



Lake County Seed Collection Guide

1

Asters and Goldenrods

Kelly Schultz¹, Dale Shields²

version 3 2/2021

¹Lake County Forest Preserve District, ²Volunteer Stewardship Network

Images ©DJS Shields. Produced by: Dale Shields & Kelly Schultz ©Lake County Forest Preserve District [kschultz@lcfpd.org]

The pictures in this guide were assembled to help restoration volunteers identify ripe seeds of native species. The squares are 1” on a side in the indoor shots with white squares on the gray background. The seed shots are on a metric scale (mm divisions). Names used are those of Flora of the Chicago Region by Gerould Wilhelm and Laura Rericha. Our heartfelt thanks go to Laurie Ryan of the McHenry County Conservation District for her review.

Harvest notes

Successful collection of viable seed requires an understanding of when to collect, how to collect, how to store, how to process, and when to sow. Determine these criteria and have a plan before harvesting seeds, especially of uncommon species. The species are listed in order of the photo dates, so will give an approximate time for collection, but collection dates vary according to local weather effects on blooming and pollinators; proximity to Lake Michigan; slopes; sun vs shade, etc. Many seed harvest charts are available with collection dates, but it is best to scout each site rather than relying on historic dates.

Seeds collected before mid-June should be sown right away. They are intolerant of dry storage and most of them require both warm & cold treatments to stimulate germination. Late June seeds are more tolerant of dry storage; sow these seeds soon, but you can let them dry for a few weeks. Seeds ripening July and later can be held for fall/winter sowing, sow by Jan 1st for best results.

Collect ethically & sustainably. Everything is protected in forest preserves, including seeds. Collection is only allowed by staff and volunteers in our restoration programs. If you are collecting within those programs, it is important to avoid overharvesting wild populations. For perennials: **leave 50% behind.** For annuals, biennials, rare, threatened, or endangered species: **collect only 10% of the seed.**

Seed Groups

Fluffy seeds are quite common, allowing for wind to efficiently move seeds over long distances. Collect when fluffy. It is ok to collect these seeds *slightly* early, by collecting entire stems with seeds that are either fully poofed or have dropped their ray florets (the colorful "petals"); snip stems and let them poof in a paper or mesh bag. Spring fluffy seeds are typically more sensitive to strong weather.



This group often gets a groan, for the visual similarity that some people find boring and many of us find challenging to identify, but these flowers are critical for feeding pollinators after other flowers have faded. Sit and watch a patch of asters on a sunny fall day, and it is teeming with life – butterflies, skippers, and bees feasting away. Prairies would be far duller without the golds, purples, and whites of the flowers. Many of them have a color changing “eye,” going from bright yellow to burgundy with the season. The seeds are simple to collect and most of the species are important for restoration mixes.

These fluffy seeds are Mama’s Boys because different seeds on the same plant will ripen over time, providing a long opportunity to harvest seed. Pro tip: watch for the first seeds; usually a few flowers are still blooming at the same time or a little color lingers around the fluff, making ID easier. The diameter of the fluffy heads is roughly the same as the diameter of the flowers. Generally, goldenrods have smaller flowers and smaller fluff than asters, but not always.



Lake County Seed Collection Guide

Asters and Goldenrods

Kelly Schultz¹, Dale Shields²

version 3 2/2021

¹Lake County Forest Preserve District, ²Volunteer Stewardship Network

Images ©DJS Shields. Produced by: Dale Shields & Kelly Schultz ©Lake County Forest Preserve District [kschultz@lcfpd.org]

Remembering the scientific names of asters and goldenrods used to be easier. Asters were in the *Aster* genus; goldenrods were in the *Solidago* genus. Now they have been split into many genera, thanks to DNA research. They have been divided by flower arrangement, and the leaf shape and arrangement. The genera in our region are described below. They are still members of the composite family (Asteraceae), and the native species have both ray and disc flowers. The tightly packed disc flowers make up the “eye” in the center, and what many people call petals are actually fertile ray florets aka ligules. The seeds have pappus (fluff) attached to them, which helps them fly away on the wind. Their leaves are simple – not deeply divided or lobed, but may be serrated – and attached alternately to the stem, or at the base of the plant.

