sunlight to germinate, so sprinkle gently on top of soil when sowing it.	6″ to 8″ apart
47. Prairie brome grass	*Bromus kalmii*	August to October	No pre-treatment is necessary: seed should germinate upon sowing in a warm location.	12″ to 18″ apart
48. Prairie cordgrass	*Spartina pectinata*	September to October	No pre-treatment is necessary: seed should germinate upon sowing in a warm location.	12″ to 24″ apart
49. Prairie dropseed grass	*Sporobolus heterolepis*	September to October	No pre-treatment is necessary: seed should germinate upon sowing in a warm location.	12″ to 36″ apart

Appendix 13:

Seed collection timing, propagation needs, & recommended spacing [continued]

COMMON NAME	*SCIENTIFIC NAME*	*TIME TO COLLECT SEED*	*STRATIFICATION OR SCARIFICATION NEEDS*	*SPACING NEEDS*
50. Purple love grass	*Eragrostis spectabilis*	August to September	No pre-treatment is necessary: seed should germinate upon sowing in a warm location. The seeds are small and may need direct sunlight to germinate, so sprinkle gently on top of soil when sowing it.	12 to 24″ apart
51. Rattlesnake grass	*Glyceria canadensis*	August to September	No pre-treatment is necessary: seed should germinate upon sowing in a warm location. The seeds are small and may need direct sunlight to germinate, so sprinkle gently on top of soil when sowing it.	12″ to 36″ apart
52. Sand bracted sedge	*Carex muehlenbergii*	July to September	Requires 60 days of cold, moist stratification in a refrigerator.	12″ to 18″ apart
53. Side oats grama grass	*Bouteloua curtipendula*	September to October	No pre-treatment is necessary: seed should germinate upon sowing in a warm location.	10″ to 24″ apart
54. Silky wild rye grass	*Elymus villosus*	August to September	No pre-treatment is necessary: seed should germinate upon sowing in a warm location.	12″ to 24″ apart
55. Switchgrass	*Panicum virgatum*	September to October	No pre-treatment is necessary: seed should germinate upon sowing in a warm location.	24″ to 48″ apart
56. Virginia wild rye grass	*Elymus virginicus*	August to September	No pre-treatment is necessary: seed should germinate upon sowing in a warm location.	12″ to 18″ apart
57. Arrow-leaved aster	*Aster sagittifolius* aka *Symphyotrichum urophyllum*	September to October	Requires 60 days of cold, moist stratification in a refrigerator. The seeds are small and may need direct sunlight to germinate, so sprinkle gently on top of soil when sowing it.	12″ to 24″ apart
58.Big-leaved aster	*Aster macrophyllus*	September to October	Requires 60 days of cold, moist stratification in a refrigerator. The seeds are small and may need direct sunlight to germinate, so sprinkle gently on top of soil when sowing it.	12″ to 26″ apart
59. Bishop's cap/ miterwort	*Mitella diphylla*	May to July	Plant fresh seed in spring or keep moist in a refrigerator until a fall planting.	6″ to 12″ apart
60. Black-eyed Susan	*Rudbeckia hirta*	July to October	Requires 30 days of cold, moist stratification in a refrigerator.	10″ to 12″ apart
61. Blue flag iris	*Iris virginica*	July to August	Best planted outdoors in the fall or put in cold, moist stratification for 120 days in a refrigerator.	12″ to 24″ apart

Appendix 13:

Seed collection timing, propagation needs, & recommended spacing [continued]

