SECTION 3

Inland Fresh Meadows

III. Inland Fresh Meadows

Inland fresh meadows are essentially closed wetland communities (nearly 100 percent vegetative cover) composed of perennial forb, grass and sedge mixtures growing on seasonally wet to saturated soils. Woody plants are not dominant and standing water is usually only present during floods and snowmelt. Inland fresh meadows often form a transition zone between aquatic communities and uplands. Peat/muck soils indicate permanent saturation and anaerobic conditions while communities occurring on hydric mineral soils are frequently saturated for long duration resulting in at least periodic anaerobic conditions.

Plants occurring in inland fresh meadows include species found in other communities such as the annuals of seasonally flooded basins, emergent aquatics of marshes, and invading shrubs or trees, which are present as scattered, small individuals. The forbs, grasses and sedges of inland fresh meadows can tolerate inundation to a greater degree than most woody species, but they suffer if inundation during the growing season lasts for more than one or two weeks. Because these wetlands lack standing water during most of the growing season, they are often called "dry marshes."

Inland fresh meadows are particularly important for their water quality functions. These include trapping sediments and assimilating nutrients. Inland fresh meadows are also important for stormwater and flood-water retention. Wildlife habitat is provided for many species including sandhill crane, ring-necked pheasant, common snipe, sedge wren, small mammals and white-tailed deer. The abundance of small mammals supports mink, fox and raptors such as the northern harrier. The composites found in these meadows are an important autumn and winter food source for songbirds. Inland fresh meadows are often used for pasture or cut for "marsh hay."

Inland fresh meadows include two of the rarest wetland plant communities in our area – calcareous fen and wet/wet-mesic prairie – both of which support a disproportionate number of rare, threatened and endangered species.

III.A. Sedge Meadows

Sedge meadows are dominated by the sedges (Cyperaceae) growing on saturated soils. Most of the sedges present are in the genus *Carex*, but also present are those of the genera *Eleocharis* (spike-rushes), *Scirpus* (bulrushes) and *Cyperus* (nut-grasses). Grasses (Gramineae), especially Canada blue-joint grass (*Calamagrostis canadensis*), and true rushes (*Juncus* spp.), can also be present. Forb species can be sparse to diverse.

Soils are usually composed of peat or muck, but can also be composed of shallow muck over mineral soils, or entirely mineral soils. Some sedges, especially *Carex stricta*, form hummocks—also called tussocks—that are accentuated by grazing and frost action. Hummocks are composed of undecayed fibrous roots and rhizomes. Sedge meadows often grade into shallow marshes, calcareous fens, wet prairies and bogs.

Sedges of the genus *Carex* are mostly long-lived and competitive grass-like plants that have three-ranked leaves and triangular, solid stems. These traits are also shared with some species of bulrushes (e.g., *Schoenoplectus*) and other genera of the sedge family. This is opposed to the two-ranked leaves and cylindrical, hollow stems of grasses, or the apparently "leafless," cylindrical, solid stems of rushes (*Juncus*). The diagnostic character of *Carex* that distinguishes them from all other plants is the **perigynium**, a papery flask- or sac-like structure that encloses the pistil, which at maturity develops into a nutlet. Mature perigynia are usually required for positive identification of the species.

There are over 150 species of *Carex* in Minnesota and Wisconsin, many of which are found in wetland habitats. Because they have specific habitat requirements, *Carex* species are good indicators of environmental conditions such as soil and water chemistry, water levels, shading, silt deposition and floating mats.

The fertile organic soils associated with sedge meadows have traditionally been used for muck farming. The lowering of water tables through artificial drainage is suspected of causing shrub invasion in some of our remaining sedge meadows.

Curtis (1971) described floristic differences between sedge meadows located north of the tension zone compared to those south of the tension zone. He refers to these communities as northern sedge meadows and southern sedge meadows, respectively. See pages 580-583 in Curtis for a comparison of species.

In this third edition, we have added "sedge mats" to the key to wetland plant communities. This was in response to field practitioners who asked where floating mats composed of sedges (e.g., *Carex lasiocarpa*, *C. oligosperma*) would best fit given the plant communities of this guide.

