

Preferred Water Depth and Inundation Tolerance

Prefers 6-20 inches (Max: 24"/ Min: 0"). Species tolerates seasonal inundation, but may be killed by inundation of 1 foot or more of water for prolonged periods.

Wildlife Value

Provides waterfowl habitat. Muskrats will eat rhizomes. Wood ducks eat seeds. Medicinal plant with antibacterial compounds.

Application/Zone

Used in lower shoreline zones and vegetated swales. Rhizomes and roots form a mat in upper 4-8 inches of soil.

Availability, Establishment, and Maintenance

- Transplants, rhizomes and seeds are common and available from commercial vendors.
- Seeds may have dormancy requirement. About 90% germination is achieved by exposing freshly harvested seeds to cold, moist stratification for 60-90 days but seeds can be stored from 9 months to 2 years. Fall sowing provides better germination than spring by providing this cold treatment naturally.
- Rhizomes and transplants are generally more successful than seeds.
- Rhizomes are planted 2-5 inches deep. Root systems should be well-placed at a shoot base in the soil.
- Avoid flooding of newly established plants. Species requires drawdown until plants are established.
- For seed, some report 13 days are needed to germinate in a greenhouse without cold treatment. Survival rate in the field is 100%.
- Moderate rate of spread by rhizome, so use spacing of 1-3 foot centers.

Sweet Flag

Acorus calamus

Mature Height

2-6 feet

Plant Type

Perennial emergent herb

Indicator Status

Obligate

pH

5.9-8.8

Nutrient Load Tolerance

Low

Salt Tolerance

Low

Siltation Tolerance

Low

Flowering Color and Time

Green/brown

May 25 to June 30

Light Preference

Partial to full sun

Seeding Rate

.006 - .25 lbs/acre



Alisma subcordatum

Common Water Plantain

Preferred Water Depth and Inundation Tolerance

Prefers 0-6 inches, shallow marsh (Max: 20"/Min: 0"). Species tolerates periodic inundation of short duration. Found in mudflat and shoreline areas that dry up by the end of the season.

Wildlife Value

Achenes are eaten by waterfowl, songbirds, pheasants and rodents. Plants provide shade for fish. Leaves are sometimes eaten by rabbits and deer.

Application/Zone

Used in upper and lower shoreline zones, for streambank stabilization, and in vegetated swales.

Availability, Establishment, and Maintenance

- Achenes, transplants, and rootstocks are available from commercial vendors. Abundant achene production, approximately 144,000 per plant.
- Achenes require scarification to break dormancy which can be done with sandpaper. May require oscillating temperatures in moist (underwater) conditions and/or light for germination.
- Good plant establishment occurs when fresh achenes are broadcast in wet mudflats or around shorelines in the fall as this provides these treatments naturally.
- Achenes retain viability when stored in water under cold temperatures for 6 months.
- Rootstocks and transplants may be planted 2-5 inches deep in soil at a spacing determined by project design.
- This species is present and viable in the seedbank found in many hydric (wetland) soils.

Common Water Plantain

Alisma subcordatum

Mature Height

4 inches - 3.3 feet

Plant Type

Perennial emergent herb

Indicator Status

Obligate

pH

7-8.8

Nutrient Load Tolerance

Moderate

Salt Tolerance

Moderate

Siltation Tolerance

High

Flowering Color and Time

White

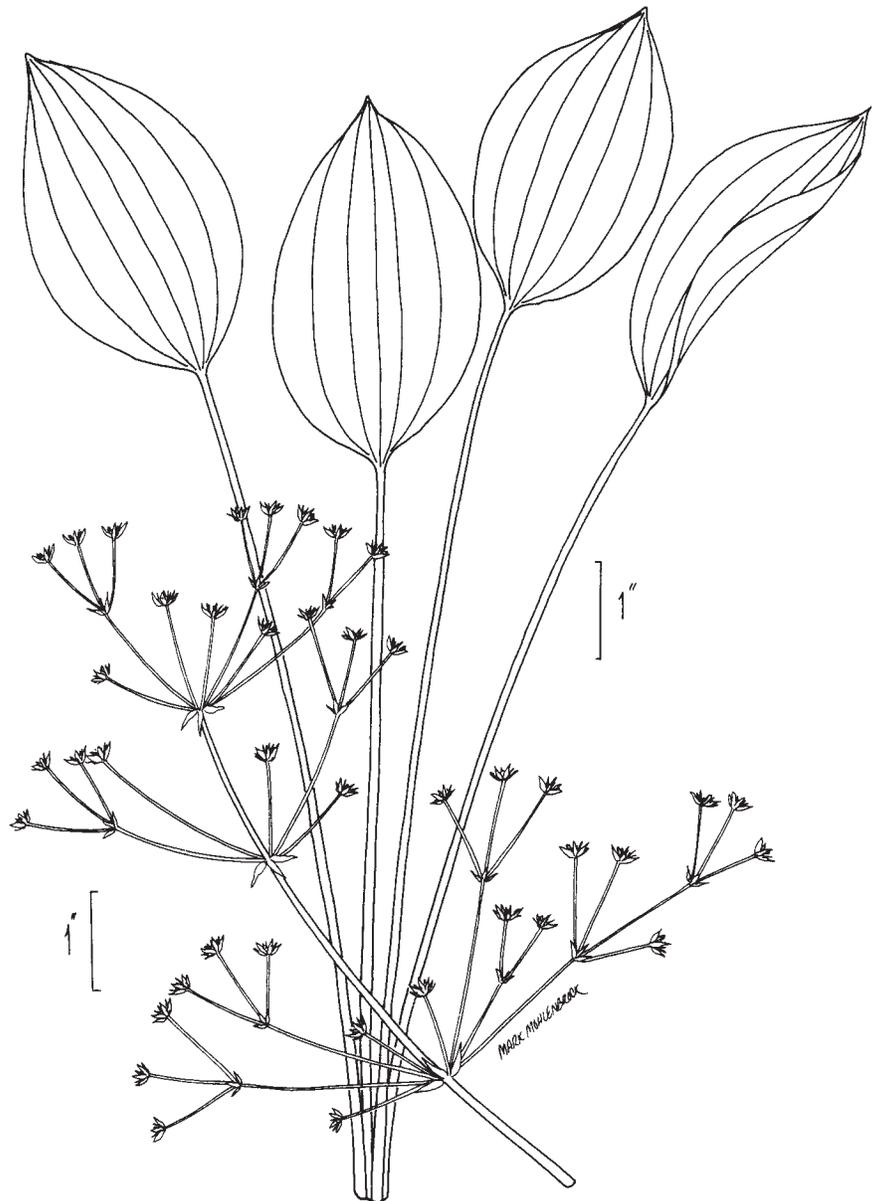
May to September

Light Preference

Full sun

Seeding Rate

.06 - .5 lbs/acre



Andropogon gerardii

Big Bluestem

Preferred Water Depth and Inundation Tolerance

Prefers moist soil. Mesic prairie species that survives in wet prairies and fens. Species is not tolerant of flooding, but is drought tolerant.

Wildlife Value

Provides a food source for Delaware skipper and forage for deer and livestock. Also provides cover for wildlife.

Application/Zone

Used to stabilize soil and slow surface runoff. Used for upland slope buffer stabilization.

Availability, Establishment, and Maintenance

- Propagation is easy by seed. Fall planted seed germinates in April.
- If not fall planted, plant in late April to June.
- In mixed grass plantings for tall grass, use up to 75% Big Bluestem along with Indian Grass on dry to mesic sites.
- Grass seed should not be more than 40% of total prairie mix by weight.

