

III.B. Fresh (Wet) Meadows

Fresh (wet) meadows are dominated by grasses, such as reedtop grass and reed canary grass, and by forbs such as giant goldenrod, growing on saturated soils. The grass family (Gramineae) and aster family (Compositae) are well represented in fresh (wet) meadows. The forbs and grasses of these meadows tend to be less competitive, more nutrient demanding, and often shorter-lived species than the sedges of the sedge meadow community. Therefore, fresh (wet) meadows may represent younger communities that indicate recent disturbances of other inland fresh meadows by drainage, siltation, cultivation, pasturing, peat fires and/or temporary flooding. Once established, the forbs and grasses of the fresh (wet) meadow community may persist for extended periods of time.

Many fresh (wet) meadows in Minnesota and Wisconsin are dominated by reed canary grass (*Phalaris arundinacea*), a very aggressive, invasive species that can form near monotypes persisting for decades. Disturbances such as artificial drainage, plowing, mechanized land-clearing, road construction, excessive sediment and/or nutrient inputs, allow reed canary grass to outcompete the diverse, native plant assemblages of sedge meadows, wet prairies, calcareous fens, etc.



A fresh (wet) meadow dominated by reed canary grass (*Phalaris arundinacea*).

Not all fresh (wet) meadows in Minnesota and Wisconsin are dominated by non-native and/or invasive species. For example, the native Canada blue-joint grass (*Calamagrostis canadensis*) can dominate fresh (wet) meadow communities that may include a diversity of native forbs.

FRESH (WET) MEADOWS



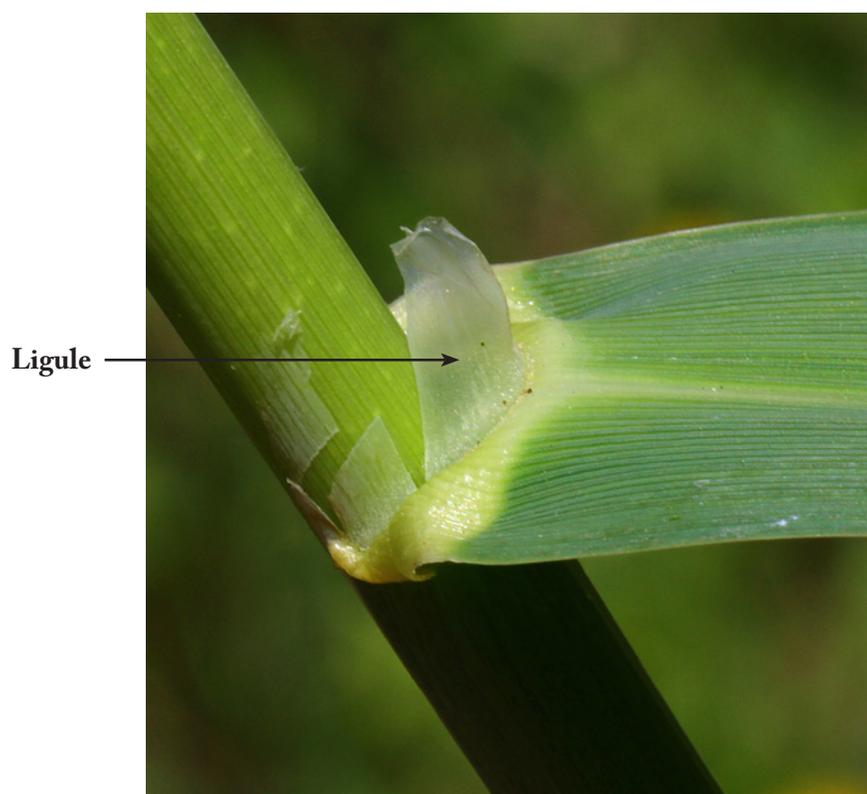
VEGETATION: The dominants of this fresh (wet) meadow are reed canary grass (*Phalaris arundinacea*), cup-plant (*Silphium perfoliatum*), giant goldenrod (*Solidago gigantea*) and Canada goldenrod (*Solidago canadensis*). Other species include sawtooth sunflower (*Helianthus grosseserratus*), giant sunflower (*Helianthus giganteus*), cut-leaved coneflower (*Rudbeckia laciniata*), marsh hedge-nettle (*Stachys palustris*), redstem aster (*Symphotrichum puniceum*), marsh aster (*S. lanceolatum*), tall meadowrue (*Thalictrum dasycarpum*), clasping dogbane (*Apocynum sibiricum*), red-top (*Agrostis gigantea*) and muhly grass (*Muhlenbergia* sp.). Canada thistle (*Cirsium arvense*), an introduced, invasive species, has become established as well.

SOILS: Faxon silty clay loam (Typic Endoaquolls), a poorly-drained to very poorly-drained soil on terraces of floodplains. These soils are formed in silty to clayey alluvium underlain by dolomite bedrock. Landscape position is a terrace within the broad valley of the Minnesota River.

HYDROLOGY: Faxon soils have a seasonal high water table at the surface to 12 inches below the surface during November through May of most years

LOCATION: Black Dog Preserve, Minnesota Valley National Wildlife Refuge, Dakota County, Minnesota.

FRESH (WET) MEADOWS



REED CANARY GRASS

(*Phalaris arundinacea* L.)

GRASS FAMILY (Gramineae or Poaceae)

IND. STATUS: FACW

C of C: A native genotype has been essentially assimilated by European genotypes. The highly invasive, robust stands currently observed are indicative of the introduced genotypes. (0)

FIELD CHARACTERISTICS: A colonial, perennial grass with stout, branched stems 1-2 m. in height. The ligule is large (3-8 mm. long), dry and papery. Leaves are flat and usually 1-2 cm. wide. Panicles are branched or lobed and 5-25 cm. long, initially purple-tinged then becoming straw colored with age. Spikelets are 4-6 mm. long with one fertile floret and two small, sterile lemmas below. Lemmas are awnless and shorter than the glumes. The lance-like glumes are compressed and wingless.