Doellingeria asters have a flat-topped or umbrella-shaped floral array, and the ray flowers are white with yellow disc florets. The leaves are elliptic. Basal and lower stem leaves wither by the time seed is ready. In our area, flat-top aster is the only member of this genus.

Eurybia asters have a flat-topped or umbrella-shaped floral array with white to purple rays and discs that start yellow and turn purplish or brownish. The basal and stem leaves are heart-shaped.

Symphyotrichum includes most of our aster species. The floral arrangement can be any shape except flat-topped, such as club-shaped or oval or pyramidal. Ray flowers are white or some shade of blue or purple. Disc flowers usually start yellow and fade to purple or brown. Alternate leaves on stem are of various shapes, but not deeply lobed or incised.

Oligoneuron goldenrods have a flat-topped or umbrella-shaped floral array. If the ray flowers are white it’s an aster; if the ray flowers are yellow it’s a goldenrod. Leaves are simple and largest at the base, gradually reducing up the stem. Stiff aster is lumped in with these goldenrods because of its tendency to hybridize with the other members of this genus.

Euthamia goldenrods are also flat-topped goldenrods. Leaves are alternate on the stem with the lower ones dropping early, no basal leaves. The stems sprout from creeping rhizomes (horizontal roots).

Solidago goldenrods have floral arrays that are taller than wide – not flat-topped nor umbrella-shaped. Flowers are yellow. Leaves are simple, not deeply lobed or incised, and alternate. Most of our goldenrods remain in this genus.



Do Not Collect. This symbol is placed on images of non-native & invasive native seeds, which have been included as comparisons for similar native species. Do not collect these species, unless you are collecting for removal.

Asters and Goldenrods

Kelly Schultz¹, Dale Shields²

version 3 2/2021

¹Lake County Forest Preserve District, ²Volunteer Stewardship Network

Images ©DJS Shields. Produced by: Dale Shields & Kelly Schultz ©Lake County Forest Preserve District [kschultz@lcfpd.org]

Flat-top Aster

Doellingeria umbellata

ASTERACEAE



Photo: 9-20-17

Fluffy. Mama's Boy. *Doellingeria* are flat-topped asters without heart-shaped leaves or skinny linear leaves; this is the only species in our region. White flowers. Leaves are alternate, with the unusual venation seen in purple loosestrife (a pair of veins parallel to the edge and feather veins inside). Likes fens and wet to wet-mesic prairies. Can tolerate a little shade but happier in full sun. Off-white pappus.

Forked Aster

Eurybia furcata

ASTERACEAE



Photo: 9-20-17

Fluffy. Mama's Boy. *Eurybia* are flat-topped asters with heart-shaped leaves. This state threatened species has rough leaves. Basal leaves are typically smaller than your hand, and the stem leaves are fairly similar in size. Like many composite flowers, this species is self-incompatible but has decent seed production with cross-pollination. Flowers are white, pappus (seed fluff) is off-white.

Big-leaf Aster

Eurybia macrophylla

ASTERACEAE

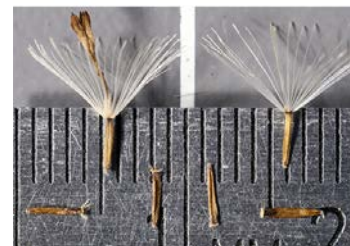


Photo: 10-6-18

Fluffy. Mama's Boy. Often a carpet of leaves bigger than your hand. A few flowering stalks with smaller leaves. Happiest in well-drained soils in canopy openings. Flowers white tinged purple; one of the first asters to bloom. Spreads by rhizomes and has allelopathic effects.