Big Bluestem

Andropogon gerardii

Mature Height

3-9 feet

Plant Type

Perennial grass

Indicator Status

Facultative (-)

pH

Wide range

Nutrient Load Tolerance

Low

Salt Tolerance

Low

Siltation Tolerance

Low

Flowering Color and Time

Bronze to steely gray-blue

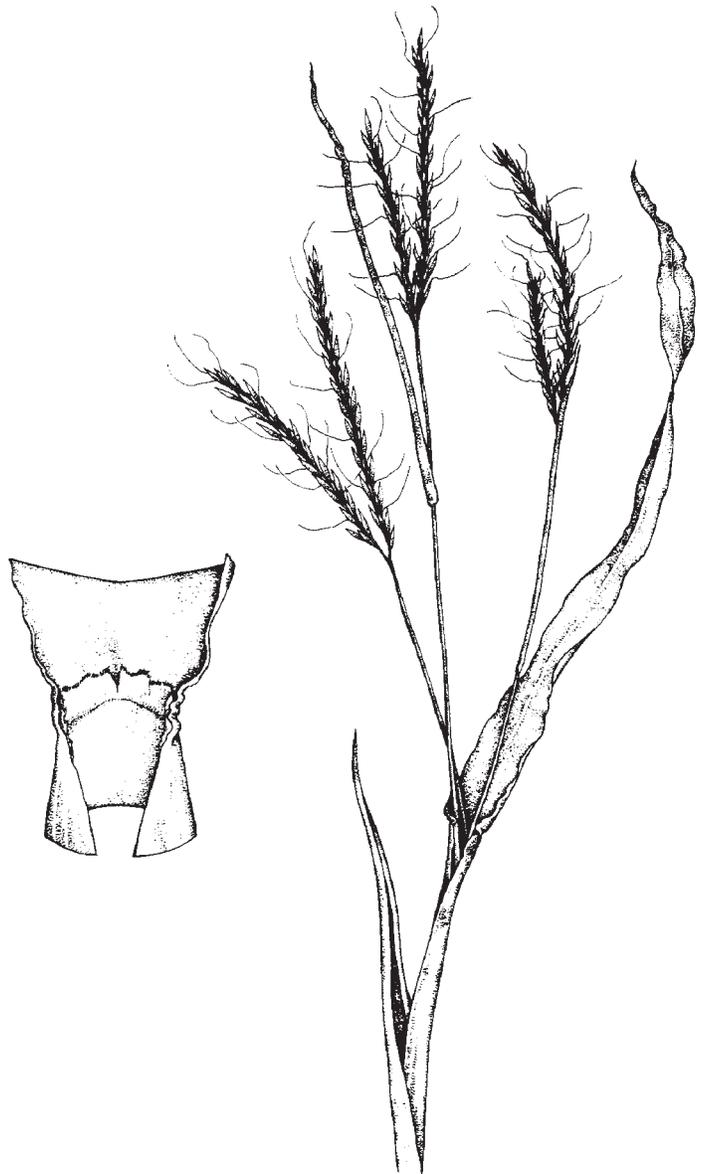
July to September

Light Preference

Full sun

Seeding Rate

2 lbs/acre



Aster laevis

Smooth Blue Aster

Preferred Water Depth and Inundation Tolerance

Can tolerate wet-mesic conditions for short durations and seasonal inundation. Species prefers dry upland areas.

Wildlife Value

Attracts orange sulphur butterflies.

Application/Zone

Used to slow stormwater runoff and provide upland slope buffer stabilization.

Availability, Establishment, and Maintenance

- Easily propagated from seed. No germination treatments are needed.
- Seeds can be stored dry.
- Cuttings may be rooted.

Smooth Blue Aster

Aster laevis

Mature Height

3-5 feet

Plant Type

Perennial herb

Indicator Status

[Upland]

pH

5-6.5

Nutrient Load Tolerance

Low

Salt Tolerance

Low

Siltation Tolerance

Low to moderate

Flowering Color and Time

Lavender-blue

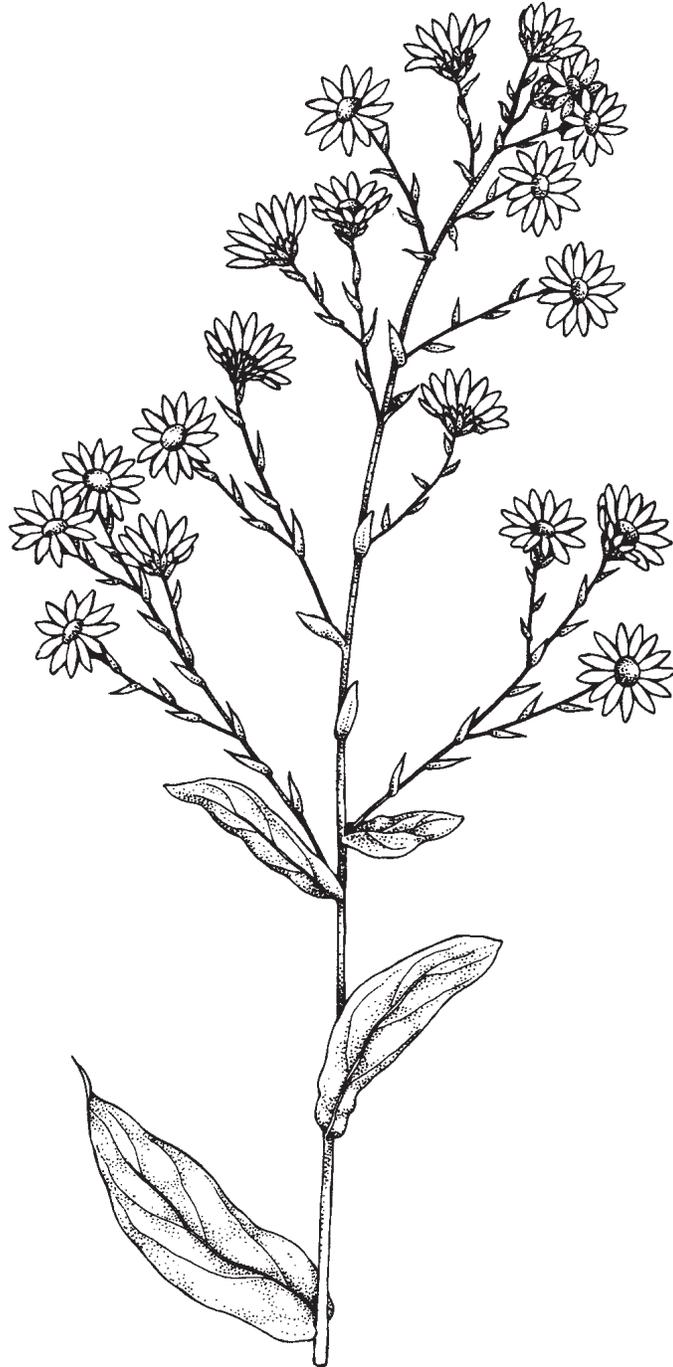
August to October

Light Preference

Partial to full sun

Seeding Rate

.02 - .125 lbs/acre



Aster lanceolatus

(*A. simplex*)

Panicled Aster

Preferred Water Depth and Inundation Tolerance

Prefers moist to saturated soil. Germinating seedlings are killed by 2 days of inundation. Mature plants can tolerate short periods of shallow flooding. Panicled Aster is more tolerant of inundation than New England Aster.

Wildlife Value

Provides waterfowl cover.

Application/Zone

Used in upper shoreline zone and as upland slope buffer stabilization. Also used in vegetated swales.

Availability, Establishment, and Maintenance

- Transplants, achenes, and rootstocks are available from several commercial vendors.
- Moist stratification benefits germination of achenes, but this cold treatment may not be required.
- Drill or broadcast achenes in the fall and cover them lightly with soil.
- Mature plants may be divided in the late fall or early spring.
- Most Asters studied germinate readily at 70° F.
- Can be very weedy and aggressive.

Panicled Aster

Aster lanceolatus

(*A. simplex*)

Mature Height

2-4 feet

Plant Type

Perennial herb

Indicator Status

Facultative Wet

pH

Not available

Nutrient Load Tolerance

Moderate

Salt Tolerance

Moderate

Siltation Tolerance

High

Flowering Color and Time

White

August to September

Light Preference

Partial to full sun

Seeding Rate

.06 lbs/acre



Aster novae-angliae

New England Aster

Preferred Water Depth and Inundation Tolerance

Prefers moist soil to wet-mesic conditions. Species has limited inundation tolerance. Germinating seedlings are killed by 2 days of inundation. Mature plants appear to tolerate short periods of shallow flooding in natural areas but not in reconstructed wet areas.

Wildlife Value

Provides waterfowl cover. Attracts butterflies and honeybees.

Application/Zone

Used on moderate side slopes in prairie matrix. Used in upper shoreline zones and for upland slope buffer stabilization.

Availability, Establishment, and Maintenance

- Transplants, achenes, and rootstocks are available from several commercial vendors.
- Fresh achenes or achenes stored dry produce 95-100% germination in 3-8 days. Moist stratification of fresh achenes benefits germination. Drill or broadcast achenes in the fall and cover them lightly with soil for natural stratification.
- Mature plants may be divided in late fall or early spring. Pinching back young growth before July will cause plants to bush out. Spring cuttings of 1.5-2 inches may be rooted in sand.
- An April-May drawdown stimulates seed germination and plant growth. New England Aster can be aggressive and form monocultures.

New England Aster

Aster novae-angliae

Mature Height

1-6.5 feet

Plant Type

Perennial herb

Indicator Status

Facultative Wet

pH

5.5-7

Nutrient Load Tolerance

Moderate

Salt Tolerance

Low

Siltation Tolerance

Moderate

Flowering Color and Time

Violet/purple, yellow center
-greenhouse grown plants
may vary in color
August to October-

Light Preference

Partial to full sun

Seeding Rate

.03 - .2 lbs/acre



Bidens cernua

Nodding Beggarsticks

Nodding Bur Marigold

Preferred Water Depth and Inundation Tolerance

Prefers saturated soil. Species tolerates seasonally flooded conditions for short durations.