ECOLOGICAL NOTES: Reed canary grass is an extremely aggressive species that often forms persistent, near monotypic stands on sites disturbed by agricultural use, drainage, filling, siltation and other factors. It is found in a variety of disturbed wetlands including inland fresh meadows, shrub swamps, wooded swamps and floodplain forests. Although typically associated with disturbed wetlands, this species can occasionally colonize disturbed upland sites. Reed canary grass has been planted for erosion control on upland and wetland sites, and for lowland pasture.

SOURCE: Fassett (1951); and Gleason and Cronquist (1991).

FRESH (WET) MEADOWS

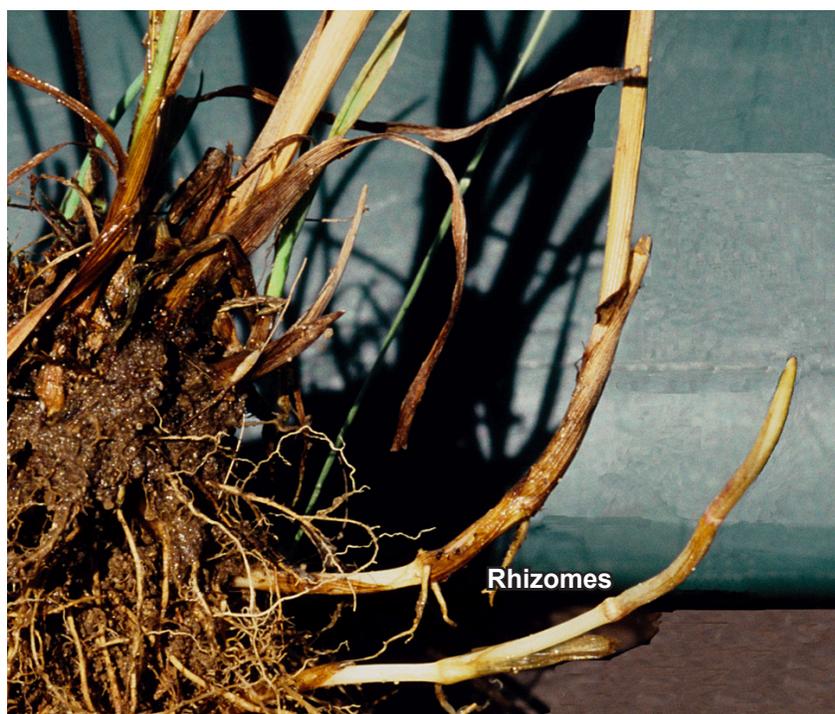


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Reed Canary Grass
(*Phalaris arundinacea*)



FRESH (WET) MEADOWS



REDTOP

(Agrostis gigantea Roth)

GRASS FAMILY (Gramineae or Poaceae) **C of C:** Introduced (0) **IND. STATUS:** FACW

SYNONYM: *Agrostis stolonifera* var. *major* (Gaudin) Farw.

FIELD CHARACTERISTICS: A perennial, sod-forming grass from rhizomes, not stoloniferous. Culms (stems) can be straight or curved at the very base; otherwise, plants are erect and straight to 30-100 cm. or more in height. Larger leaf blades mostly 3-7(10) mm. wide. Larger ligules 2.5-6 mm. long. Panicles 10-20 cm. long with widely spreading, unequal branches. Panicles usually tinged with purple-red, although plants growing in shade may be more greenish. Spikelets are one-flowered and 2-3.5 mm. long.

ECOLOGICAL NOTES: A common grass that occurs in a wide variety of moist to saturated soils of inland fresh meadows, pastures, abandoned agricultural lands, vacant urban lands and wetland restoration sites. It is often encountered in the wetland/upland transition zone. A native of Europe, redtop has become so well established in our flora as to appear indigenous.

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

FRESH (WET) MEADOWS



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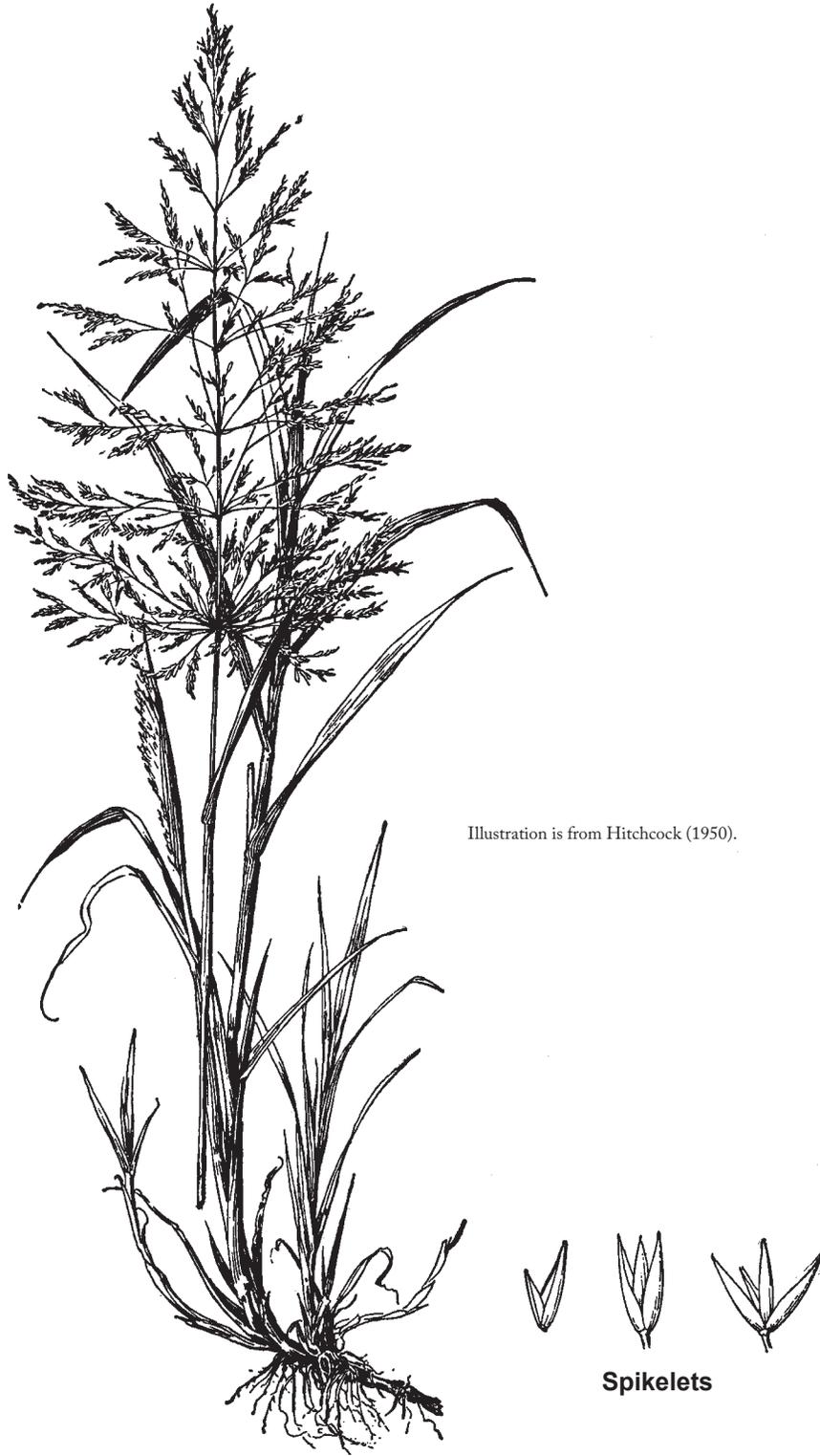