Asters and Goldenrods

Kelly Schultz¹, Dale Shields²

version 3 2/2021

¹Lake County Forest Preserve District, ²Volunteer Stewardship Network

Images ©DJS Shields. Produced by: Dale Shields & Kelly Schultz ©Lake County Forest Preserve District [kschultz@lcfpd.org]

Drummond's Aster

Symphyotrichum drummondii

ASTERACEAE

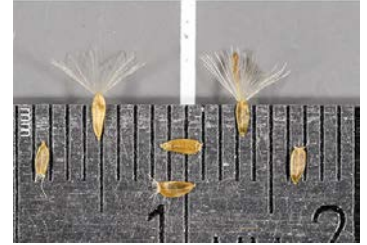


Photo: 10-25-17

Fluffy. Mama's Boy. Heart-shaped leaves with chunky teeth and winged petioles. Upper leaves tend to have rounded rather than heart-shaped bases. Stem is uniformly covered in tiny grayish hairs, especially on the upper half. Often blooms lavender-blue but can be white.

Arrow-leaved Aster

Symphyotrichum urophyllum

ASTERACEAE

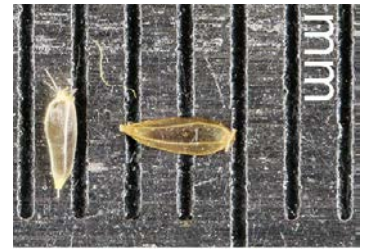


Photo: 10-4-17

Fluffy. Mama's Boy. Very similar to the more common *S. drummondii* (former variety), with heart-shaped leaves with winged petiole. *S. urophyllum* differs with stems that are hairless, or at most, hairs in the floral branches only. Phyllaries (individual floral bracts) are practically linear (*S. drummondii* phyllaries have a dilated diamond shape in the green band). This species often blooms white.

Bushy Aster
aka
Rice-button Aster

Symphyotrichum dumosum

ASTERACEAE

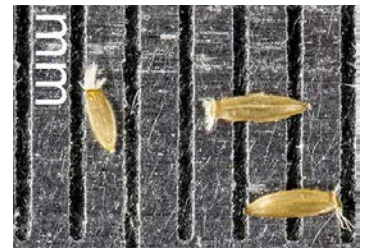


Photo: 10-13-19

Fluffy. Mama's Boy. This uncommon species favors sandy soils. Small white flowers and small upper leaves. Somewhat like the more common *S. ericoides*, but flowers are less dense and phyllaries (floral bracts) are hairless. Flowers are dotted around the plant, but solitary on the end of short branches. Plants often lean, but flowers still face the sky. Leaves are linear.

Asters and Goldenrods

Kelly Schultz¹, Dale Shields²

version 3 2/2021

¹Lake County Forest Preserve District, ²Volunteer Stewardship Network

Images ©DJS Shields. Produced by: Dale Shields & Kelly Schultz ©Lake County Forest Preserve District [kschultz@lcfpd.org]

Heath Aster

Symphotrichum ericoides

ASTERACEAE

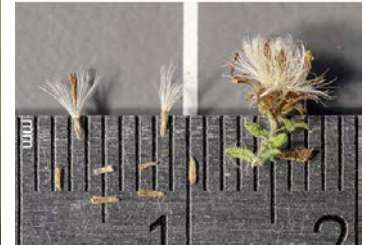


Photo: 10-16-17

Fluffy. Mama's Boy. Usually this species is readily ID'd by its petite stature (often 6-12" tall), packed with tiny flowers, and tiny leaves. But grown in decent soil with medium nutrition, this species can be MUCH bigger. If in doubt: ray florets ("petals") are typically less than 20 per flower head; involucre (green floral "cup") are no more than 5 mm tall; heads are densely packed and mostly on one side of the branch.

Smooth Blue Aster

Symphotrichum laeve

ASTERACEAE



Photo: 10-9-17

Fluffy. Mama's Boy. A waxy blue-green color to the stem and leaves, especially early in the season. Leaves with a smooth almost rubbery feel. Upper leaves clasp the stem, lower leaves narrow to a winged petiole, usually no serrations. Upper leaves are smaller than lower ones. Loves mesic to dry prairies and inhabits sunnier openings in savannas. Pappus (seed fluff) is off-white, usually tinged with amber or rose.