Wildlife Value

Provides wildlife cover. Waterfowl, shorebirds, songbirds, and small mammals consume achenes.

Application/Zone

Used in upper shoreline zones and in vegetated swales. A good pioneer species.

Availability, Establishment, and Maintenance

- Plants and achenes are available from commercial vendors.
- Achenes should be broadcast on wet mudflats or shorelines and raked into the soil.
- Achenes require cold (34-36° F) moist stratification for several months before being exposed to warm temperatures for optimum germination.
- Achenes may be fall planted after drawdown on mudflats or shorelines to allow winter exposure. Drawdown in early summer will cause explosive growth from fall planted achenes.
- Early summer shallow flooding followed by drawdown promotes best seed production from established plants.

Nodding Beggarsticks

Bidens cernua

Nodding Bur Marigold

Mature Height

4 inches - 3.3 feet

Plant Type

Annual emergent herb

Indicator Status

Obligate

pH

Not available

Nutrient Load Tolerance

Moderate

Salt Tolerance

Low to moderate

Siltation Tolerance

Moderate to high

Flowering Color and Time

Yellow

August to October

Light Preference

Partial to full sun

Seeding Rate

.25 - .5 lbs/acre



Bidens frondosa

Common Beggarsticks

Preferred Water Depth and Inundation Tolerance

Prefers moist soil. Growth is favored by a 75-90% soil moisture content. Young plants have no tolerance for submergence and should not be flooded for more than 2 or 3 days in 1-2 inches of water. Mature plants have some tolerance for water level fluctuation. This species shares the same zone with *Aster lanceolatus*.

Wildlife Value

Provides cover and food. Achenes are eaten by mallard ducks and ruffed grouse. Plants are eaten by muskrats.

Application/Zone

Used in upper shoreline zones, upland slope buffers, and in vegetated swales.

Availability, Establishment, and Maintenance

- Achenes are available from commercial vendors.
- Achenes have a high rate of germination after cold, moist stratification at 32-34° F for several months and spring planting.
- Fresh achenes may also be fall planted by broadcasting and raking into soil for natural stratification.
- Mid to late season drawdown (May -July) stimulates seed production from mature plants.

Common Beggarsticks

Bidens frondosa

Mature Height

8 inches - 4 feet

Plant Type

Annual emergent herb

Indicator Status

Facultative Wet

pH

Wide range

Nutrient Load Tolerance

Moderate

Salinity Tolerance

Moderate to high

Siltation Tolerance

High

Flowering Color and Time

Yellow

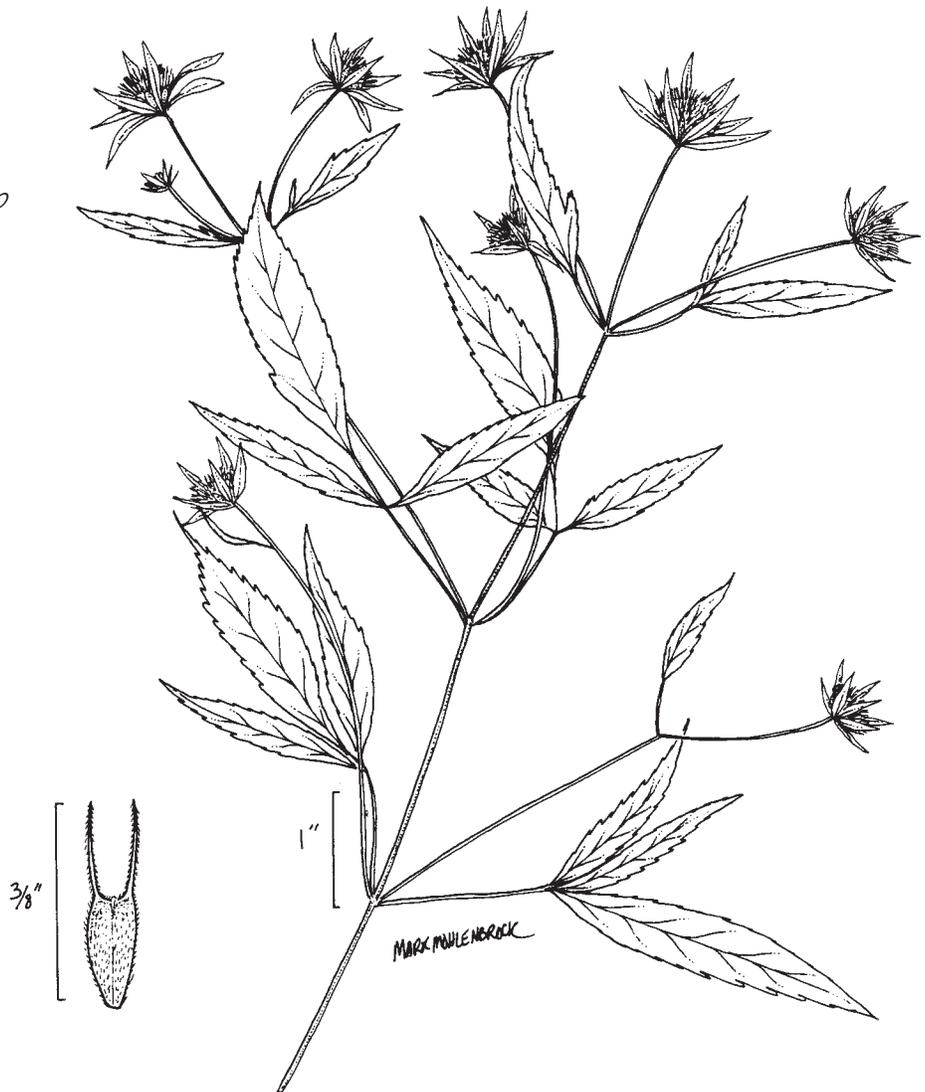
August to October

Light Preference

Partial to full sun

Seeding Rate

.125 lbs/acre



Bouteloua curtipendula

Side-Oats Gramma

Preferred Water Depth and Inundation Tolerance

Mesic to dry prairie and savanna species. Species has no inundation tolerance.

Wildlife Value

Provides nutritious grass for grazing and is tolerant to limited grazing. Attracts birds and provides cover for grassland birds.

Application/Zone

Used for upland slope buffers. Dense rhizomatous root system works well on steep slopes to prevent erosion.

Availability, Establishment, and Maintenance

- For warm season planting, seed or divisions work well.
- Germinates easily from seed in most cases.

Side-Oats Grama

Bouteloua curtipendula

Mature Height

1-3 feet

Plant Type

Perennial tufted grass

Indicator Status

Upland

pH

Wide range

Nutrient Load Tolerance

Low

Salt Tolerance

Not tolerant

Siltation Tolerance

Low, found naturally on slopes.

Flowering Color and Timing

Purplish

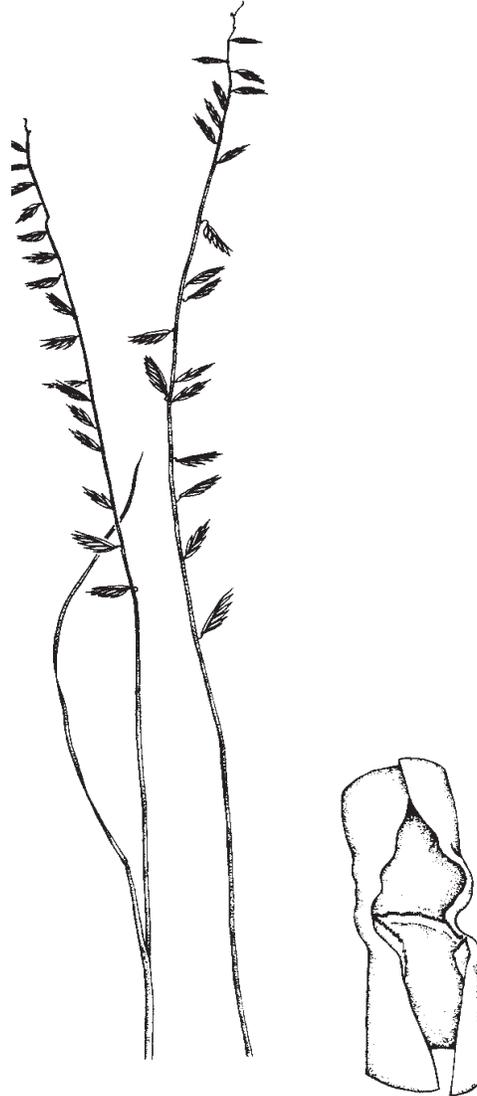
July to September

Light Preference

Full sun

Seeding Rate

5 lbs/acre



Calamagrostis canadensis

Blue Joint Grass

Preferred Water Depth and Inundation Tolerance

Prefers saturated soil. Tolerates temporary spring flooding up to a depth of 6 inches early in the season. Species does not tolerate permanent flooding.