COMMON NAME	*SCIENTIFIC NAME*	*TIME TO COLLECT SEED*	*STRATIFICATION OR SCARIFICATION NEEDS*	*SPACING NEEDS*
62. Blue vervain	*Verbena hastata*	August to October	Requires 30 days of cold, moist stratification in a refrigerator. The seeds are small and may need direct sunlight to germinate, so sprinkle gently on top of soil when sowing it.	18″ to 24″ apart
63. Boneset	*Eupatorium perfoliatum*	August to October	Requires 30 days of cold, moist stratification in a refrigerator. The seeds are small and may need direct sunlight to germinate, so sprinkle gently on top of soil when sowing it.	12″ to 24″ apart
64. Butterfly milkweed	*Asclepias tuberosa*	July to September	Requires 30 days of cold, moist stratification in a refrigerator.	12″ to 36″ apart
65. Calico aster	*Symphyotrichum lateriflorum*	September to October	No pre-treatment is necessary: seed should germinate upon sowing in a warm location.	18″ to 36″ apart
66. Common ironwood	*Vernonia fasciculata*	August to October	Requires 60 days of cold, moist stratification in a refrigerator.	24″ to 36″ apart
67. Common milkweed	*Asclepias syriaca*	August to September	Requires 30 days of cold, moist stratification in a refrigerator.	24″ to 36″ apart
68. Cup-plant	*Silphium perfoliatum*	August to October	Requires 60 days of cold, moist stratification in a refrigerator.	24″ to 48″ apart
69. Culver's root	*Veronicastrum virginicum*	August to September	No pre-treatment is necessary: seed should germinate upon sowing in a warm location. The seeds are small and need direct sunlight to germinate, so sprinkle gently on top of soil when sowing it.	24″ to 36″ apart
70. Early meadow rue	*Thalictrum dioicum*	May to June	Requires 60 days of cold, moist stratification in a refrigerator.	10″ to 12″ apart
71. False sunflower	*Heliopsis helianthoides*	August to October	Requires 30 days of cold, moist stratification in a refrigerator.	18″ to 36″ apart
72. Field pussy toes	*Antennaria neglecta*	May to June	Requires 60 days of cold, moist stratification in a refrigerator. The seeds are small and may need direct sunlight to germinate, so sprinkle gently on top of soil when sowing it.	6″ to 12″ apart
73. Fireweed	*Epilobium angustifolium* aka *Chamaenerion angustifolium*	August to September	Requires 60 days of cold, moist stratification in a refrigerator. The seeds are small and may need direct sunlight to germinate, so sprinkle gently on top of soil when sowing it.	12″ to 24″ apart
74. Flat-topped aster	*Aster umbellatus* aka *Doellingeria umbellata*	August to October	Requires 60 days of cold, moist stratification in a refrigerator.	12″ to 36″ apart

Appendix 13:

Seed collection timing, propagation needs, & recommended spacing [continued]

COMMON NAME	*SCIENTIFIC NAME*	*TIME TO COLLECT SEED*	*STRATIFICATION OR SCARIFICATION NEEDS*	*SPACING NEEDS*
75. Golden Alexanders	*Zizia aurea*	May to June	Requires 60 days of cold, moist stratification in a refrigerator. Seeds germinate most successfully in cool soil; direct sow seeds in late fall (after hard frost) through early spring. Best planted outdoors in fall.	12″ to 24″ apart
76. Grass-leaved goldenrod	*Euthamia graminifolia*	August to October	Requires 60 days of cold, moist stratification in a refrigerator. The seeds are small and may need direct sunlight to germinate, so sprinkle gently on top of soil when sowing it.	12″ to 24″ apart
77. Gray goldenrod	*Solidago nemoralis*	September to October	Requires 60 days of cold, moist stratification in a refrigerator. The seeds are small and may need direct sunlight to germinate, so sprinkle gently on top of soil when sowing it.	12″ to 24″ apart
78. Great blue lobelia	*Lobelia siphilitica*	August to October	Requires 60 days of cold, moist stratification in a refrigerator. The seeds are small and may need direct sunlight to germinate, so sprinkle gently on top of soil when sowing it.	12″ to 18″ apart
79. Great St. John's wort	*Hypericum pyramidatum*	August to September	Requires 60 days of cold, moist stratification in a refrigerator. The seeds are small and may need direct sunlight to germinate, so sprinkle gently on top of soil when sowing it.	24″ to 48″ apart
80. Harebell	*Campanula rotundifolia*	July to October	Requires 30 days of cold, moist stratification in a refrigerator. The seeds are small and may need direct sunlight to germinate, so sprinkle gently on top of soil when sowing it.	6″ to 8″ apart
81. Hoary vervain	*Verbena stricta*	July to October	Requires 60 days of cold, moist stratification in a refrigerator. The seeds are small and may need direct sunlight to germinate, so sprinkle gently on top of soil when sowing it.	10″ to 12″ apart
82. Jacob's ladder	*Polemonium reptans*	May to July	Requires 60 days of cold, moist stratification in a refrigerator.	6″ to 12″ apart
83. Marsh /red milkweed	*Asclepias incarnata*	July to September	Requires 30 days of cold, moist stratification in a refrigerator.	18″ to 36″ apart