Marsh Aster

Symphotrichum lanceolatum
var. *interior*

ASTERACEAE

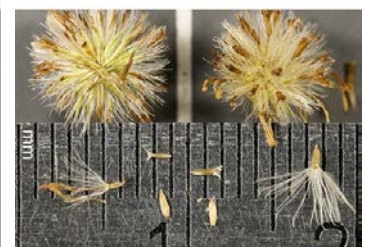


Photo: 10-30-18

Fluffy. Mama's Boy. A common species, tall and dense with white flowers. Spreads by rhizomes and seed. Stems are hairless, or at most hairy in lines on the upper half. Leaves are hairless. The "eye" of the flowers (disc florets) matures from yellow to burgundy. Pappus (fluff) is white to amber. Similar to straight species, but this variety has smaller involucre (cup of bracts under the flower), less than 4 mm high.

Asters and Goldenrods

Kelly Schultz¹, Dale Shields²

version 3 2/2021

¹Lake County Forest Preserve District, ²Volunteer Stewardship Network

Images ©DJS Shields. Produced by: Dale Shields & Kelly Schultz ©Lake County Forest Preserve District [kschultz@lcfpd.org]

Calico Aster
aka
Side-flowering Aster

*Symphotrichum
lateriflorum*

ASTERACEAE

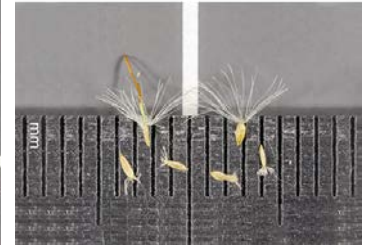


Photo: 9-28-17

Fluffy. Mama's Boy. "Calico" refers to the color-changing "eye," although this trait occurs in other asters too. Side-flowering ("lateriflorum") refers to the flowers all growing on one side of the branches, usually facing up towards the sun. Many tiny white flowers on short stalks. Common in wet to dry-mesic woodlands and savannas, also wet to wet-mesic sunny habitats. See Flora for fen variety.

New England Aster

*Symphotrichum
novae-angliae*

ASTERACEAE



Photo: 10-4-17

Fluffy. Mama's Boy. A versatile aster, this species grows in full sun to partial shade, wet to dry-mesic soils. One of only a few native asters with vibrant royal purple flowers; rare to see other colors in natural populations of this species. Leaves clasp the stem. Stem and leaves are hairy. Floral branches and bracts have some glandular (lollipop) hairs. Achenes (seeds) are hairy, and the pappus (seed fluff) is brown.

Aromatic Aster

*Symphotrichum
oblongifolium*

ASTERACEAE



Photo: 10-16-17

Fluffy. Mama's Boy. This uncommon aster loves rocky, calcium-rich, dry soils. A bushy dome of woody stems covered in royal purple flowers. Crushed leaves have a balsam-like aroma. One of the last to bloom, this species is great for pollinators and native gardening. Small leaves dominate; larger leaves are less than 1cm wide and 6 cm long. Brown pappus (seed fluff).

Asters and Goldenrods

Kelly Schultz¹, Dale Shields²

version 3 2/2021

¹Lake County Forest Preserve District, ²Volunteer Stewardship Network

Images ©DJS Shields. Produced by: Dale Shields & Kelly Schultz ©Lake County Forest Preserve District [kschultz@lcfpd.org]

Sky-blue Aster

Symphotrichum oolentangiense

ASTERACEAE



Photo: 10-16-20

Fluffy. As with the other “blues” this aster has flowers that are lavender rather than a true bold blue. Lower leaves are heart-shaped or lance-shaped, becoming dramatically smaller up the stem. Leaves have a rough, sandpaper texture and are winged at the petioles, and have few to no teeth on the margins. Dry & mesic prairies and savannas, especially in well-drained soils.

Crooked-stem Aster

Symphotrichum prenanthoides

ASTERACEAE



Photo: 10-18-18

Fluffy. Mama’s Boy. Clasping leaves with serrated teeth and a “waist” in the leaf. Floral branches and floral bracts are usually hairless. This rare aster is commercially available and appearing in restorations beyond its historic distribution. Found in shady damp places. Flowers are a pale lavender-blue or sometimes white. Pappus is cinnamon colored.