Redtop (*Agrostis gigantea*)



The conspicuous red patches in this wetland hay meadow consist of redtop.

FRESH (WET) MEADOWS



Redtop
(*Agrostis gigantea*)

FRESH (WET) MEADOWS



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KENTUCKY BLUEGRASS

(*Poa pratensis* L.)

GRASS FAMILY (Gramineae or Poaceae)

IND. STATUS: FAC

C of C: Predominately introduced (0)

FIELD CHARACTERISTICS: A perennial, sod-forming grass 10-100 cm. in height. Its characteristic of forming many rhizomes helps distinguish it from some other grass species. Stems are erect and nearly round or slightly flattened. Leaf blades are flat to folded, 1-15 cm. long, 2-5 mm. wide, ending in a boat-shaped tip. Ligules are shorter than wide and less than 2 mm. in length. Inflorescence is a panicle that is open to somewhat contracted. Spikelets are 2-5 flowered and laterally compressed (flattened). Lemmas have abundant cottony hairs at the base easily visible with a hand lens. Lemmas are 5-nerved, the keel hairy on about the basal two-thirds, and only scabrous to smooth on the upper third.

A similar, common species, fowl bluegrass (*Poa palustris* L.), can be distinguished from Kentucky bluegrass by its lack of rhizomes, more open/loose panicle, and conspicuous ligules 2.5-5 mm. in length.

ECOLOGICAL NOTES: Kentucky bluegrass is ubiquitous in all but the wettest habitats (Voss 1972). Vacant urban lands, pastured areas and abandoned agricultural lands are prime habitat for this species. In Minnesota and Wisconsin, Kentucky bluegrass is one of the most common species encountered in the wetland/upland transition zone.

SOURCE: Voss (1972); Gleason and Cronquist (1991); Great Plains Flora Association (1991); and Swink and Wilhelm (1994).

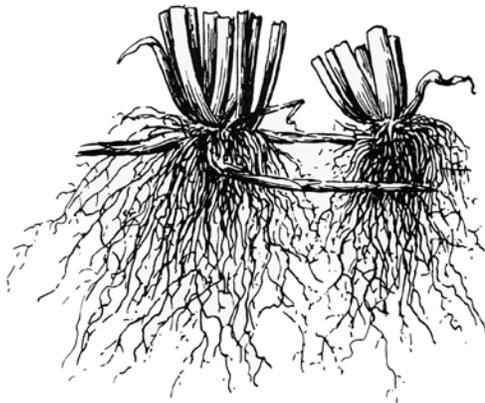
FRESH (WET) MEADOWS



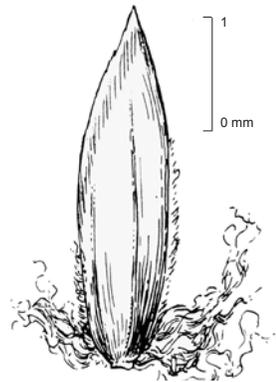
Inflorescence



Spikelet



Rhizomes



Floret

Kentucky Bluegrass
(Poa pratensis)

Illustrations by Elsie Froeschner (Pohl 1966).

FRESH (WET) MEADOWS



© Photos by Steve D. Eggers



Ligule (fleshy white structure).

FOWL BLUEGRASS

(*Poa palustris* L.)

GRASS FAMILY (Gramineae or Poaceae)

C of C: Native (5)