Appendix 13:

Seed collection timing, propagation needs, & recommended spacing [continued]

COMMON NAME	*SCIENTIFIC NAME*	*TIME TO COLLECT SEED*	*STRATIFICATION OR SCARIFICATION NEEDS*	*SPACING NEEDS*
84. Meadow anemone	*Anemone canadensis*	June to July	Seeds need a cold, moist period in storage (winter) followed by a warm, moist period of storage (summer) followed by a 2nd cold, moist period of storage in a refrigerator.	6″ to 12″ apart
85. Mountain mint	*Pycnanthemum virginianum*	August to October	No pre-treatment is necessary: seed should germinate upon sowing in a warm location. The seeds are small and need direct sunlight to germinate, so sprinkle gently on top of soil when sowing it.	12″ to 18″ apart
86. New England aster	*Symphyotrichum novae-angliae*	September to October	Requires 60 days of cold, moist stratification in a refrigerator.	24″ to 36″ apart
87. Northern bedstraw	*Galium boreale*	July to August	Requires 90 days of cold, moist stratification in a refrigerator.	12″ to 18″ apart
88. Northern blue flag iris	*Iris versicolor*	June to August	Requires 120 days of cold, moist stratification in a refrigerator or best planted outdoors in fall.	12″ to 24″ apart
89. Prairie-smoke	*Geum triflorum*	May to July	Requires 60 days of cold, moist stratification in a refrigerator or best planted outdoors in fall.	6″ to 8″ apart
90. Purple giant hyssop	*Agastache scrophulariaefolia*	August to October	Requires 60 days of cold, moist stratification in a refrigerator. The seeds are small and may need direct sunlight to germinate, so sprinkle gently on top of soil when sowing it.	18″ to 24″ apart
91. Purple meadow rue	*Thalictrum dasycarpum*	July to August	Requires 60 days of cold, moist stratification in a refrigerator. Seeds need a cold, moist period in storage (winter) followed by a warm, moist period of storage (summer) followed by a 2nd cold, moist period of storage in a refrigerator.	24″ to 36″ apart
92. Rough blazing star	*Liatris aspera*	August to October	Requires 60 days of cold, moist stratification in a refrigerator.	10″ to 18″ apart
93. Showy goldenrod	*Solidago speciosa*	October to November	Requires 60 days of cold, moist stratification in a refrigerator. The seeds are small and may need direct sunlight to germinate, so sprinkle gently on top of soil when sowing it.	12″ to 24″ apart
95. Sky-blue aster	*Symphyotrichum oolentangiense*		No pre-treatment is necessary: the seeds are small and may need direct sunlight to germinate, so sprinkle gently on top of soil when sowing it. Seeds germinate most successfully in cool soil; direct sow seeds in late fall (after hard frost) through early spring.	12″ to 24″ apart

Appendix 13:

Seed collection timing, propagation needs, & recommended spacing [continued]