Willow Aster

Symphotrichum praealtum

ASTERACEAE

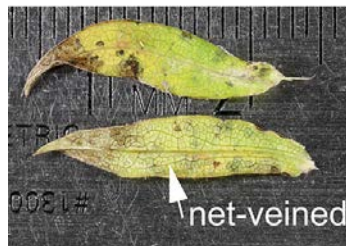
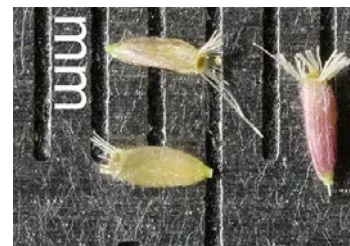


Photo: 11-3-20

Fluffy. Late-blooming aster in wet-mesic habitats. Rhizomatous. Slender elliptic leaves (like willow leaves) with “reticulate” veins (net veined, like a stained-glass window) are prominent in this species. Lavender or white flowers with large leafy bracts under the flower heads.

Asters and Goldenrods

Kelly Schultz¹, Dale Shields²

version 3 2/2021

¹Lake County Forest Preserve District, ²Volunteer Stewardship Network

Images ©DJS Shields. Produced by: Dale Shields & Kelly Schultz ©Lake County Forest Preserve District [kschultz@lcfpd.org]

Bristly Aster

Symphotrichum puniceum

ASTERACEAE



Photo: 11-6-18

Fluffy. Mama's Boy. Often a red-purple stem. Longer leaves are more than 5 cm long and clasp the stem. Flower color varies. Floral bracts are hairless. Underside of main leaves have hairs on the main vein and upper stems have short bristly hairs (*S. firmum* is nearly hairless all over.) Pappus is white.

Silky Aster

Symphotrichum sericeum

ASTERACEAE

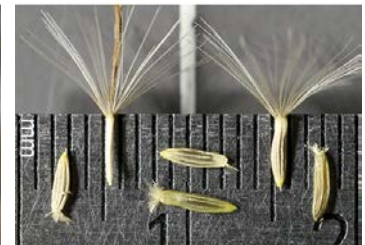


Photo: 10-28-20

Fluffy. Silky aster is densely covered with fine silky hairs, giving the leaves a slightly shining, grayish tone. This rare aster grows in well-drained sandy and rocky soils, most often in prairies but it can be found in savannas too. Flowers are lavender. Grows in small clumps.

Short's Aster

Symphotrichum shortii

ASTERACEAE

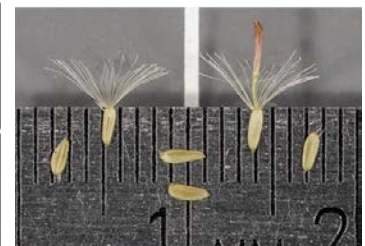


Photo: 10-26-18

Fluffy. Mama's Boy. Heart-shaped leaves with smooth margins (usually no serrations) and skinny petioles without wings. Loves mesic to dry woodlands and savannas. Flowers are blue-purple and pappus (seed fluff) is tan.

Asters and Goldenrods

Kelly Schultz¹, Dale Shields²

version 3 2/2021

¹Lake County Forest Preserve District, ²Volunteer Stewardship Network

Images ©DJS Shields. Produced by: Dale Shields & Kelly Schultz ©Lake County Forest Preserve District [kschultz@lcfpd.org]

Stiff Aster
aka
White Goldenrod

Oligoneuron album

ASTERACEAE



Photo: 10-24-19

Fluffy. Mama's Boy. This species has bounced between *Aster* and *Solidago* for years. Flowers are white, but it has successfully hybridized with 2 *Oligoneuron* goldenrods. Most likely to be found on sandy, well-draining prairies. The pale gray pappus color is unusual. Stiff, flat, linear leaves. Flat-topped arrangement of flowers & seeds; leaves are larger at the base and decrease in size up the stem.