IND. STATUS: FACW

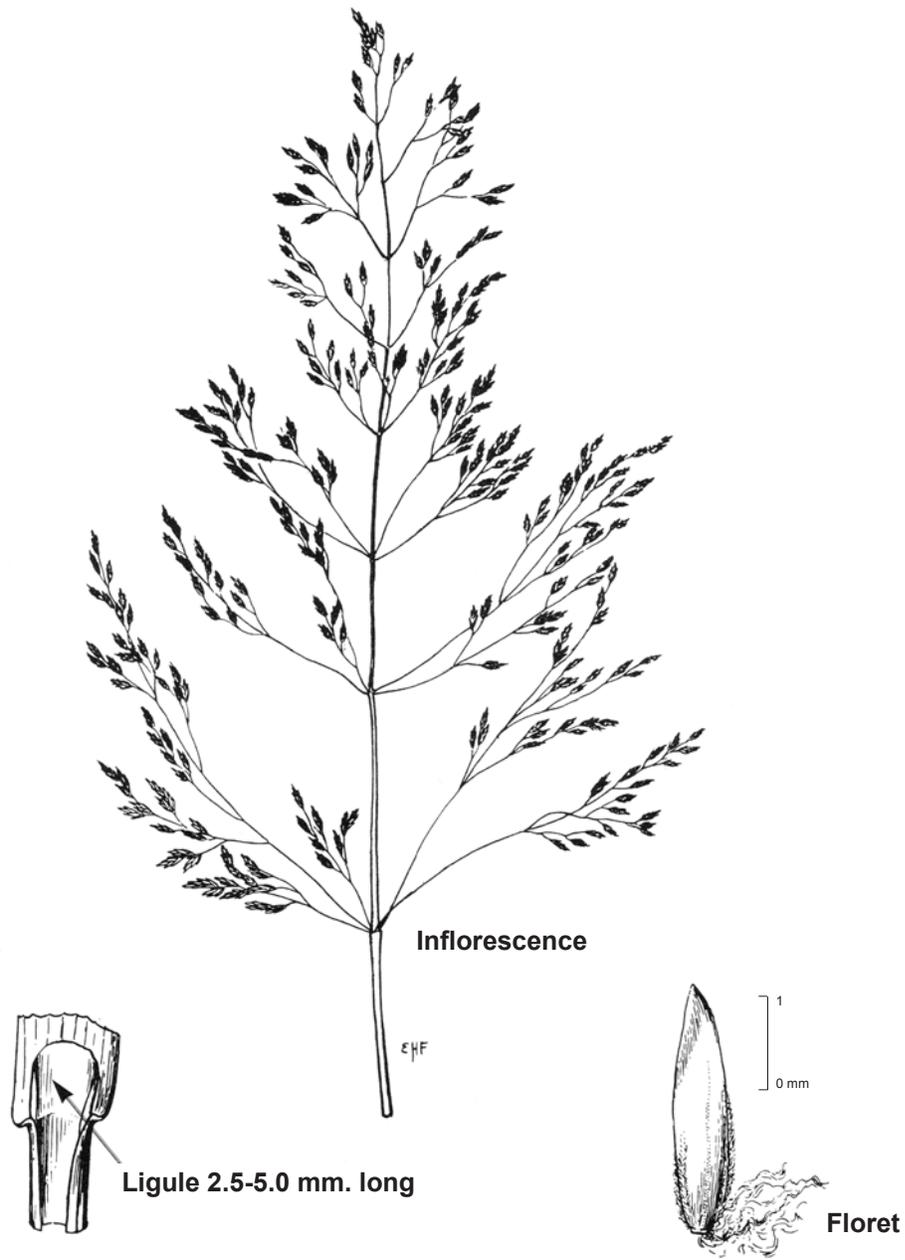
FIELD CHARACTERISTICS: A perennial, tufted grass 60-120 cm. in height. Unlike its relative *P. pratensis*, it lacks rhizomes and is not a sod-forming grass. Stems are round, weak and wiry, often leaning on adjacent vegetation. Often seen rooting from stem nodes in contact with the ground. Leaf blades are flat to folded, 1-3.1 (3.8) mm. wide, ending in a boat-shaped tip. Ligules are a conspicuous 2.5-5.0 mm. in length. Inflorescence is an open/loose panicle with 3-5 branches per cluster (fascicle). Spikelets have 2-4 narrow florets, often with golden tips. Lemmas are 3-nerved and have abundant cottony hairs at the base easily visible with a hand lens.

A similar, ubiquitous grass species, Kentucky bluegrass (*Poa pratensis* L.), can be distinguished from fowl bluegrass by its sod-forming rhizomes, more contracted panicle, and shorter ligules (less than 2 mm. in length).

ECOLOGICAL NOTES: Fowl bluegrass, also called marsh bluegrass, is an often misidentified but common grass of fresh (wet) meadows, openings in wooded swamps and bogs as well as along shores, ponds and streambanks. It frequently occurs in prairie marshes and is used in wet meadow seed mixes.

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

FRESH (WET) MEADOWS



Fowl Bluegrass
(*Poa palustris*)

Illustrations by Elsie Froeschner (Pohl 1966).

FRESH (WET) MEADOWS



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QUACK GRASS

(*Elytrigia repens* (L.) Desv. ex B.D. Jacks.)

GRASS FAMILY (Gramineae or Poaceae)

C of C: Introduced (0)

IND. STATUS: FACU

SYNONYMS: *Agropyron repens* (L.) P. Beauv.; *Elymus repens* (L.) Gould.

FIELD CHARACTERISTICS: A strongly rhizomatous, perennial grass 50-110 cm. tall. The erect to reclining hollow, green to glaucous stems are smooth. Stems may arise from buds located along the rhizome nodes. Rhizome tips tend to be pale yellow and sharp pointed. Lower stem sheaths are hairy, while the upper such sheaths tend to be smooth. Leaf blades are broad and flat, 3-10+ mm. wide with conspicuous, claw-like auricles clasping the stem. Ligules are short: 0.1-0.8 mm. in length. Inflorescence is a solitary bilateral spike 4-19 cm. long with two long rows of persistent spikelets laying flat wise to the stem. Glumes and lemmas are glabrous, acute, and may end with short awns. Lemmas are 7-10 mm. long.

ECOLOGICAL NOTES: An abundant, introduced, weedy grass invasive in fields, clearings and roadsides. Often spreading onto shores, ditch banks, lake dunes and seasonally wet agricultural soils.

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

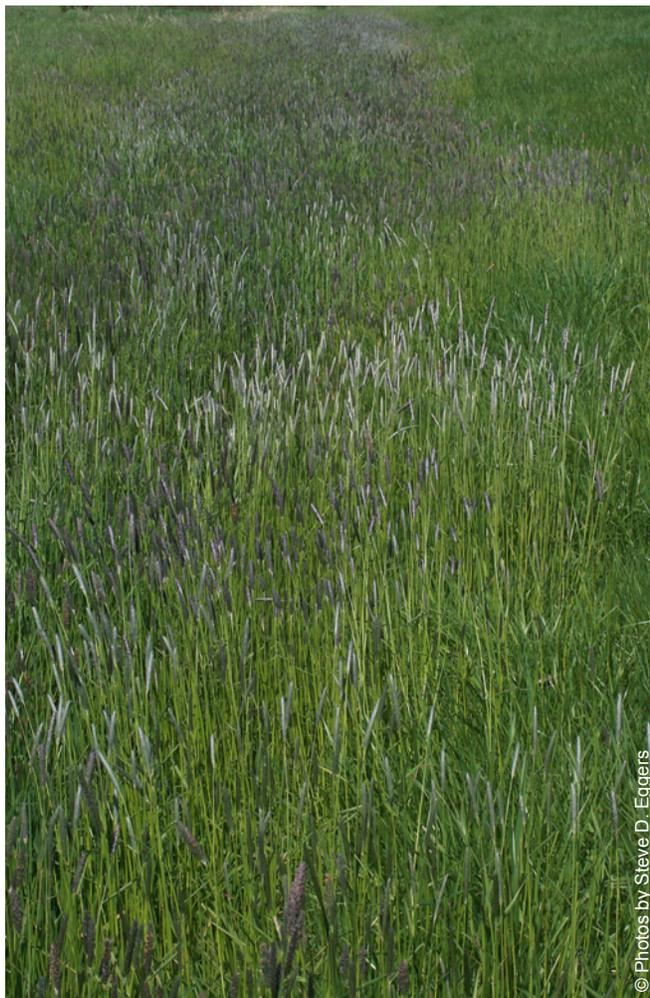
FRESH (WET) MEADOWS



Illustration from Hitchcock (1950).