Wildlife Value

Waterfowl eat seeds. Young plants are grazed by deer and muskrats.

Application/Zone

Used in upper shoreline zones and in vegetated swales.

Availability, Establishment, and Maintenance

- Locally, plugs have been most successful. These should be planted on 0.5-1.5 foot centers because of their slow spread by rhizomes.
- Soil should be moist to saturated, but not inundated during planting.
- Established stands may be mowed in alternate years for maintenance.
- *C. canadensis* rarely produces seed and even when it does, the seed is rarely viable.
- Can spread aggressively by rhizome under optimal conditions.

Blue Joint Grass

Calamagrostis canadensis

Mature Height

2-5 feet

Plant Type

Perennial grass

Indicator Status

Obligate

pH

5-8

Nutrient Load Tolerance

Low

Salt Tolerance

Low

Siltation Tolerance

Moderate

Flowering Color and Time

Brown

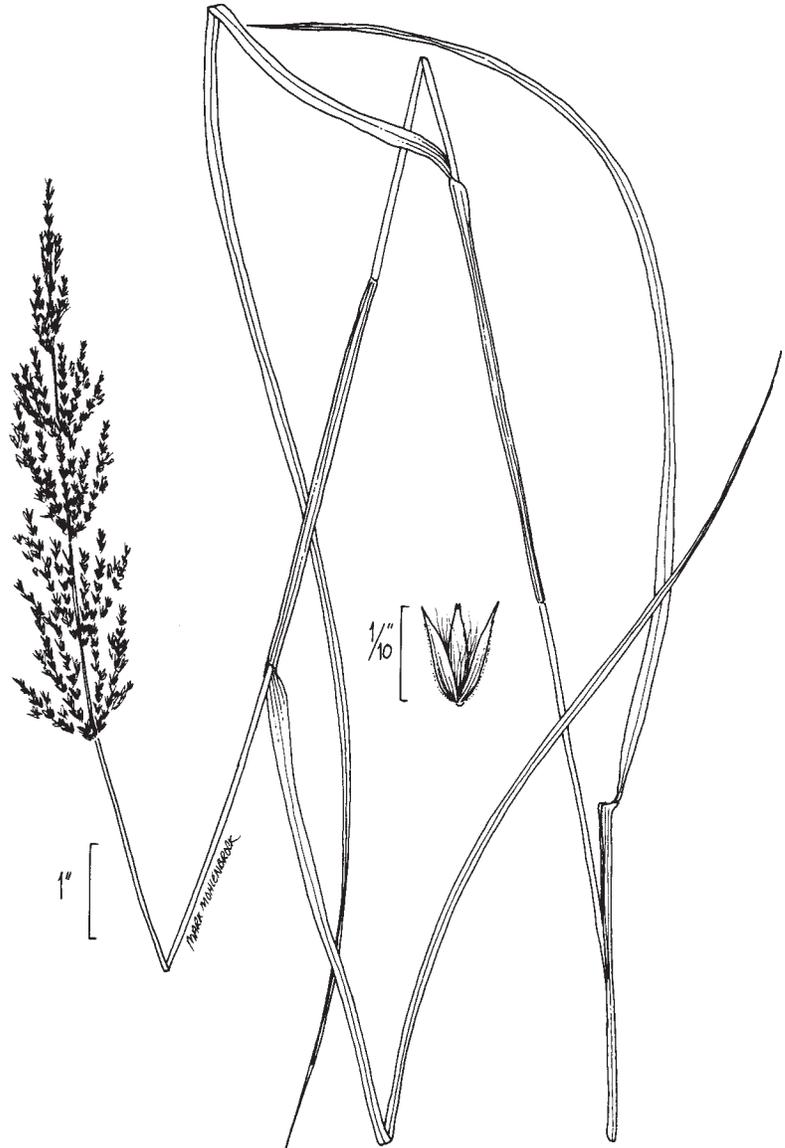
May to August

Light Preference

Full sun

Seeding Rate

.03 - .06 lbs/acre



Carex comosa

Bristly Sedge

Preferred Water Depth and Inundation Tolerance

Prefers 0 - 12 inches. Species tolerates early seasonal flooding.

Wildlife Value

Fruits are eaten by waterfowl. Also provides food for sora and yellow rails, swamp and tree sparrows, snipe and other song birds.

Application/Zone

Used in upper shoreline zones. Marsh species that forms clumps.

Availability, Establishment, and Maintenance

- Plugs seem to work best. Plant on 0.5-1.5 foot centers because of slow rate of spread.
- There are some known cases of seed germination in restored wet areas.
- Cold, moist stratification may be needed for seeds.

Bristly Sedge

Carex comosa

Mature Height

1.5-4.0 feet

Plant Type

Perennial sedge

Indicator Status

Obligate

pH

Not available

Nutrient Load Tolerance

Low

Salt Tolerance

Low

Siltation Tolerance

Not tolerant

Flowering Color and Time

Green

May to July

Light Preference

Partial to full sun

Seeding Rate

.125 lbs/acre



Carex cristatella

Crested Oval Sedge

Preferred Water Depth and Inundation Tolerance

Prefers moist soil. Species tolerates up to 6 inches of standing water.

Wildlife Value

Achenes are eaten by waterfowl.

Application/Zone

Good pioneer species for upper shoreline zones and vegetated swales.

Availability, Establishment, and Maintenance

- Spreads quickly using fresh seed.

Crested Oval Sedge

Carex cristatella

Mature Height

Up to 3 feet

Plant Type

Perennial sedge

Indicator Status

Facultative Wet (+)

pH

Not available

Nutrient Load Tolerance

Moderate

Salt Tolerance

Not available

Siltation Tolerance

Low

Flowering Color and Time

Green

May to July

Light Preference

Partial to full sun

Seeding Rate

.125 lbs/acre



Carex granularis

Pale Sedge

Preferred Water Depth and Inundation Tolerance

Prefers moist soil. Species tolerates 1 inch of standing water for short durations. *C. granularis* is a flatwood and fen species.

Wildlife Value

Not available.

Application/Zone

Used in partially shaded upper shoreline zones.

Availability, Establishment, and Maintenance

- Has been observed recovering from soil seed bank.
- Germination is best from fresh seed.
- Store seed dry (14% moisture) cold, overwinter, and sow the following spring.

Pale Sedge

Carex granularis

Mature Height

0.5 - 2 feet

Plant Type

Perennial sedge

Indicator Status

Facultative Wet (+)

pH

Not available

Nutrient Load Tolerance

Low to moderate

Salt Tolerance

Low

Siltation Tolerance

Not tolerant

Flowering Color and Time

Green

April to July

Light Preference

Partial to full sun

Seeding Rate

.031 lbs/acre



Carex lanuginosa

(C. pellita)

Wooly Sedge

Preferred Water Depth and Inundation Tolerance

Prefers moist soil. Species tolerates shallow (0 to 6 inches) inundation early in the season.

Wildlife Value

Achenes are eaten by waterfowl, sora and yellow rails, swamp and tree sparrows, snipe, and other songbirds.

Application/Zone

Used in upper shoreline zones and in vegetated swales.

Availability, Establishment, and Maintenance

- Fresh seed, rhizomes or divisions of plug clumps may all be used for propagation.
- This species has limited market availability.
- Fall seed with fresh seed or cold, moist stratify.

Woolly Sedge

Carex lanuginosa

(*C. pellita*)

Mature Height

1-3 feet

Plant Type

Perennial sedge

Indicator Status

Obligate

pH

Not available

Nutrient Load Tolerance

Moderate to high

Salt Tolerance

Low

Siltation Tolerance

Moderate

Flowering Color and Time

Green

April to July

Light Preference

Full sun

Seeding Rate

Not available



Carex stipata

Awl-fruited Sedge

Common Fox Sedge

Preferred Water Depth and Inundation Tolerance

Prefers moist soil. Tolerates inundation to a depth of 6 inches. Species tolerates some water level fluctuation.

Wildlife Value

Provides food for sora and yellow rails, swamp and tree sparrows, snipe and other songbirds.

Application/Zone

Used in upper shoreline zones and vegetated swales.

Availability, Establishment, and Maintenance

- Spreads well from seeds.
- Store seed dry (14% moisture) cold, overwinter, and sow the following spring.
- Fall seed with fresh seed.
- Because this is a clump-forming species and has a slow rate of spread by rhizomes, plugs should be planted on 0.5-1.5 foot centers.