VEGETATION: The opposing page illustrates two seasonal views of the same sedge meadow community. Hummock sedge (*Carex stricta*) is the dominant while Canada blue-joint grass (*Calamagrostis canadensis*) and lake sedge (*Carex lacustris*) are sub-dominant. Non-dominant species include fowl bluegrass (*Poa palustris*), fringed brome grass (*Bromus ciliatus*), woolly sedge (*Carex pellita*), marsh fern (*Thelypteris palustris*), joe-pye weed (*Eupatorium maculatum*), boneset (*Eupatorium perfoliatum*), sawtooth sunflower (*Helianthus grosseserratus*), swamp thistle (*Cirsium muticum*), giant goldenrod (*Solidago gigantea*), flat-top aster (*Doellingeria umbellata*), swamp aster (*Symphyotrichum firmum*), New England aster (*Symphyotrichum novae-angliae)*, ironweed (*Vernonia fasciculata*), Michigan lily (*Lilium michiganense*), swamp milkweed (*Asclepias incarnata*), blue vervain (*Verbena hastata*), turtlehead (*Chelone glabra*), cowbane (*Oxypolis rigidior*), angelica (*Angelica atropurpurea*), wild mint (*Mentha arvensis*), common bugleweed (*Lycopus americanus*), northern bugleweed (*Lycopus uniflorus*), marsh hedge-nettle (*Stachys palustris*), marsh skullcap (*Scutellaria galericulata*), jewelweed (*Impatiens capensis*), marsh marigold (*Caltha palustris*), tall meadowrue (*Thalictrum dasycarpum*) and broad-leaved cattail (*Typha latifolia*). Small, scattered individuals of beaked willow (*Salix bebbiana*) and red-osier dogwood (*Cornus sericea*) are present.

SOILS: Seelyeville muck (Typic Haplosaprists), sloping, with a muck layer greater than 51 inches in thickness. Landscape position is the toe of the bluff of the Minnesota River valley.

HYDROLOGY: Groundwater seepages creating saturated soils throughout the growing season.

LOCATION: Fort Snelling State Park, Dakota County, Minnesota.

May

© Photos by Steve D. Eggers

August

Sedge Meadows

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VEGETATION: This sedge meadow is dominated by common yellow lake sedge (*Carex utriculata*). Also present are tussock sedge (*Carex stricta*), Buxbaum's sedge (*Carex buxbaumii*), marsh fern (*Thelypteris palustris*), crested shield-fern (*Dryopteris cristata*), sensitive fern (*Onoclea sensibilis*), cinnamon fern (*Osmunda cinnamomea*), joe-pye weed (*Eupatorium maculatum*), boneset (*Eupatorium perfoliatum*), arrowleaf tear-thumb (*Persicaria sagittata*), linear leaf willow-herb (*Epilobium leptophyllum*), green bulrush (*Scirpus atrovirens*), bulblet-bearing water hemlock (*Cicuta bulbifera*), Canada blue-joint grass (*Calamagrostis canadensis*), rattlesnake manna grass (*Glyceria canadensis*), steeplebush (*Spiraea tomentosa*), meadowsweet (*Spiraea alba*), Kalm's St. John's wort (*Hypericum kalmianum*), swamp candles (*Lysimachia terrestris*), grass-leaved goldenrod (*Euthamia graminifolia*), giant goldenrod (*Solidago gigantea*), northern bugleweed (*Lycopus uniflorus*), marsh St. John's wort (*Triadenum fraseri*) and slender willow (*Salix petiolaris*).

SOILS: Dawsil mucky peat (Terric Haplosaprists), very-poorly drained soils with 16 to 51 inches of mucky peat over sand.

HYDROLOGY: Dawsil soils have a seasonal high water table at the surface to 12 inches below the surface during September to June of most years.

LOCATION: Black River State Forest, South Unit, Jackson County, Wisconsin.

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VEGETATION: This sedge meadow is dominated by hummock sedge (*Carex stricta*). Other species include lake sedge (*Carex lacustris*), Canada blue-joint grass (*Calamagrostis canadensis*), fowl bluegrass (*Poa palustris*), redtop (*Agrostis gigantea*), woolgrass (*Scirpus cyperinus*), marsh milkweed (*Asclepias incarnata*), arrow-leaved tearthumb *(Persicaria sagittata*), water pepper (*Persicaria hydropiper*), common bugleweed (*Lycopus americanus*), blue vervain (*Verbena hastata*), redstem aster (*Symphyotrichum puniceum*), sawtooth sunflower (*Helianthus grosseserratus*), giant goldenrod (*Solidago gigantea*), boneset (*Eupatorium perfoliatum*), beggarticks (*Bidens* sp.) and joe-pye weed (*Eupatorium maculatum*).

SOILS: Clyde silty clay loam (Typic Endoaquolls*)*, a poorly-drained mineral soil found in shallow depressions and drainageways on till plains. Landscape position of the example shown above is a depressional area in a gently rolling till plain.

HYDROLOGY: This sedge meadow is supported by groundwater and surface water runoff. Clyde soils are frequently saturated at the soil surface to 12 inches below the surface during the wettest part of the growing season.

LOCATION: Cartney Wildlife Management Area, Mower County, Minnesota.

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HUMMOCK SEDGE

(*Carex stricta* Lam.)