Ohio Goldenrod

Oligoneuron ohioense

ASTERACEAE

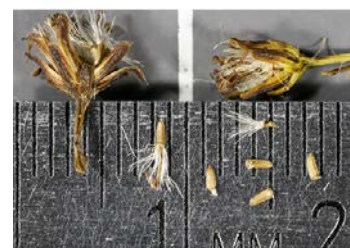


Photo: 10-9-19

Fluffy. Mama's Boy. A fen-loving goldenrod, this species is a little more conservative than *O. riddellii*. Leaves are flat and have blunter tips. Hairless throughout. Like all *Oligoneuron* species, this species has a flat-topped arrangement of flowers & seeds; leaves are larger at the base and decrease up the stem.

Riddell's Goldenrod

Oligoneuron riddellii

ASTERACEAE



Photo: 10-13-18

Fluffy. Mama's Boy. Another fen-lover, but this goldenrod has arching, pointed leaves that are typically folded along the keel of the central leaf vein. The main stalks and leaves are hairless, but the short floral branches are hairy. Leaves decrease in size on the upper stem.

Asters and Goldenrods

Kelly Schultz¹, Dale Shields²

version 3 2/2021

¹Lake County Forest Preserve District, ²Volunteer Stewardship Network

Images ©DJS Shields. Produced by: Dale Shields & Kelly Schultz ©Lake County Forest Preserve District [kschultz@lcfpd.org]

Stiff Goldenrod

Oligoneuron rigidum

ASTERACEAE

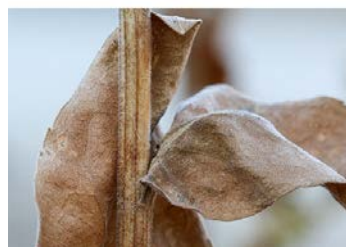


Photo: 10-9-17

Fluffy. Mama's Boy. A familiar species to many prairie enthusiasts. Hairy spinach-shaped leaves that start out cuddly-soft and stiffen with age. White pappus, relatively large heads. As with all *Oligoneuron* species, a flat-topped arrangement of flowers & seeds; leaves are larger at the base and decrease in size up the stem.

Smooth Grass-leaved Goldenrod

Euthamia graminifolia

ASTERACEAE

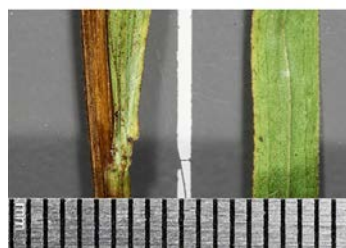
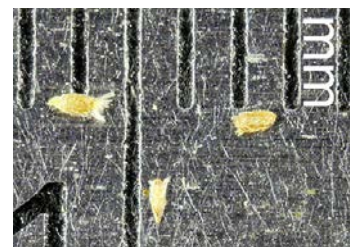


Photo: 10-9-19

Fluffy. Mama's Boy. *Euthamia* species have flat-topped flower arrangements with linear leaves of similar size, primarily along the stem rather than basal leaves, and the lower leaves quickly drop. Larger leaves on this species are more than 4 mm wide, often with 5+ veins. Stems are hairless, or at most, sparse hairs in lines on the lower stem.

Hairy Grass-leaved Goldenrod

Euthamia nuttallii

ASTERACEAE

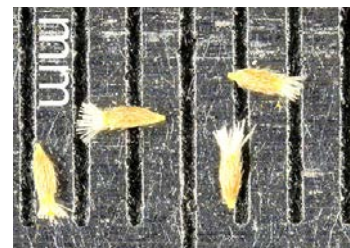


Photo: 10-20-17

Fluffy. Mama's Boy. Formerly a variety of *E. graminifolia*, this species has the same leaves and flat-topped arrangement of yellow flowers. Differs by having small hairs throughout the plant, although sometimes the outer branches are hairless.