Carex vulpinoidea

Fox Sedge

Brown Fox Sedge

Preferred Water Depth and Inundation Tolerance

Prefers water depth of 6 inches or less. Species does not tolerate extended inundation but does tolerate some fluctuation. Tolerates standing water in the spring and early summer.

Wildlife Value

Provides food for sora and yellow rails, swamp and tree sparrow, snipe and other songbirds.

Application/Zone

Used in upper shoreline zones, for streambank stabilization, and in vegetated swales.

Availability, Establishment, and Maintenance

- Seeds, rootstock, and whole plants are available.
- Readily established by seed. Seeds can be stratified by either late fall planting for overwintering or cold, dry storage.
- Seed should remain close to the soil surface because they need light for germination.
- Transplants or small clumps should be planted from early spring to June 15.
- Transplants should be planted on 0.5-1.5 foot centers because of slow rate of spread.

Preferred Water Depth and Inundation Tolerance

This is a floodplain forest and flatwoods species (1st terrace). Seedlings cannot tolerate submergence, but mature trees can survive spring flooding.

Wildlife Value

Fruits are eaten by birds and small mammals. Serves as an exclusive food source of the hackberry and snout butterflies.

Application/Zone

Used in upper shoreline zones, for streambank stabilization, and upland slope buffers.

Availability, Establishment, and Maintenance

- Easily transplanted bareroot as small tree or balled and burlapped as a larger tree.
- Seeds should be stratified for 60-90 days at 41° F in a moist medium.
- Growth rate is medium, 22-30 inches per year.

Hackberry

Celtis occidentalis

Mature Height

Up to 80 feet

Plant Type

Deciduous tree

Indicator Status

Facultative (-)

pH

6.6-8.0

Nutrient Load Tolerance

Moderate

Salt Tolerance

Moderate

Siltation Tolerance

Low to moderate

Flowering Color and Time

Greenish yellow

April to May

Light Preference

Shade tolerant

Seeding Rate

Not applicable



Cephalanthus occidentalis

Common Buttonbush

Preferred Water Depth and Inundation Tolerance

Preferred water depth is 2-3 feet. Species tolerates permanently to semi-permanently flooded conditions. Ten inch tall seedlings can survive complete submergence for up to 45 days.

Wildlife Value

Seeds are eaten by waterfowl. Seed also provides food for insects, beaver, and muskrats. Plants provide nectar source and habitat for insects. Also provides nesting habitat for birds. Browsed by deer, muskrats, and beaver. Provides reptile habitat.

Application/Zone

Used in upper and lower shoreline zones and for streambank stabilization.

Availability, Establishment, and Maintenance

- Transplants and seed have limited availability from vendors. Collect seed in August-September and store in fresh water at 34° F.
- Seed can be planted in wet mudflats or shorelines and requires light for germination.
- Plants establish easily from cuttings, but cuttings should be rooted before flooding.
- Rooted cuttings survive well. Small plants or seedlings may be transplanted directly on the site at 5 feet on center density.
- Growth rate is medium, 1-2 feet per year.
- This species can form monocultures.

Common Buttonbush

Cephalanthus occidentalis

Mature Height

3-10 feet

Plant Type

Deciduous shrub

Indicator Status

Obligate

pH

6.0-8.5

Nutrient Load Tolerance

Moderate

Salt Tolerance

Moderate to high

Siltation Tolerance

Moderate

Flowering Color and Time

White

June to August

Light Preference

Partial to full sun

Tolerates full shade but may decline

Seeding Rate

Not applicable



Coreopsis tripteris

Tall Coreopsis

Preferred Water Depth and Inundation Tolerance

Wet and mesic prairie and savanna species. Survives 1 inch inundation for short periods.

Wildlife Value

Serves as a good nectar source. Attracts butterflies.

Application/Zone

Used for upland slope buffer stabilization.

Availability, Establishment, and Maintenance

- Readily available from vendors.
- No pretreatment is needed for seeds.
- Establishes readily and spreads quickly from seed.
- In some cases, can be aggressive.

Tall Coreopsis

Coreopsis tripteris

Mature Height

3-10 feet

Plant Type

Perennial herb

Indicator Status

Facultative

pH

Not available

Nutrient Load Tolerance

Low

Salt Tolerance

Not available

Siltation Tolerance

Low

Flowering Color and Time

Yellow

July to October

Light Preference

Partial to full sun

Seeding Rate

Not available



Cornus racemosa

Gray Dogwood

Preferred Water Depth and Inundation Tolerance

Prefers moist to saturated soil. Inundation of 2-4 inches is tolerated for short durations.

Wildlife Value

Fruits are eaten by birds. Provides browse and food for deer, beaver, pheasant, rabbit, woodchuck, raccoon, and squirrel. Also provides cover for American woodcock.

Application/Zone

Used in upper shoreline zones, for streambank stabilization, and for upland slope buffers.

Availability, Establishment, and Maintenance

- Seed germinates easily only after scarification.
- Shrub spreads by underground stems to form round 8-12 feet wide colonies.
- Easily rooted from cuttings.
- Has a fast growth rate. Shoots grow 3 to 6 feet in one season. This species can become too aggressive.

Gray Dogwood

Cornus racemosa

Mature Height

Up to 8 feet

Plant Type

Deciduous multistemmed shrub

Indicator Status

[Facultative Wet (-)]

pH

5.5-8.5

Nutrient Load Tolerance

Moderate to high

Salt Tolerance

Low

Siltation Tolerance

Moderate to high

Flowering Color and Time

White

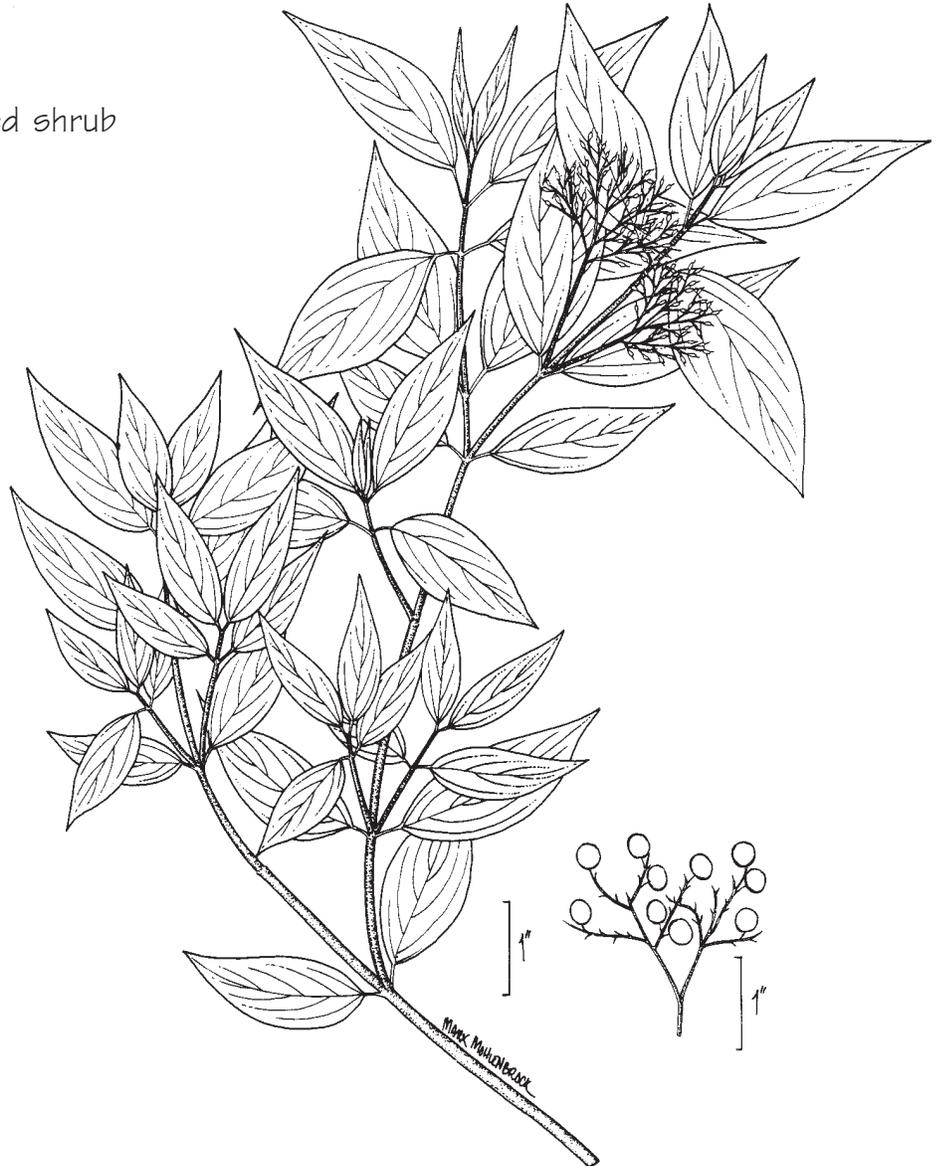
June to August

Light Preference

Partial to full sun

Seeding Rate

Not applicable



Cornus sericea

(C. stolonifera)

Red Osier Dogwood

Preferred Water Depth and Inundation Tolerance

Prefers saturated soil. Species tolerates periodic inundation of 0-12 inches early in the season for short durations. During growing season, this species will tolerate constant inundation for less than 30 days.