Quack Grass
(*Elytrigia repens*)

FRESH (WET) MEADOWS



MEADOW FOXTAIL

(*Alopecurus pratensis* L.)

GRASS FAMILY (Gramineae or Poaceae) **C of C:** Introduced (0) **IND. STATUS:** FACW

FIELD CHARACTERISTICS: A perennial grass with stems 40-80 cm. long, erect or decumbent at base. Spikelets are 1-flowered and 4-6.5 mm. long excluding the awn. Awns mostly extended 3.5-6 mm. beyond the glumes. Glumes with conspicuous hairs. Inflorescence is very long and narrow – 2-8 cm. by 5-10 mm. – similar to timothy (*Phleum pratense*). However, the glumes are acute (football-shaped) as opposed to the U-shaped tip of the glumes of timothy (see photograph on next page).

ECOLOGICAL NOTES: Meadow foxtail is a native of Eurasia that has become naturalized in our wet meadows, especially those used for pasture or hay. Roadside ditches are another common habitat.

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

FRESH (WET) MEADOWS

Illustration by Elsie Froeschner (Pohl 1966).



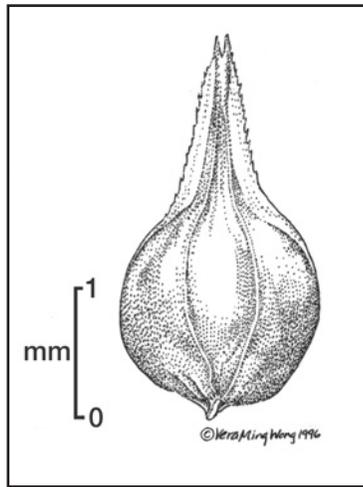
Meadow Foxtail
(*Alopecurus pratensis* L.)

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Comparison of the inflorescence of meadow foxtail (*Alopecurus pratensis*) [right] and timothy (*Phleum pratense*) [left]. The glumes of timothy have U-shaped tips as opposed to the football-shaped glumes of meadow foxtail.

FRESH (WET) MEADOWS



Perigynium



Leaf sheaths have conspicuous striations.

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FOX SEDGE

(*Carex vulpinoidea* Michx.)

SEDGE FAMILY (Cyperaceae)

C of C: Native (3 MN)(2 WI)

IND. STATUS: OBL

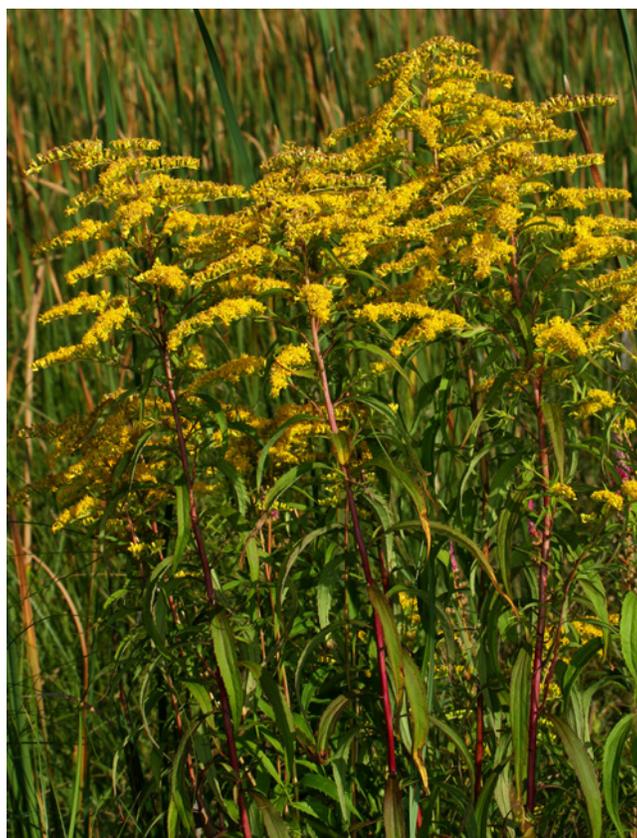
FIELD CHARACTERISTICS: A perennial, clump-forming sedge with stems about 30-100 cm. tall. Leaves are generally longer than the stem. The lowest leaves on the stem, however, are reduced to scales (aphyllopodic). Stems are slender and firm with whitish, thin sheaths that are conspicuously cross-wrinkled (see photograph). The perigynia are 2-3 mm. long and 1-2 mm. wide, ovate and abruptly taper into a beak, which is usually more than 0.7 mm. long. Each spikelet is typically subtended by a long, linear bract.

Fox sedge can be confused with *Carex annectens* which has leaves that are generally shorter than the stems and the perigynia tend to be yellowish with red-tinged scales.

ECOLOGICAL NOTES: One of our most common sedges, fox sedge is a pioneer species tending to colonize wet, sunny sites soon after disturbance. Fox sedge is an excellent colonizer of wetland restoration sites.

SOURCE: Fassett (1976); Gleason and Cronquist (1991); and Swink and Wilhelm (1994).