COMMON NAME	*SCIENTIFIC NAME*	*TIME TO COLLECT SEED*	*STRATIFICATION OR SCARIFICATION NEEDS*	*SPACING NEEDS*
94. Sky-blue aster	*Symphyotrichum oolentangiense*	September to October	No pre-treatment is necessary; seeds need a cold, moist period in storage (winter) followed by a warm, moist period of storage (summer) followed by a 2nd cold, moist period of storage in a refrigerator.	12″ to 24″ apart
95. Smooth blue aster	*Symphyotrichum laeve*	September to October	No pre-treatment is necessary: seed should germinate upon sowing in a warm location.	18″ to 24″ apart
96. Sneezeweed	*Helenium autumnale*	September to November	No pre-treatment is necessary: seed should germinate upon sowing in a warm location. The seeds are small and may need direct sunlight to germinate, so sprinkle gently on top of soil when sowing it.	18″ to 24″ apart
97. Spikenard	*Aralia racemosa*	August to September	Requires 60 days of cold, moist stratification in a refrigerator; best planted outdoors in the fall.	36″ to 48″ apart
98. Spotted Joe-Pye weed	*Eutrochium maculatum*	August to October	Requires 30 days of cold, moist stratification in a refrigerator. The seeds are small and need direct sunlight to germinate, so sprinkle gently on top of soil when sowing it.	18″ to 48″ apart
99. Stiff goldenrod	*Solidago rigida* aka *Oligoneuron rigidum*	September to November	Requires 60 days of cold, moist stratification in a refrigerator.	12″ to 24″ apart
100. Turtlehead	*Chelone glabra*	August to October	Requires 90 days of cold, moist stratification in a refrigerator; best planted outdoors in the fall.	12″ to 24″ apart
101. Water horehound	*Lycopus americanus*	August to October	No pre-treatment is necessary: seed should germinate upon sowing in a warm location. The seeds are small and may need direct sunlight to germinate, so sprinkle gently on top of soil when sowing it.	12″ to 36″ apart
102. Wild bergamot	*Monarda fistulosa*	August to October	No pre-treatment is necessary: seed should germinate upon sowing in a warm location.	12″ to 36″ apart
103. Wild columbine	*Aquilegia canadensis*	May to August	Requires 90 days of cold, moist stratification in a refrigerator; best planted outdoors in the fall.	10″ to 18″ apart
104. Wild geranium	*Geranium maculatum*	May to August	Requires 60 days of cold, moist stratification in a refrigerator; best planted outdoors in the fall.	10″ to 12″ apart

Appendix 13:

Seed collection timing, propagation needs, & recommended spacing [continued]

COMMON NAME	*SCIENTIFIC NAME*	*TIME TO COLLECT SEED*	*STRATIFICATION OR SCARIFICATION NEEDS*	*SPACING NEEDS*
105. Wild ginger	*Asarum canadense*	May to June	Plant fresh seed or keep moist: refrigerate until planting or starting other treatment. In order to germinate, seeds need a warm, moist period (summer) followed by a cold, moist period (winter): sow outdoors in spring and allow one full year for germination. To artificially start this stratification process, mix seeds with horticultural-use medium, place mixture in a labeled, sealed, plastic bag and store in a warm place (about 80°F) for 60–90 days. Then place in your refrigerator (33–40°F) for 60–90 days before sowing.	6″ to 12″ apart
106. Yellow avens	*Geum aleppicum*	July to September	Requires 60 days of cold, moist stratification in a refrigerator.	12″ to 24″ apart
107. Yellow coneflower	*Ratibida pinnata*	August to October	Requires 30 days of cold, moist stratification in a refrigerator.	18″ to 24″ apart
108. Zig zag goldenrod	*Solidago flexicaulis*	August to October	Requires 30 days of cold, moist stratification in a refrigerator.	12″ to 24″ apart
109. Common lady fern	*Athyrium filix-femina*	July to August	The mature sori or cluster of spores are brown when ripe. Direct sow the yellow spores outdoors on soil surface. You may choose to divide plants in early spring for quicker spread.	6″ to 12″ apart
110. Interrupted fern	*Osmunda claytoniana*	July to August	Withering spore capsules turn brown on the leafs; direct sow spores outdoors on soil surface. The broad fronds are "interrupted" in the middle by spore-bearing leaflets.	12″ to 36″ apart
111. Ostrich fern	*Matteuccia struthiopteris*	July to September	25 or more pairs of hard tubular-shaped "pods" contain the spores in somewhat bead-like structures. These fertile fronds are initially green but turn dark brown with maturity. Direct sow spores outdoors on soil surface. You may choose to divide plants in early spring for quicker spread.	18″ to 24″ apart
112. Spinulose wood fern	*Dryopteris carthusiana*	July to August	The sori (group of spores) are found on the underside of the leaf. Direct sow spores outdoors on soil surface. You may choose to divide plants in early spring for quicker spread.	12″ to 36″ apart

"What we contemplate here is more than ecological restoration; it is the restoration of relationship between plants and people. Scientists have made a dent in understanding how to put ecosystems back together, but our experiments focus on soil pH and hydrology—matter, to the exclusion of spirit. We might look to the Thanksgiving Address for guidance on weaving the two. We are dreaming of a time when the land might give thanks for the people."

~ Robin Wall Kimmerer
Braiding Sweetgrass