Wildlife Value

Berries are eaten by many songbirds and ruffed grouse. Deer and rabbits browse twigs and buds. Thickets provide cover and nesting habitat. Provides excellent warbler habitat. Also provides food for raccoon, woodchuck, and beaver.

Application/Zone

Used in upper shoreline zones, for streambank stabilization, and upland slope buffers.

Availability, Establishment, and Maintenance

- Excellent seedling establishment. Very easy to propagate.
- Widely available as bare root or balled and burlapped.
- Can root from cuttings.
- Spreads by stolons. Fast growth rate, more than 2 feet per year.

Red Osier Dogwood

Cornus sericea

(*C. stolonifera*)

Mature Height

3-9 feet

Plant Type

Deciduous shrub

Indicator Status

Facultative Wet

pH

5.5-8.5

Nutrient Load Tolerance

Moderate to high

Salt Tolerance

Not tolerant

Siltation Tolerance

Moderate to high

Flowering Color and Time

White

May and August

Light Preference

Partial to full sun

Seeding Rate

Not applicable



Cyperus esculentus

Field Nut Sedge

Yellow Nut Sedge;
Chufa

Preferred Water Depth and Inundation Tolerance

Tolerates seasonal or occasional flooding, up to 1 foot deep.

Wildlife Value

Seeds are eaten by waterfowl and other wildlife. Also provides cover for reptiles, amphibians, and small mammals. Waterfowl also eat rhizomes.

Application/Zone

Used in lower and upper shoreline zones where water levels fluctuate.

Availability, Establishment, and Maintenance

- Available as seed, rootstock (tuber), or transplants.
- Grows readily from seed on moist soil (mudflats).
- Draw-down stimulates new growth from tubers.
- A common plant of farmed wet areas.

Field Nut Sedge

Cyperus esculentus

Yellow Nut Sedge;
Chufa

Mature Height

1 - 2 feet

Plant Type

Perennial sedge

Indicator Status

Facultative Wet

pH

5.0-7.5

Nutrient Load Tolerance

High

Salt Tolerance

Low

Siltation Tolerance

High

Flowering Color and Time

Yellow

Mid-July - August

Light Preference

Full sun

Seeding Rate

Not available



Eleocharis obtusa

Blunt Spike Rush

Preferred Water Depth and Inundation Tolerance

Mudflat species. Needs saturated soil. Species tolerates inundation to a depth of 6 inches.

Wildlife Value

Rhizomes and achenes are eaten by waterfowl. Also provides food for rails, muskrat, and rabbit.

Application/Zone

Used in upper shoreline zones, for streambank stabilization, and in vegetated swales.

Availability, Establishment, and Maintenance

- Annual. Spreads by seed where there is no competition.
- Requires drawdown for seeds to germinate.

Blunt Spike Rush

Eleocharis obtusa

Mature Height

12-18 inches

Plant Type

Annual tufted herb

Indicator Status

Obligate

pH

Not available

Nutrient Load Tolerance

Moderate to high

Salt Tolerance

Low to moderate

Siltation Tolerance

Low

Flowering Color and Time

Brown

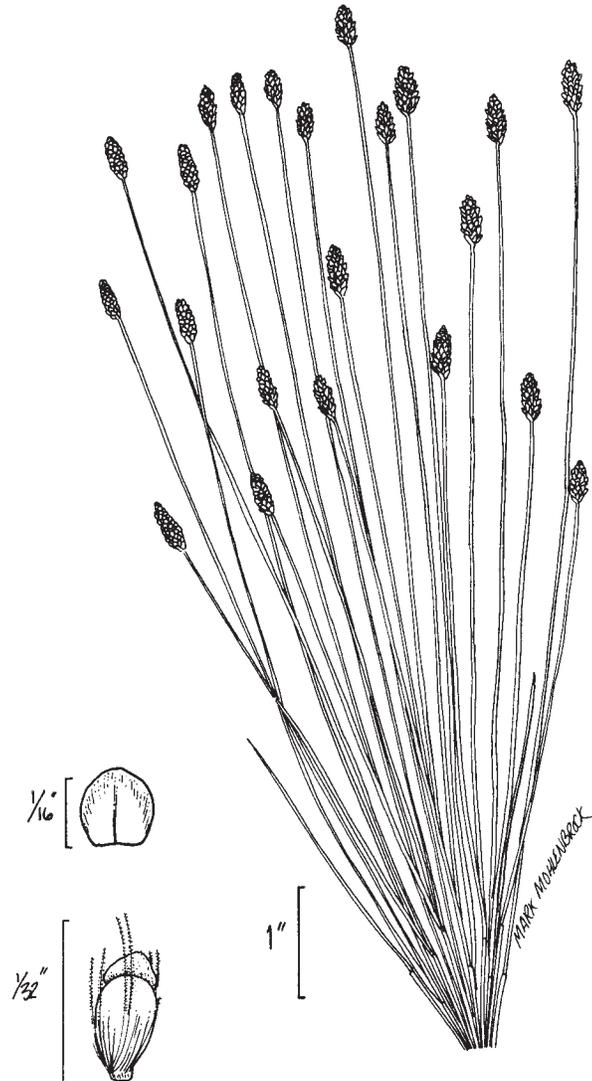
June to October

Light Preference

Full sun

Seeding Rate

.02 - .4 lbs/acre



Eleocharis smallii

Creeping Spike Rush

Marsh Spike Rush

Preferred Water Depth and Inundation Tolerance

Mudflat species. This species needs saturated soil.

Wildlife Value

Achenes are eaten by waterfowl.

Application/Zone

Extensive creeping rhizomes can stabilize upper shoreline zones and streambanks.

Availability, Establishment, and Maintenance

- Perennial, spreads by seed where competition is reduced.
- Sow fresh seed on mudflats (under drawdown condition).

Creeping Spike Rush

Marsh Spike Rush

Eleocharis smallii

Mature Height

12-18 inches

Plant Type

Perennial herb

Indicator Status

Obligate

pH

Not available

Nutrient Load Tolerance

Low

Salt Tolerance

Moderate

Siltation Tolerance

Low

Flowering Color and Time

Brown

June to September

Light Preference

Full sun

Seeding Rate

.02 - .4 lbs/acre



Elymus canadensis

Nodding Wild Rye

Canada Wild Rye

Preferred Water Depth and Inundation Tolerance

Mesic species. Prefers moderately well to poorly drained soil. Minimal inundation tolerance.

Wildlife Value

Provides habitat for small mammals. Vegetative parts are palatable to grazing species.

Application/Zone

Fibrous, wide spreading root system can stabilize upper shoreline zones, streambanks, upland slope buffers, and vegetated swales. Also a good pioneer species.

Availability, Establishment, and Maintenance

- Seed is widely available from commercial vendors.
- Seeding is recommended. Seed germination is better if seeds are stratified for one month at 32° F. Best germination of seed occurs if they are drilled into soil to a depth of 1-1.5 inches.
- Rangeland drill or hopper type seed broadcaster may be used to plant seeds. If broadcasting, seeds must be covered lightly with soil. Mixing seed with sand and other grass and forb species dispersed with a hand hopper or cyclone spreader facilitates establishment of prairie species in small areas.
- One source recommends planting at 0.5 to 1.0 lbs/acre because the species is too short-lived and expensive to plant at a heavier rate. A complete stand will result in two to three years if planted at this rate.
- Spreads quickly from seed but dies back after a few years.

Nodding Wild Rye

Canada Wild Rye

Elymus canadensis

Mature Height

3-6 feet

Plant Type

Perennial grass

Indicator Status

Facultative (-)

pH

Wide range

Nutrient Load Tolerance

Low

Salt Tolerance

Not available

Siltation Tolerance

Low

Flowering Color and Time

Tan

July to October

Light Preference

Partial to full sun

Seeding Rate

.02 - 2 lbs/acre



Elymus virginicus

Virginia Wild Rye

Preferred Water Depth and Inundation Tolerance

Prefers moist soil. Species tolerates inundation up to a depth of 6 inches. Can also tolerate dry soils.