FRESH (WET) MEADOWS



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GIANT GOLDENROD

(*Solidago gigantea* Aiton)

ASTER FAMILY (Compositae or Asteraceae) **C of C:** Native (3) **IND. STATUS:** FACW

FIELD CHARACTERISTICS: A clonal, perennial herb 25-200 cm. high. Leaves of the lower and upper stem tend to be similar, triple-nerved and not rough. The stem is perfectly smooth below the inflorescence, often glaucous, and reddish (may be green in shaded habitats). The stem is not angled. The inflorescence is usually a one-sided, arching panicle. Flowers are yellow. In flower August-October. This species hybridizes with Canada goldenrod (*Solidago canadensis*), a FACU species. These hybrids are often sparsely hairy on the stem below the inflorescence. Refer to Appendix A for a key to wetland goldenrods.

ECOLOGICAL NOTES: Giant goldenrod is our most common goldenrod in fresh (wet) meadows and sedge meadows and is one of the most common forbs encountered in the wetland/upland transition zone. It also occurs in shaded floodplains, shrub-carrs, wet to wet-mesic prairies, calcareous fens and abandoned agricultural lands. In winter, goldenrods are noteworthy for their conspicuous round insect galls on the stem.

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

FRESH (WET) MEADOWS



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Comparison of Goldenrod Stems

Left is giant goldenrod (*Solidago gigantea*) collected from a sunny habitat; center is giant goldenrod collected from a shaded habitat; and right is Canada goldenrod (*Solidago canadensis*). Giant goldenrod stems are always perfectly smooth, sometimes with a white, waxy bloom. In contrast, Canada goldenrod stems are densely hairy.

FRESH (WET) MEADOWS



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SWAMP ASTER

(*Symphyotrichum firmum* (Nees) G.L.Nesom)

ASTER FAMILY (Compositae or Asteraceae) **C of C:** Native (6) **IND. STATUS:** FACW

SYNONYMS: *Aster firmus* Nees, *Aster lucidulus* (Gray) Wieg., or lumped entirely with *Symphyotrichum puniceum* (L.) A.Love & D.Love

FIELD CHARACTERISTICS: A colonial, perennial herb 40-260 cm. high that can form dense, monotypic stands. Stem leaves are lobed-clasping at their bases and are conspicuously crowded, particularly towards the inflorescence. Stems are green with mahogany marks at the nodes, or streaked. In addition, the stems are smooth, to sparingly covered with stiff, straight hairs along the angles (see photograph above). The inflorescence is hairy or smooth, but does not have glands. Ray flowers are usually white to pale blue or lavender. Nutlets are hairy. In flower August-October. Refer to Appendix B for a key to wetland asters.

ECOLOGICAL NOTES: Swamp aster, also called shining aster, is one of the more common wetland asters, primarily of inland fresh meadows. This species seems to increase in response to disturbances such as grazing and drainage.

SOURCE: Gleason and Cronquist (1991); Swink and Wilhelm (1994); Great Plains Flora Association (1991); and Ownbey and Morley (1991).

FRESH (WET) MEADOWS



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Leaves 10x as long as wide and taper to a narrow base.

MARSH ASTER

(*Symphotrichum lanceolatum* (Willd.) G.L. Nesom)

ASTER FAMILY (Compositae or Asteraceae) **C of C:** Native (5) **IND. STATUS:** FACW

SYNONYMS: *Aster simplex* Willd.; *Aster lanceolatus* Willd.

FIELD CHARACTERISTICS: A perennial herb 60-150 cm. high that can form dense, monotypic clones. Leaf undersides are smooth except for occasional small hairs located along the margins. Leaves are mostly serrate, but can be entire, the larger leaves usually about 10 times as long as wide and taper to a narrow base (see photo), or may be slightly clasping. Axial branching is distinct. The inflorescence is leafy and forms a panicle. Ray flowers are always white and smaller than those of the redstem and swamp asters (*S. puniceum* and *S. firmum*). In flower July-November. Refer to Appendix B for a key to wetland asters.

ECOLOGICAL NOTES: Marsh aster is one of our more common wetland asters. It occurs in fresh (wet) meadows, sedge meadows, wet to wet-mesic prairies, calcareous fens and old fields.

SOURCE: Gleason and Cronquist (1991); Swink and Wilhelm (1994); Great Plains Flora Association (1991); and Ownbey and Morley (1991).

FRESH (WET) MEADOWS

Stems are red with coarse, stiff, white hairs. Leaves clasp the stem.



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REDSTEM ASTER

(*Symphyotrichum puniceum* (L.) A.Love & D.Love)

ASTER FAMILY (Compositae or Asteraceae)

IND. STATUS: OBL

SYNONYM: *Aster puniceus* L.

C of C: Native (6 MN)(5 WI)

FIELD CHARACTERISTICS: A perennial herb 40-150 cm. high. Stem leaves are lobed-clasping at their bases and are not conspicuously crowded. Stems are reddish with coarse, stiff, white hairs. The inflorescence is hairy or smooth, but does not have glands. Ray flowers are usually pale blue to deep lavender or violet. Disc flowers are yellow. Nutlets are smooth. In flower August-October. Refer to Appendix B for a key to wetland asters.

ECOLOGICAL NOTES: Redstem aster occurs in fresh (wet) meadows, sedge meadows, shrub-carrs, alder thickets, hardwood swamps, calcareous fens and on shores. It typically occurs as widely spaced individuals.

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

FRESH (WET) MEADOWS



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CANADA THISTLE

(*Cirsium arvense* (L.) Scop.)

ASTER FAMILY (Compositae or Asteraceae)

IND. STATUS: FACU

C of C: Introduced, invasive, a state-designated noxious weed in Minnesota and Wisconsin (0)

FIELD CHARACTERISTICS: A colonial, perennial herb 30-150(200) cm. in height. Leaves are pinnately divided, white beneath, with spiny margins. Flower heads are numerous in an often flat-topped inflorescence. Flower heads are nearly unisexual, the involucre 1-2 cm. tall. Flowers are pink-purple and nutlets (achenes) are 2.5-4 mm. long. In flower June-October.

ECOLOGICAL NOTES: Canada thistle is a native of Eurasia that has become widely established in disturbed habitats in our area, including sedge meadows and wet prairies where disturbance has been limited to grazing. The FACU status is accurate, but Canada thistle occasionally occurs in habitats as wet as the edges of shallow marshes.

SOURCE: Gleason and Cronquist (1991).

FRESH (WET) MEADOWS



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BLUE VERVAIN

(*Verbena hastata* L.)