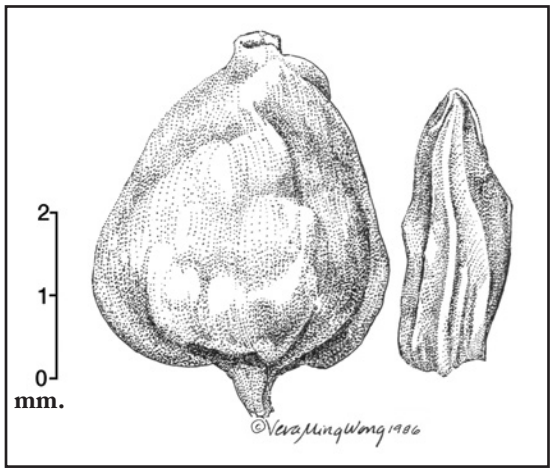
SEDGE FAMILY (Cyperaceae) **C of C:** Native (5 MN)(7 WI) **IND. STATUS:** OBL

FIELD CHARACTERISTICS: A perennial, clonal sedge with stems about 40-100 cm. tall and which usually exceed the leaves. Mature leaves are 2-6 mm. wide, slender, green and M-shaped. Leaves and stems are extremely rough on the edges. Forms large tufts or hummocks to 30 cm. tall and as wide, although the authors have seen hummocks as tall as 75 cm. Flowering stems arise laterally. The lowest leaves are reduced to bladeless sheaths. Basal sheaths disintegrate into two rows of fibers on each side of a central fiber (pinnate)[see photo on page 112] and tend to be reddish-brown in color. The beakless perigynia are 2-3 mm. long, flat to flattened-convex, widest below the middle section of the body, and taper to the tip. Two stigmas are present and nutlets are lens-shaped. Pincushion-like young shoots erupt in late summer, persist through the winter and grow quickly in early spring into a tuft of bright green leaves.

Aquatic sedge (*Carex aquatilis*)[page 115] is very similar to hummock sedge. However, *C. aquatilis* lacks basal sheaths with two rows of fibers on each side of a central fiber; the flowering stems arise centrally; lowest leaves have blades; mature leaves tend to be blue-green; and stems do not form pincushion-like young shoots that persist through the winter.

ECOLOGICAL NOTES: Hummock, or tussock, sedge is the characteristic sedge of Minnesota and Wisconsin sedge meadows. It is also common in shrub-carrs and calcareous fens. The hummocks may persist for decades even when pastured. Stands of hummock sedge provide excellent habitat for rails and snipe.

SOURCE: Gleason and Cronquist (1991); and Swink and Wilhelm (1994).



Perigynium and scale.

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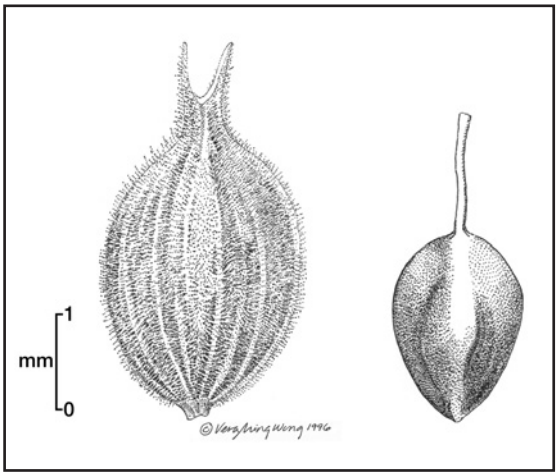
Hummock Sedge
(*Carex stricta*)



Perigynium and nutlet.

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WOOLLY SEDGE

(*Carex pellita* Willd.)

SEDGE FAMILY (Cyperaceae) **C of C:** Native (4) **IND. STATUS:** OBL

SYNONYM: *Carex lanuginosa* Michx.

FIELD CHARACTERISTICS: A perennial mat-forming (colonial) sedge with stems about 50-100 cm. tall. Leaves are glabrous and folded along the midrib. Leaf blades have revolute margins and are 2.5-4.5 mm. wide. The perigynia are 2.8-4.3 mm. long and densely pubescent. The beak of the perigynia is less than half of the body length with bidentate teeth up to 0.5(0.7) mm. long.

Woolly sedge resembles wire-grass sedge (*C. lasiocarpa*)[page 257], but the latter has inrolled, wire-like leaves that are less than 2 mm. wide (i.e., wire-like).

ECOLOGICAL NOTES: Woolly sedge is characteristic of minerotrophic sedge meadows, sandy to marly flats, and shorelines. It also occurs in disturbed sites including abandoned agricultural lands and wetland restoration sites.

SOURCE: Gleason and Cronquist (1991); Swink and Wilhelm (1994); and Voss (1972).

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BEBB'S SEDGE

(*Carex bebbii* (L.H. Bailey) Fern.)

SEDGE FAMILY (Cyperaceae) **C of C:** Native (5 MN)(4 WI) **IND. STATUS:** OBL

FIELD CHARACTERISTICS: A loose to densely clumped, perennial sedge with stems up to about 70 cm. tall. Triangular stems usually exceed the leaf blades in height. Mature leaves are up to about 4 mm. wide. Ascending to slightly spreading, tan perigynia are crowded into stiff and dense spikelets. The oval, scale-like perigynia are less than 3.6 mm. long and under 2 mm. wide. They are lightly convex and nerveless (except at the base) on one side, thin winged, and taper to a shallow toothed beak.