Wildlife Value

Palatable to grazing species.

Application/Zone

Used in upper shoreline zones, for streambank stabilization, for upland slope buffers, and in vegetated swales.

Availability, Establishment, and Maintenance

- Fall and spring seeding is successful.
- Can become aggressive if seeded too heavily.

Virginia Wild Rye

Elymus virginicus

Mature Height

Up to 3 feet

Plant Type

Perennial grass

Indicator Status

Facultative Wet (-)

pH

Not available

Nutrient Load Tolerance

Moderate

Salt Tolerance

Not available

Siltation Tolerance

Moderate

Flowering Color and Time

Tan

June to October

Light Preference

Partial to full sun

Seeding Rate

.06 - 1.0 lbs/acre



Eupatorium maculatum

Spotted Joe Pye Weed

Preferred Water Depth and Inundation Tolerance

Prefers moist soil. Tolerates inundation up to a depth of 6 inches early in the season, as in damp meadows, open marshes, and fens. Tolerates flooding for short periods in the spring.

Wildlife Value

Attracts butterflies, bumblebees, and many other insects. Provides cover for small mammals, amphibians, and reptiles. Seeds are eaten by swamp sparrow.

Application/Zone

Used in upper shoreline zones and in vegetated swales.

Availability, Establishment, and Maintenance

- Seed works best and is readily available from commercial vendors.
- Seed has spotty germination. No treatment is necessary. Sow seed in the fall or early spring when ground is cool.
- Seed is very fine and should be planted on the soil surface.
- Division of plants, if desired, should be done in the spring but only every 2 to 4 years.

Spotted Joe Pye Weed

Eupatorium maculatum

Mature Height

4-6 feet

Plant Type

Perennial herb

Indicator Status

Obligate

pH

Not available

Nutrient Load Tolerance

Low

Salt Tolerance

Not available

Siltation Tolerance

Low

Flowering Color and Time

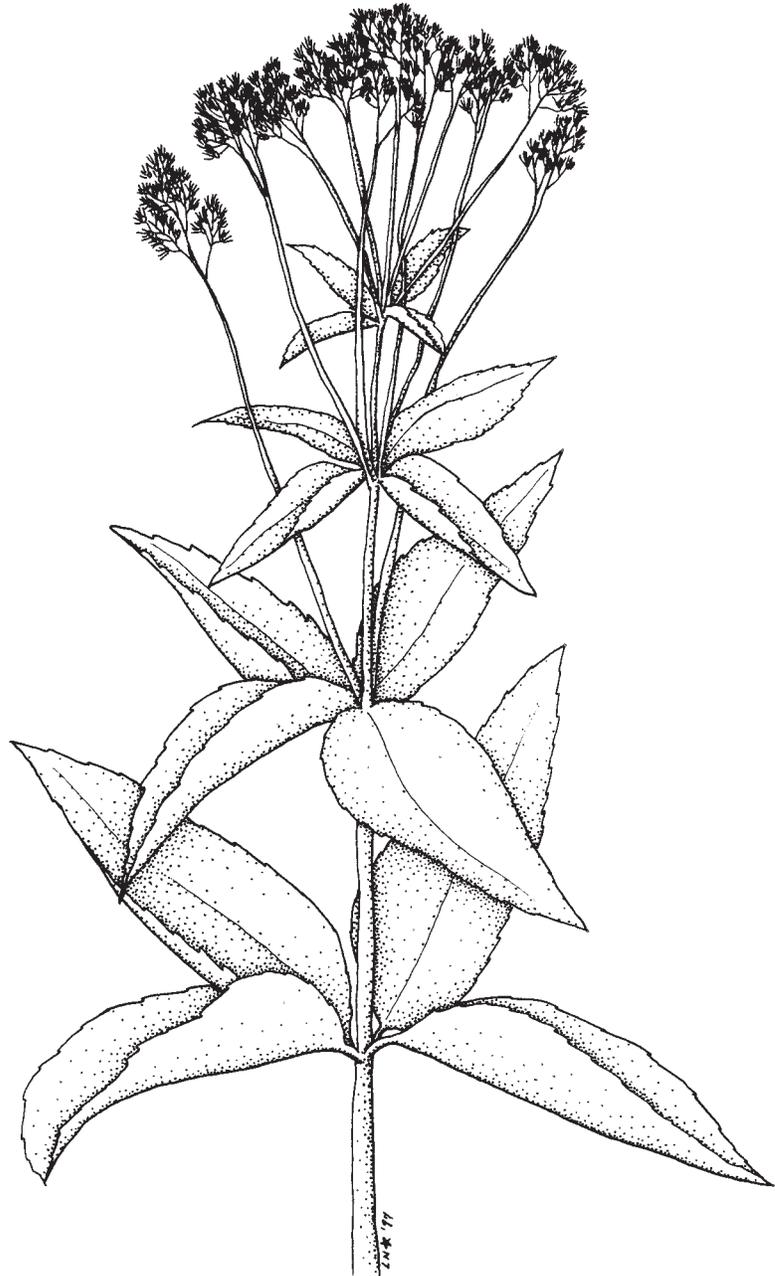
Deep rose to light pink
June to September

Light Preference

Full sun

Seeding Rate

.06 - 2.0 lbs/acre



Eupatorium perfoliatum

Common Boneset

Preferred Water Depth and Inundation Tolerance

Prefers moist soil. Tolerates inundation to a depth of 6 inches early in the season, as found in wet meadows, marsh edges, fens, and prairie swales.

Wildlife Value

Achenes are eaten by waterfowl, turkey, and swamp sparrow. Mallards and grouse eat leaves. Attracts butterflies. Also provides cover for small mammals, reptiles, and amphibians.

Application/Zone

Used in upper shoreline zones and in vegetated swales. Fibrous root system binds soil and resists erosion. Provides good ground cover.

Availability, Establishment, and Maintenance

- Seed is best. Sow fine seed on soil surface in the fall or spring. No germination treatment is necessary.
- Can also be propagated by division of rootstock in the fall or spring.

Common Boneset

Eupatorium perfoliatum

Mature Height

2-3 feet

Plant Type

Perennial herb

Indicator Status

Facultative Wet (+)

pH

Not available

Nutrient Load Tolerance

Low to moderate

Salt Tolerance

Not available

Siltation Tolerance

Low to moderate

Flowering Color and Time

White

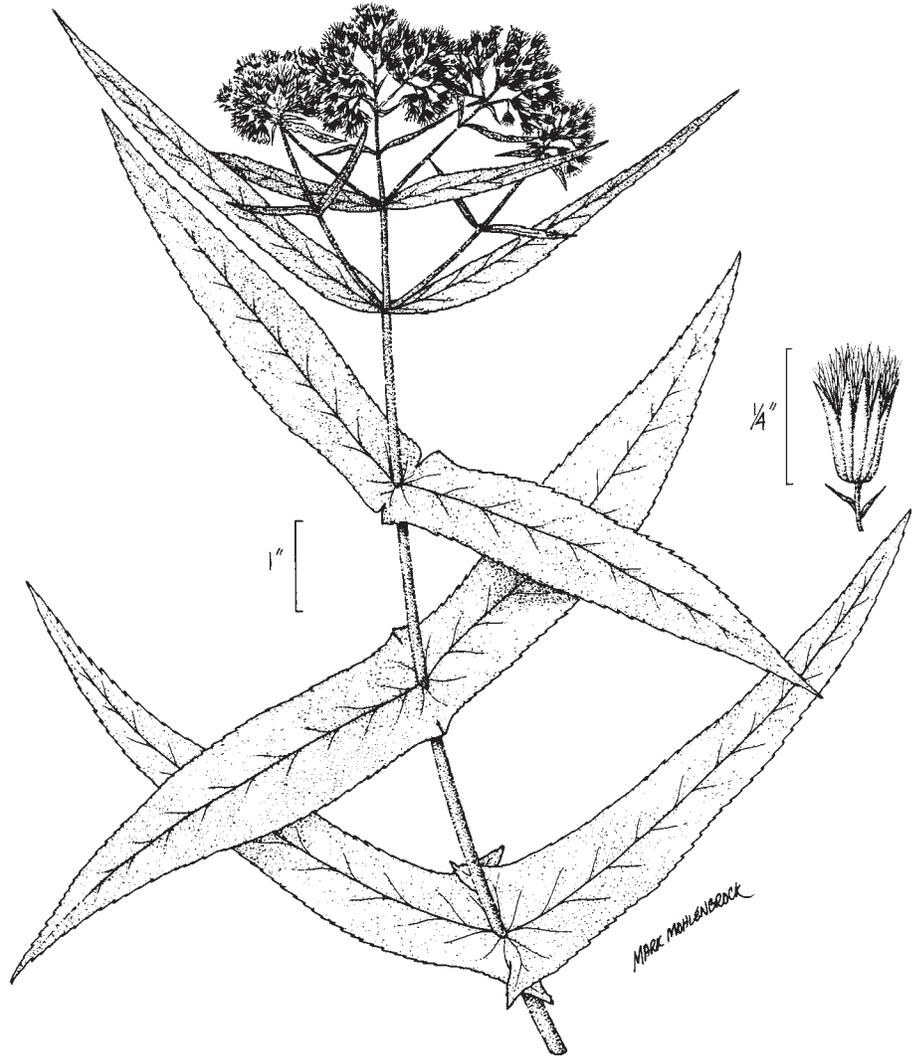
August to October

Light Preference

Full sun

Seeding Rate

.125 lbs/acre



Fraxinus pennsylvanica

(F. pennsylvanica subintegerrima)

Green Ash

Preferred Water Depth and Inundation Tolerance

Natural floodplain species. Species tolerates periodic inundation of 0-24 inches for short durations.