VERVAIN FAMILY (Verbenaceae) **C of C:** Native (6 MN)(3 WI) **IND. STATUS:** FACW

FIELD CHARACTERISTICS: A perennial herb 40-120 cm. tall. Leaves are opposite, lance-shaped to narrowly ovate, and coarsely serrated. Leaves are 4-12 cm. long and 1-5 cm. wide. Bright blue to purple flowers are overlapped and packed into a number of dense spikes that form a panicle at the end of the 4-sided, erect stem. Flowers are 5-lobed, trumpet-shaped and 2-4 mm. wide. In bloom July-August.

ECOLOGICAL NOTES: Blue vervain is common in sedge meadows, wet to wet-mesic prairies and fresh (wet) meadows. It is a colonizer of exposed, moist soils.

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

FRESH (WET) MEADOWS



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MARSH HEDGE-NETTLE

(*Stachys palustris* L.)

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

FIELD CHARACTERISTICS: A rhizome-producing, perennial herb usually 30-100 cm. high. The square stems are erect with opposite leaves. Stems are hairy on the sides as well as the angles. Leaves are sessile to short-petioled (less than 5 mm. long), lanceolate to narrowly ovate, toothed and hairy. The axillary flowers are borne in whorls of six forming a terminal spike. The lower flower whorls are usually subtended by foliage leaves. But, the leaves are progressively reduced to bracts up the spike. The hooded, two-lipped corolla is pink to purplish with white dots, 5-parted, the lower lip having 3 lobes. The calyx is a bell-shaped tube with 4-5 acute, deltoid teeth (lobes). Fruit is a single seeded nutlet. Blooming occurs in July-August.

ECOLOGICAL NOTES: Marsh hedge-nettle frequently occurs in fresh (wet) meadows, wet prairies, along open wet shorelines and marsh edges and, to a lesser extent, openings in hardwood swamps.

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

FRESH (WET) MEADOWS



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TALL MEADOWRUE

(*Thalictrum dasycarpum* Fischer & Ave-Lall.)

BUTTERCUP FAMILY (Ranunculaceae)

C of C: Native (4)

IND. STATUS: FACW

FIELD CHARACTERISTICS: A robust, perennial herb from a short rhizome. Stems are purple-tinged and grow to 1-2 m. in height. Leaves are divided into 3-4 groups of leaflets. Each leaflet is 15 mm. or more long and most have a three-lobed tip. Leaflets are distinctly hairy beneath but not glandular. Flowers are in large panicles. Flowers are unisexual with male and female flowers occurring on separate plants. Sepals are 3-5 mm. long. The green to white flowers are 4- to 5-parted with petal-like sepals falling early leaving fringe-like filaments. Fruit is a ribbed nutlet 4-6 mm. long. In flower June-July.

ECOLOGICAL NOTES: Tall meadowrue is common in sedge meadows, fresh (wet) meadows, wet to wet-mesic prairies, openings in shrub swamps, and along streambanks.

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

FRESH (WET) MEADOWS



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Auricle

DUDLEY'S RUSH

(*Juncus dudleyi* Wieg.)

RUSH FAMILY (Juncaceae)

C of C: Native (3 MN)(4 WI)

IND. STATUS: [FACW]

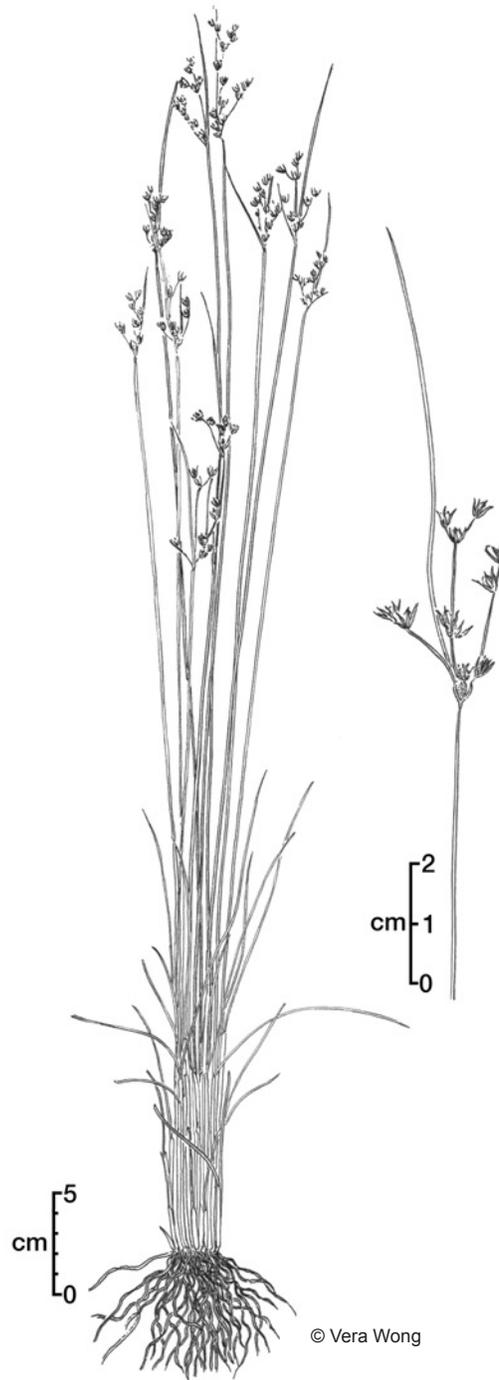
SYNONYM: *Juncus tenuis* var. *dudleyi* (Wieg.) F. J. Herm.

FIELD CHARACTERISTICS: A perennial rush with stems more or less cespitose and 30-80 cm. in height. Leaves are all basal, 10-30 cm. long, flat and 1-1.5 mm. wide, becoming involute or merely narrowly channeled on the upper side. Leaves are a third to half the height of the stems. Leaf sheaths terminate in 0.5-1 mm. long, rounded lobes (auricles) that are leathery and usually yellow or brown when dry. The inflorescence is terminal, with modified leaves 5-10 cm. long subtending and often surpassing the inflorescence, but not appearing as a continuation of the stem. Flowers are composed of a star-like pattern of 6 tepals (3.4-5.4 mm. long) surrounding an ovoid capsule 2.9-4.2 mm. long. Capsule is many-seeded with tiny seeds 0.3-0.5 mm. long.