ECOLOGICAL NOTES: Bebb's sedge is a common sedge that prefers the wet, calcareous soils of all types of inland fresh meadows as well as kettle hole marsh edges.

SOURCE: Gleason and Cronquist (1991); Swink and Wilhelm (1994); and Voss (1972).

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CANADA BLUE-JOINT GRASS

(*Calamagrostis canadensis* (Michx.) Beauv.)

GRASS FAMILY (Gramineae or Poaceae) **C of C:** Native (4 MN)(5 WI) **IND. STATUS:** OBL

FIELD CHARACTERISTICS: A perennial grass 50-150 cm. high. Many very slender stems arise from small rhizomes. The sheaths are usually hairless. The slender leaves (2-4 mm. wide) tend to be flat. A distinct, thin, dry, papery structure extends beyond the summit of the sheath (the ligule). Nodes often have a blue to reddish-purple color. The inflorescence is somewhat nodding, open or fairly dense, and branched with stalked spikelets. The branches are often bent in one direction giving the inflorescence a flag-like appearance. The membrane-like lemmas range from three-quarters to as long as the glumes. A single, short, delicate and straight awn arises from or near the middle of the lemma. Also, a tuft of hair (use a 10-15x lens) is present at the base of each lemma, making the spikelets look slightly fuzzy (see drawing on following page).

ECOLOGICAL NOTES: Canada blue-joint grass is the most common native, wetland grass in Minnesota and Wisconsin. It frequently occurs as a sub-dominant in sedge meadows and is the most frequent grass associate of the sedges. It can be dominant in wet to wet-mesic prairies and fresh (wet) meadows and occurs in shallow marshes as well. In and north of the vegetation tension zone, Canada blue-joint grass is a characteristic dominant in the groundlayer of hardwood swamps and alder thickets. This grass stands up well in winter making it an important wildlife habitat.

SOURCE: Gleason and Cronquist (1991); and Swink and Wilhelm (1994).

Canada Blue-Joint Grass

(*Calamagrostis canadensis*)

Illustration is from Hitchcock (1950).

FRINGED BROME GRASS

(*Bromus ciliatus* L.)

GRASS FAMILY (Gramineae or Poaceae) **C of C:** Native (7) **IND. STATUS:** FACW

FIELD CHARACTERISTICS: A perennial grass 60-120 cm. high. Stems are solitary or few, smooth (lack hairs), although the nodes may be hairy. The yellowish-green leaf blades are 4-10 mm. wide. Ligules are 0.3-1.0 mm. long, slightly shorter than the similar *Bromus kalmii* (0.5-2.0 mm. long). The inflorescence is an open panicle 10-20 cm. long with drooping or spreading branches generally to one side of the stem. Several spikelets arise from compound branches. The glumes are smooth and hairless. The first glume is single nerved (3-nerved in *B. kalmii*). Lemmas are 10-13 mm. long and short-awned with a dense, long-hairy "fringe" near the margin, especially toward the base. The remainder of the lemma is smooth and hairless or nearly so. The slightly shorter lemmas (8-10 mm. long) of the similar *B. kalmii* have silky hairs up to 1 mm. or more covering the entire surface.

ECOLOGICAL NOTES: Fringed brome grass is frequently seen in sedge meadows and calcareous fens, but the authors have not observed this grass as a major dominant species. It also occurs in wet prairies, along the edges of bogs, on wet shores, and openings in hardwood swamps.

SOURCE: Crow and Hellquist (2000); Fassett (1951); Gleason and Cronquist (1991); Swink and Wilhelm (1994); and Voss (1972).

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WOOLGRASS

(*Scirpus cyperinus* (L.) Kunth)

SEDGE FAMILY (Cyperaceae) **C of C:** Native (3 MN)(4 WI) **IND. STATUS:** OBL

FIELD CHARACTERISTICS: A perennial, densely tufted sedge with stems up to 2 m. high. The sturdy stems are smooth and more or less round with about 10 stem leaves above a fountain of large, slender, basal leaves. Sheaths are brownish or green and not tinged with red. The terminal inflorescence is subtended by two or more unequally spreading, modified leaves. Several to many rays of the inflorescence ascend from a fountain-like base and contain one to many tiny spikelets in small, compact clusters at the apex of the stem. Spikelets are ovate, 3-8 mm. long and 2-3 mm. wide. Many brown, woolly bristles surround the nutlets, giving the cluster of spikelets a woolly appearance. Nutlets are a flattened three-angled shape and 0.5-1 mm. long with a short beak.

ECOLOGICAL NOTES: Woolgrass is actually a member of the sedge family and is common in sedge meadows, particularly in and north of the vegetation tension zone where it can be a dominant species. It is also frequent in bogs, alder thickets, shallow marshes and roadside ditches.

SOURCE: Gleason and Cronquist (1991); and Swink and Wilhelm (1994).

GREEN BULRUSH

(*Scirpus atrovirens* Willd.)