Wildlife Value

Twigs and seeds provide forage for mammals, such as deer, beaver, and mice. Birds eat seeds and the tree provides nesting habitat. Fallen logs provide amphibian and reptile habitat. Also provides habitat for many insects.

Application/Zone

Used for streambank and upland slope buffer stabilization.

Availability, Establishment, and Maintenance

- Transplants readily and establishes itself well.
- Best seed germination has been seen after dry storage at 40° F followed by 70° F.
- Tolerates drought and sterile soils. Has fast growth rate, 2.5-3 feet per year.
- Spreads quickly by seed.

Green Ash

Fraxinus pennsylvanica

(*F. pennsylvanica subintegerrima*)

Mature Height

Up to 60 feet

Plant Type

Deciduous tree

Indicator Status

Facultative Wet

pH

6.1-7.5

Nutrient Load Tolerance

High

Salt Tolerance

Moderate

Siltation Tolerance

High

Flowering Color and Time

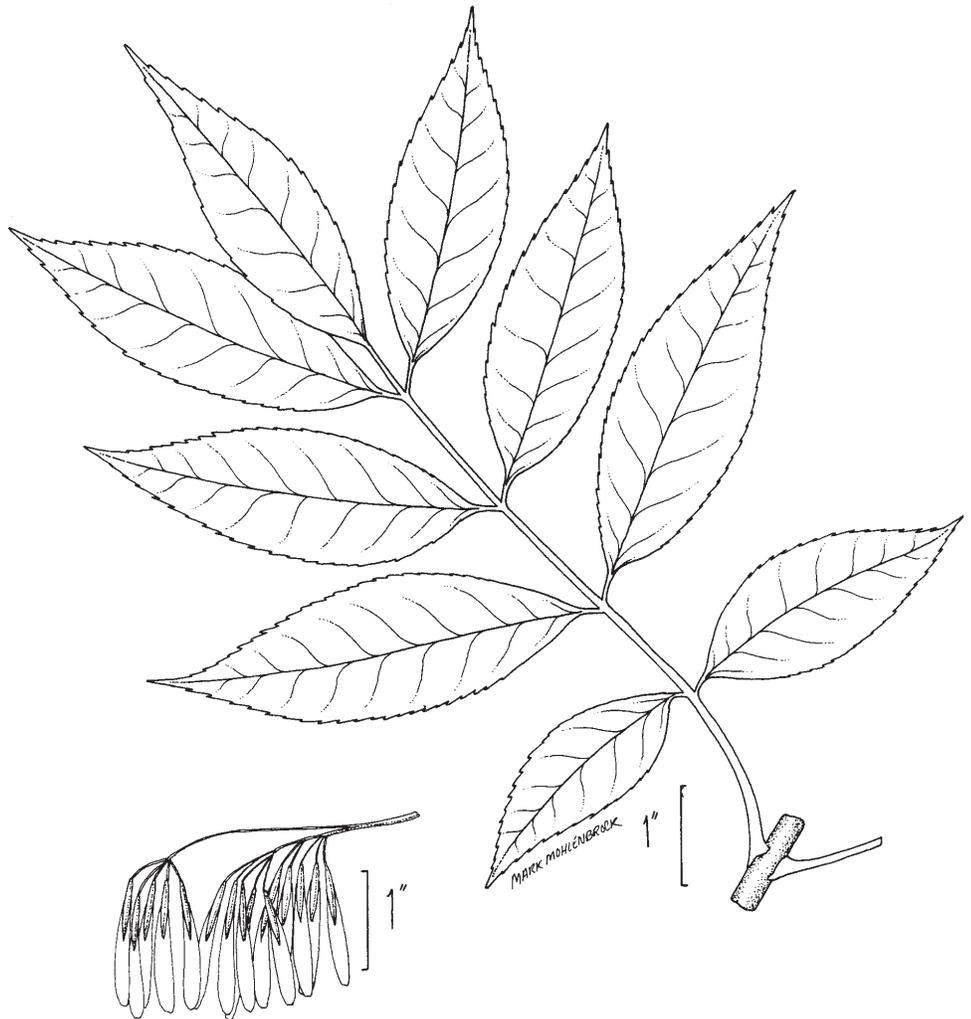
April to May

Light Preference

Shade tolerant

Seeding Rate

Not applicable



Glyceria striata

Fowl Manna Grass

Preferred Water Depth and Inundation Tolerance

Prefers moist to saturated areas.

Wildlife Value

Provides food for waterfowl, especially ducks, and for muskrat and deer.

Application/Zone

Good pioneer species in upper shoreline zones, for streambank stabilization, and in vegetated swales.

Availability, Establishment, and Maintenance

- Good availability, but may not be a northeastern Illinois ecotype.
- Good establishment from seed, but less competitive against reed canary grass.
- Cold, moist stratification helps break dormancy of seed. Cold storage in water for three months or fall planting to allow overwintering provides good germination.
- Mixing seed with sand facilitates hand broadcasting and results in more even planting.
- Transplants are best planted in the spring.
- Requires light for seed germination.

Fowl Manna Grass

Glyceria striata

Mature Height

1-4 feet

Plant Type

Perennial grass

Indicator Status

Obligate

pH

Not available

Nutrient Load Tolerance

Low to moderate

Salt Tolerance

Low

Siltation Tolerance

Moderate

Flowering Color and Time

Green

May to August

Light Preference

Full shade to partial sun

Seeding Rate

.06 - .5 lbs/acre



Helenium autumnale

Common Sneezeweed

Preferred Water Depth and Inundation Tolerance

Prefers moist to saturated soil. Tolerates brief, shallow inundation like that found in wet prairies, fens, and sedge meadows.

Wildlife Value

Attracts butterflies and provides cover.

Application/Zone

Fibrous root system can help stabilize upper shoreline zones, streambanks, and vegetated swales.

Availability, Establishment, and Maintenance

- Propagate by divisions or seed in the spring.
- Seed is widely available from commercial vendors.
- Excellent germination of seed occurs within 4 weeks.

Common Sneezeweed

Helenium autumnale

Mature Height

3-5 feet

Plant Type

Perennial herb

Indicator Status

Facultative Wet (+)

pH

6-7

Nutrient Load Tolerance

Moderate to high

Salt Tolerance

Not available

Siltation Tolerance

Moderate to high

Flowering Color and Time

Yellow

August to November

Light Preference

Full sun to partial shade

Seeding Rate

.12- .5 lbs/acre



Helianthus grosseserratus

Sawtooth Sunflower

Preferred Water Depth and Inundation Tolerance

Prefers moist to saturated soil. Species tolerates seasonal inundation like that found in sedge meadows and wet prairies.

Wildlife Value

Provides nectar and pollen for bees and other insects. Achenes are eaten by insects, birds, and small mammals. Also provides reproduction and foraging habitat for Gorgone checkerspot butterfly.

Application/Zone

Used for soil stabilization in upper shoreline zones and vegetated swales. Also a good pioneer species.

Availability, Establishment, and Maintenance

- Achenes may benefit from cold stratification.
- Plants may be subdivided in the fall and planted in a new site. Stem cuttings may be taken in the spring and rooted for transplanting.
- Achenes may be sown with a rangeland drill or a hopper style planter. Hand seeding with a small hopper may be used in small areas.
- Fall seeding works with fresh seed.
- This species has a quickly spreading growth habit and can become weedy.

Sawtooth Sunflower

Helianthus grosseserratus

Mature Height

3-13 feet

Plant Type

Perennial herb

Indicator Status

Facultative Wet (-)

pH

Not available

Nutrient Load Tolerance

Moderate

Salt Tolerance

Moderate

Siltation Tolerance

Moderate

Flowering Color and Time

Yellow to cream
July to October

Light Preference

Full sun

Seeding Rate

Not available