ECOLOGICAL NOTES: A very common rush of inland fresh meadows and all sorts of exposed moist soils including farmed wetlands and wetland restoration sites. Gleason and Cronquist (1991) lump *J. dudleyi* and *J. interior* under *J. tenuis*.

SOURCE: Gleason and Cronquist (1963, 1991); Swink and Wilhelm (1994); Voss (1972); and Great Plains Flora Association (1991).

FRESH (WET) MEADOWS



Dudley's Rush
(Juncus dudleyi)

FRESH (WET) MEADOWS



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CANADA RUSH

(Juncus canadensis J. Gay)

RUSH FAMILY (Juncaceae)

C of C: Native (7)

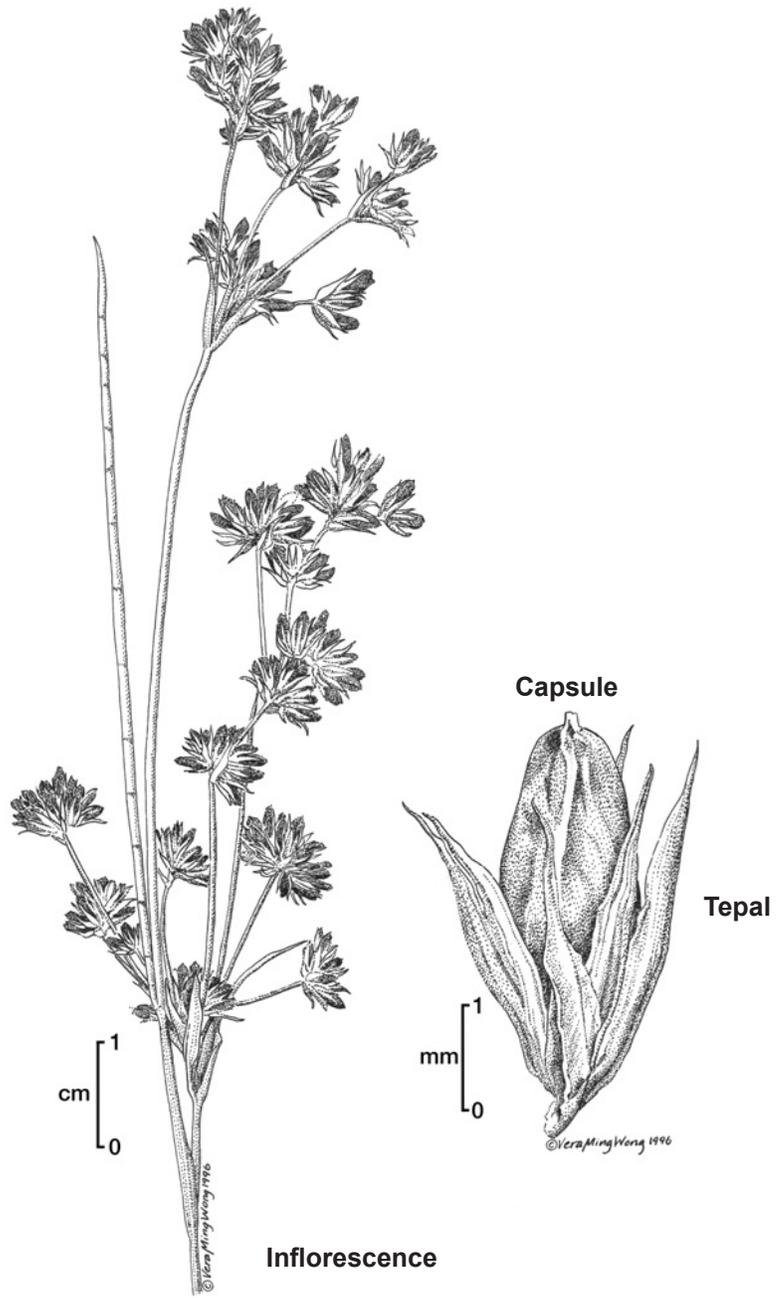
IND. STATUS: FACW

FIELD CHARACTERISTICS: A perennial, cespitose (tufted) rush with stout, rigid stems 40-100 cm. in height. Leaves number 2-4 and are round in cross section with hard cross partitions (visible on accompanying ink drawing). Leaves are 1.5-2.5 mm. thick. Heads are hemispherical and 5-10 flowered to spherical and 40-(or more) flowered. The 6 tepals (term used for *Juncus* because sepals and petals are similar) are 2.7-3.8 mm. long. Fruit is a capsule 3.3-4.5 mm. long. Capsules with a multitude of elongate seeds 1.2-1.9 mm. long with a tail on each end that accounts for more than half the length of the seed.

ECOLOGICAL NOTES: Canada rush is a common species of shallow marshes, inland fresh meadows, lakeshores and a variety of sandy, wet soils.

SOURCE: Gleason and Cronquist (1991); Voss (1972); Great Plains Flora Association (1991); Swink and Wilhelm (1994); and Britton and Brown (1970).

FRESH (WET) MEADOWS



Canada Rush
(Juncus canadensis)

FRESH (WET) MEADOWS



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JOINTED RUSH

(*Juncus nodosus* L.)

RUSH FAMILY (Juncaceae)

C of C: Native (5)

IND. STATUS: OBL

FIELD CHARACTERISTICS: A perennial rush with erect, slender stems 15-40 cm. in height. The singular stems arise from nodes along a slender rhizome. Stem leaves number 2-3 and are round in cross section with hard cross partitions. Leaves are 0.7-1.5 mm. thick. Membranous sheaths are yellowish and terminate in 0.5-1 mm. long lobes (auricles). Inflorescence is composed of 2-15 spherical heads each with up to 25 reddish brown flowers radiating in all directions. Each flower has 6 stamens. The 6 tepals are 2.5-3.5 mm. long and shorter than the capsule. Fruit is a slender capsule 3.5-4.5 mm. long containing seeds about 0.5 mm. long.

ECOLOGICAL NOTES: Jointed rush is a common species of wet sandy to marly shores, marshes and calcareous fens. Occasionally it can be found growing along the edges of bog lags.

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