SEDGE FAMILY (Cyperaceae) **C of C:** Native (4 MN)(3 WI) **IND. STATUS:** OBL

FIELD CHARACTERISTICS: A perennial sedge with stems up to 1.5 m. high. The sturdy stems are roundly triangular with up to 10 stem leaves. Leaves are broad (1-2 cm.), green and M-shaped. Sheaths are brownish or green and not tinged with red. The terminal inflorescence is subtended by two or more conspicuous, spreading, modified leaves with flat blades. The inflorescence contains numerous spikelets crowded into a dense, nearly spherical head on rays that angle out in different directions. Spikelets are 2-8 mm. long and 1-3 mm. wide. Nutlets are a compressed three-angled shape and 1 mm. long with a short beak of 0.2 mm.

ECOLOGICAL NOTES: Green bulrush is a common, short-lived pioneer that is typically found in sedge meadows, but is also present in shrub-carrs, alder thickets and fresh (wet) meadows. It seems to increase with disturbance to peat/muck soils and often invades dredged material sites. It is a frequent colonizer of wetland restoration sites. Seeds have been known to remain viable for at least 40 years.

SOURCE: Gleason and Cronquist (1991); and Swink and Wilhelm (1994).

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MARSH MILKWEED

(*Asclepias incarnata* L.)

MILKWEED FAMILY (Asclepiadaceae) **C of C:** Native (4 MN)(5 WI) **IND. STATUS:** OBL

FIELD CHARACTERISTICS: A perennial herb usually up to 1.4 m. high. The erect stems have opposite, lance-shaped to linear to oblong leaves on short leaf stalks. Leaves are 6-15 cm. long and 1-5 cm. wide. The base of the leaf abruptly narrows to a pointed, rounded, or nearly heart-shaped base. Cut stems and leaves exude a milky juice. The inflorescence occurs as several flat umbels 2-3 cm. in diameter with rose-pink to purple-red flowers that are 4-6 mm. long. Fruit is a long, narrow, smooth pod. In flower June-August.

ECOLOGICAL NOTES: Marsh or swamp milkweed is common in several wetland communities in addition to sedge meadows, including shallow marshes. Curtis (1971) notes a higher presence in southern sedge meadows than in northern sedge meadows. Many birds use the fibers from old stems for nest building. Monarch butterfly larvae feed on the leaves.

SOURCE: Gleason and Cronquist (1991); and Swink and Wilhelm (1994).

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JOE-PYE WEED

(*Eupatorium maculatum* L.)

ASTER FAMILY (Compositae or Asteraceae) **C of C:** Native (4) **IND. STATUS:** OBL

FIELD CHARACTERISTICS: A tall, perennial herb 60-200 cm. high with one to several stems. Leaves are in whorls of 4's and 5's around a purple-spotted stem. The lance-shaped leaves are 5-20 cm. long and 2-7 cm. wide, narrowed to the leaf stalk, serrate and seldom triple-nerved. Stems usually lack a white waxy bloom. The flattish inflorescence consists solely of disc flowers (lacks ray flowers). Between 9-22 pink to purple flowers occur in each head. Fruit is a black achene 2-4 mm. long with long bristles (pappus). In bloom July-September.

ECOLOGICAL NOTES: Joe-pye weed is a very common composite of sedge meadows and shrub-carrs, particularly on calcareous soils. It is also present in fresh (wet) meadows, calcareous fens and shallow marshes. Joe-pye weed often occurs with a related, equally common species, boneset (*E. perfoliatum*), which has white flowers and opposite leaves joined around the stem.

SOURCE: Gleason and Cronquist (1991); and Swink and Wilhelm (1994).

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Stem appears to pierce the leaves (perfoliate).

BONESET

(*Eupatorium perfoliatum* L.)

ASTER FAMILY (Compositae or Asteraceae) **IND. STATUS:** FACW

C of C: Native (4 MN)(6 WI)

FIELD CHARACTERISTICS: A perennial herb 40-150 cm. high. Stem leaves are opposite and grown together around the stem. Stems and leaves are coarsely hairy. Leaves are broadly lance-like and 6-20 cm. long by 1.5-5 cm. wide. The flattish inflorescence consists solely of disc flowers (lacks ray flowers). Between 9-23 white flowers occur in each head. Fruit is a black nutlet 1-2 mm. long with slender bristles (pappus). In bloom July-September.

ECOLOGICAL NOTES: Boneset occurs in sedge meadows, fresh (wet) meadows, calcareous fens and marshes. It is often associated with groundwater seepages and tends to be a pioneer species.

SOURCE: Gleason and Cronquist (1991); Swink and Wilhelm (1994).

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WILD MINT

(*Mentha arvensis* L.)

MINT FAMILY (Labiatae or Lamiaceae) **C of C:** Native (3) **IND. STATUS:** FACW

FIELD CHARACTERISTICS: A rhizome-producing, perennial, clonal, strongly aromatic (minty fragrance), herb usually 29-89 cm. high. The square stems are erect or ascending with opposite leaves. Leaves are 2-7 cm. long and 0.5-3 cm. wide, serrate, on short stalks (but greater than 2 mm.) and taper to a slender tip. Both the stems and leaves are variably hairy or fuzzy. Flowers occur in dense, axillary clusters. Petals are white to light purple or pink. Flowers have four stamens and are in bloom from July through September. The calyx is completely hairy; calyx lobes are broadly triangular to awl shaped. Mints (*Mentha* spp.) in general are strongly aromatic.

ECOLOGICAL NOTES: This common mint occurs in sedge meadows, calcareous fens, shrub-carrs, alder thickets, shallow marshes, and along streams and shores.

SOURCE: Fassett (1957); Gleason and Cronquist (1991); and Swink and Wilhelm (1994).

COMMON BUGLEWEED

(*Lycopus americanus* Muhl.)

MINT FAMILY (Labiatae or Lamiaceae) **C of C:** Native (4) **IND. STATUS:** OBL

FIELD CHARACTERISTICS: A rhizome-producing, perennial herb, usually only 5-15 cm. high (rarely to 80 cm.). The square stems are erect with opposite leaves. Leaves are 3-8 cm. long and 1-4 cm. wide, stalked or nearly so and are hairless above; at least the lower leaves are pinnately toothed at least halfway to the midrib. The small, white flowers form dense clusters in leaf axils. Flowers lack stalks, have two stamens, and are in bloom from July through September. The petals extend beyond the calyx-lobes. The calyx-lobes are at least 1-2 mm. long and extend beyond the nutlets at maturity; are narrowly triangular with the width at the base less than half the length; and have a prominent midvein. Bugleweeds (*Lycopus* spp.) are not strongly aromatic.

L. americanus is similar to *L. uniflorus* and *L. virginicus,* both of which have blunt, triangular calyx-lobes that lack a prominent midvein. The calyx-lobes of the latter two species are equal to or shorter than the nutlets at maturity. *L. uniflorus* also produces a conspicuous tuber. All three species can occur together.

ECOLOGICAL NOTES: Common bugleweed is one of our most common wetland herbs. In addition to sedge meadows, it occurs in marshes, calcareous fens, fresh (wet) meadows, wet to wet-mesic prairies, floodplains, poorly-drained fields and ditches. It is also called cut-leaved water horehound.

SOURCE: Fassett (1957); Gleason and Cronquist (1991); and Swink and Wilhelm (1994).

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NORTHERN BUGLEWEED

(*Lycopus uniflorus* Michx.)

MINT FAMILY (Labiatae or Lamiaceae) **C of C:** Native (5 MN)(4 WI) **IND. STATUS:** OBL

FIELD CHARACTERISTICS: A stolon-producing, perennial herb, up to about 1 m. tall. Stolons end in a shallow tuber from which a single stem will arise. The square stems are erect with opposite leaves. Mature leaves are long and narrow, usually less than 3 cm. wide, with a few shallow teeth along the margins. Leaf blades taper to a short stalk. The small, white flowers form dense clusters in the leaf axils. Calyx-lobes are less than 1 mm. long and are shorter than the nutlets at maturity, are bluntly triangular, and lack a prominent midvein. Bugleweeds (*Lycopus* spp.) are not strongly aromatic.

L. uniflorus may be confused with *L. virginicus.* But, *L. uniflorus* has a 5-lobed calyx and corolla while *L. virginicus* is only 4-lobed.

ECOLOGICAL NOTES: Northern bugleweed, also called northern water horehound, is frequently found growing in sedge meadows, wet prairies, calcareous fens, bog laggs, and at marsh edges. It also occurs in openings of wooded swamps.

SOURCE: Crow and Hellquist (2000); Gleason and Cronquist (1991); Swink and Wilhelm (1994); and Voss (1996).

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Stipule

MARSH PEA

(*Lathyrus palustris* L.)

BEAN FAMILY (Fabaceae or Leguminosae) **IND. STATUS:** FACW

C of C: Native (6 MN)(7 WI)

FIELD CHARACTERISTICS: A perennial herbaceous (non-woody) vine growing to about 1 m. Stems are frequently winged at the angles with 4-8(10) alternate, pinnately compound leaves. Leaves are terminated by tendrils. The 2-4(6) pairs of opposite leaflets are elliptic to lance-ovate. Stipules are less than 5(7) mm. wide and semi-sagittate (inset photo). The inflorescence is a 2-8 flowered raceme. Calyxes are usually smooth, but may be sparsely pubescent. Flowers are violet-purple (white), 12-20 mm. long, and loosely arranged on slender pedicels 3-6 mm. long. Flowers from June through late August.

ECOLOGICAL NOTES: Curtis (1971) notes that marsh pea reaches its highest presence in southern sedge meadows. It also occurs in marshes, wet prairies and calcareous fens.

SOURCE: Crow and Hellquist (2000); Fassett (1976); Gleason and Cronquist (1991); Swink and Wilhelm (1994); and Voss (1972).

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MARSH SKULLCAP

(*Scutellaria galericulata* L.)

MINT FAMILY (Labiatae or Lamiaceae) **C of C:** Native (5) **IND. STATUS:** OBL

SYNONYM: *Scutellaria epilobiifolia* A. Hamilton

FIELD CHARACTERISTICS: A rhizome-producing, perennial herb 20-80 cm. high. Square stems are weak but erect, with opposite, simple leaves. The leaves have stalks and are 2-4 times longer than wide. Leaves lack aroma and have a bitter after-taste. Flowers are solitary and occur in the leaf axils. The calyx is 2-lipped with a distinct, shield-like crest or projection on the upper side. Petals are arching and 1.5-2 cm. long. Flowers are blue, marked with white, and in bloom June-September.

ECOLOGICAL NOTES: Marsh skullcap is a common wetland species occurring primarily on the peat/muck soils of sedge meadows, shrub-carrs and bogs, as well as marshes that have essentially stable water levels.

SOURCE: Fassett (1978); Gleason and Cronquist (1991); and Swink and Wilhelm (1994).

SIDE-FLOWERED SKULLCAP

(*Scutellaria lateriflora* L.)

MINT FAMILY (Labiatae or Lamiaceae) **C of C:** Native (5) **IND. STATUS:** OBL

FIELD CHARACTERISTICS: A perennial herb 20-60 cm. high. Square stems are usually branched. Leaves are simple, opposite, coarsely-toothed, ovate to lanceolate, 3-8 cm. long and 1.5-5 cm. wide. Blue flowers marked with white are two-lipped, to 8 mm. long, in elongate racemes from leaf axils. Fruit is a nutlet. In bloom July-September.

Side-flowered skullcap is very similar to marsh skullcap (*S. galericulata*) which has solitarly flowers in leaf axils whereas side-flowered skullcap has multiple flowered branches (racemes) from leaf axils. Also, the flowers are larger in marsh skullcap (15-20 mm. long) compared to side-flowered skullcap (to 8 mm.).

ECOLOGICAL NOTES: Side-flowered skullcap is a common species occurring primarily on the peat/muck soils of sedge meadows, shrub-carrs and marshes.

SOURCE: Chadde (2002); Fassett (1978); Gleason and Cronquist (1991); and Swink and Wilhelm (1994).

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ANGELICA

(*Angelica atropurpurea* L.)

CARROT FAMILY (Umbelliferae or Apiaceae) **C of C:** Native (6) **IND. STATUS:** OBL

FIELD CHARACTERISTICS: A very coarse, tall, perennial herb, usually up to 3 m. high. The stout, round stems are purplish, aromatic and hollow. Basal leaves are pinnately more than once divided, and upper leaves are progressively reduced with broadly sheathing leaf stalks and serrate, pointed leaflets. The inflorescence is a large (10-20 cm. wide), spherical compound umbel with 20-45 rays. Flowers are white or greenish-white and in bloom around the first week in June. Thin, flat lateral wings occur on the hairless fruit, which fall by mid-summer.

ECOLOGICAL NOTES: Angelica is common in sedge meadows and calcareous fens and is a good indicator of groundwater springs and seepages. It also occurs in forested wetlands, and along streambanks and shores.

SOURCE: Gleason and Cronquist (1991); Swink and Wilhelm (1994); and Voss (1985).

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BLUE FLAG IRIS

(*Iris versicolor* L.)

IRIS FAMILY (Iridaceae) **C of C:** Native (4 MN)(5 WI) **IND. STATUS:** OBL

FIELD CHARACTERISTICS: A perennial herb usually 10-80 cm. high. This iris tends to form large clumps from thick, creeping rhizomes. The unwinged, erect stems generally have basal leaves that are more than 1 cm. wide. Leaves are folded on the midribs so that they form an overlapping flat fan. The well developed flower petals and sepals spread out nearly flat and have two forms. The longer sepals are hairless and have a greenish-yellow blotch at their base. The inferior ovary is bluntly angled. Flowers are usually light to deep blue and in bloom May-July. Fruit is a 3-celled, bluntly angled capsule. The large seeds can be observed floating in the fall.

A similar species, *I. virginica*, can be distinguished by its cauline (stem) leaves that often exceed the inflorescence whereas the cauline leaves of *I. versicolor* are usually shorter than or equal to the height of the inflorescence.

ECOLOGICAL NOTES: Blue flag iris is common in sedge meadows, marshes, and along streambanks and shores. *Iris versicolor* tends to be more northern in its regional distribution, while *I. virginica* is more southern. There is some debate concerning the taxonomic status of *I. versicolor.* See Swink and Wilhelm (1994) for a brief discussion.

SOURCE: Gleason and Cronquist (1991); Swink and Wilhelm (1994); and Voss (1972).

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TURTLEHEAD

(*Chelone glabra* L.)

FIGWORT FAMILY (Scrophulariaceae) **C of C:** Native (7) **IND. STATUS:** OBL

FIELD CHARACTERISTICS: A perennial herb with stems 50-100 cm. tall that are 4-angled but rounded on the corners. Leaves are opposite, lanceolate, to 15 cm. long and 1-3 cm. wide, with margins of sharp teeth. Flowers are in dense spikes 3-8 cm. long at the end of stems. Flowers are white or light pink and 2.5-3.5 long. Fruit is an ovate capsule. In flower August-September.

ECOLOGICAL NOTES: Turtlehead primarily occurs in sedge meadows and calcareous fens, typically in those that have not been degraded by disturbances. It also occurs in openings of wooded swamps and along streambanks and shores.

SOURCE: Gleason and Cronquist (1991); Chadde (2002); Voss (1996); and Black and Judziewicz (2009).

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GRASS-LEAVED GOLDENROD

(*Euthamia graminifolia* (L.) Nutt.)

ASTER FAMILY (Compositae or Asteraceae) **C of C:** Native (4) **IND. STATUS:** FACW

SYNONYM: *Solidago graminifolia* (L.) Salisb.

FIELD CHARACTERISTICS: A perennial herb 50-150 cm. in height. Stems are smooth or hairy, and much branched towards the top of the plant. Leaves are alternate, linear to narrowly lanceolate, 3-15 cm. long and 3-10 mm. wide, with 3 veins. Leaf margins are entire. The inflorescence consists of small, flat-topped clusters at the end of stems. Disc and ray flowers are yellow. Ray flowers are small, only to 1 mm. long. The involucre is 3-5 mm. long. Fruit is a hairy achene 1 mm. long with a pappus of many white bristles. In flower August-September. See Appendix A for a key to wetland goldenrods.

ECOLOGICAL NOTES: Grass-leaved goldenrod is a frequent wildflower of wet meadows, sedge meadows, wet prairies and calcareous fens.

SOURCE: Gleason and Cronquist (1991); and Swink and Wilhelm (1994).

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GREAT BLUE LOBELIA

(*Lobelia siphilitica* L.)

BELLFLOWER FAMILY (Campanulaceae) **C of C:** Native (5) **IND. STATUS:** FACW

FIELD CHARACTERISTICS: A short-lived perennial herb 50-150 cm. high. Stem leaves are alternate, simple, elliptic to lanceolate, 8-12 cm. long, and narrow to a sessile base. Flowers are blue (rarely white), 15-33 mm. long and arranged on a terminal raceme. The two-lipped corolla has a split on each side near its base. Seed capsules are two-celled with many seeds and have ear-like lobes (auriculate) at the base. In flower August-September.

ECOLOGICAL NOTES: Great blue lobelia occurs in sedge meadows, fresh (wet) meadows, swamps, and the borders ponds and streams. It occasionally occurs in calcareous fens.

SOURCE: Crow and Hellquist (2000); Gleason and Cronquist (1991); Swink and Wilhelm (1994); and Voss (1996).

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MICHIGAN LILY

(*Lilium michiganense* Farw.)

LILY FAMILY (Liliaceae) **C of C:** Native (7 MN)(6 WI) **IND. STATUS:** FAC

FIELD CHARACTERISTICS: A perennial herb 1-2 m. in height. Leaves are lanceolate and rough at the edges and veins. Main leaves are whorled while upper leaves are alternate. Largest leaves are 8-15 cm. by 8-20 mm. Orange flowers, marked with purple spots, are nodding from long pedicels and measure 5-8 cm. wide. The petal-like sepals are bent backwards (like a Turk's cap). Fruit is an elongated, 3-parted capsule. In flower June-August.

ECOLOGICAL NOTES: Michigan lily occurs in sedge meadows, along streams and in floodplain forests.

SOURCE: Gleason and Cronquist (1991); Chadde (2002); and Black and Judziewicz (2009).

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KALM'S ST. JOHN'S-WORT

(*Hypericum kalmianum* L.)

ST. JOHN'S-WORT FAMILY (Clusiaceae) **C of C:** Native (9) **IND. STATUS:** FACW

FIELD CHARACTERISTICS: A small, branching shrub growing to 1 m. in height. Branches are 4-angled. Leaves are firm, often revolute, linear to oblong, 2-4 cm. long by 3-8 mm. wide. Leaves are often waxy on the underside. The yellow flowers are 2-3.5 cm. wide and located in small cymes of 3-7 at the tips of branches. Stamens are many while styles number 5. Fruit is a narrowly ovoid, 7-10 mm. long pod with a slender beak. In flower June-August.

ECOLOGICAL NOTES: Curtis (1971) notes that Kalm's St. John's-wort reaches its highest presence in northern sedge meadows. In Wisconsin it is found in the central and northeastern portions of the state, while in Minnesota it has only been recorded in one northeastern county.

SOURCE: Curtis (1971); Gleason and Cronquist (1991); and Chadde (2002).