Asters and Goldenrods

Kelly Schultz¹, Dale Shields²

version 3 2/2021

¹Lake County Forest Preserve District, ²Volunteer Stewardship Network

Images ©DJS Shields. Produced by: Dale Shields & Kelly Schultz ©Lake County Forest Preserve District [kschultz@lcfpd.org]

Blue-stemmed
Goldenrod

Solidago caesia

ASTERACEAE

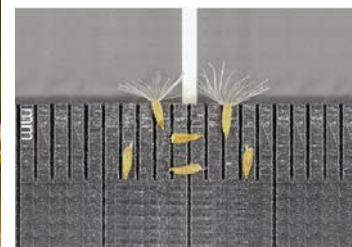


Photo: 9-30-17

Fluffy. Mama's Boy. A species of rich mesic woods, and can also be found in savannas. Seeds are clustered in leaf axils. Stem has a light blue waxy coating (glaucous). Elongated, lance-shaped leaves are sessile (stalkless). More clusters of flowers & seeds than *S. flexicaulis*.

Canada Goldenrod

Solidago canadensis

ASTERACEAE



Photo: 9-30-17

Fluffy. Mama's Boy. Good for pollinators and it's native, but that's about all the nice things you can say. Happy in disturbed soils and many habitats. Dense plumes of flowers. Leaves have parallel veins, slightly smaller going up the stem. Hairy stem, but lower stem can go bald with age. Spreads by rhizomes too. Differs from *S. altissima* by height of involucre (green cup under flower). Don't collect either species.

Zig-zag Goldenrod

Solidago flexicaulis

ASTERACEAE

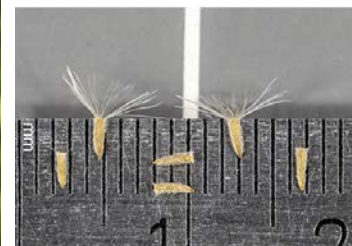
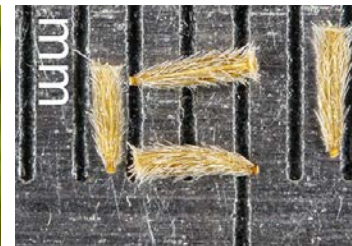


Photo: 9-30-17

Fluffy. Mama's Boy. This species has flowers/seeds in the clusters of the leaf axils (where stems & leaves meet). Leaves are broad serrated ovals with a point and winged petioles. Stem has a slight zigzag between axils. Mesic woodlands and mesic microhabitats in wetter woods.

Asters and Goldenrods

Kelly Schultz¹, Dale Shields²

version 3 2/2021

¹Lake County Forest Preserve District, ²Volunteer Stewardship Network

Images ©DJS Shields. Produced by: Dale Shields & Kelly Schultz ©Lake County Forest Preserve District [kschultz@lcfpd.org]

Late Goldenrod

Solidago gigantea

ASTERACEAE

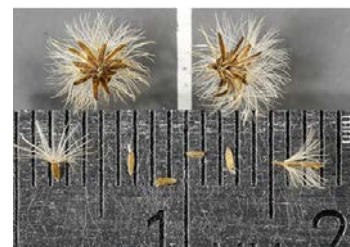
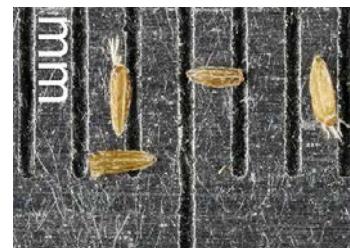


Photo: 10-13-18

Similar to *S. canadensis*, but hairless (or nearly so) on the main stems. Hairy on the floral branches. Like *S. canadensis* and *S. altissima*, the shape of the floral plume varies; often pyramid-shaped (wider on bottom) but can be wider in the middle or even club-like. The name isn't terribly helpful; blooming time overlaps with other goldenrods and while it is tall like its sisters, it is not a giant (*gigantea*).

Early Goldenrod

Solidago juncea

ASTERACEAE

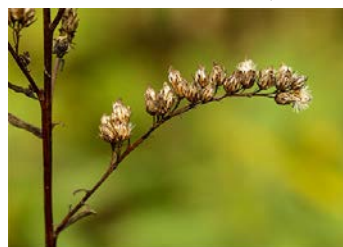


Photo: 10-8-18

Fluffy. Mama's Boy. Usually the first goldenrod to bloom, but flowering time overlaps with other species. Stems are hairless, including the floral branches. Basal rosettes are common. Typically 1 – 3 veins per leaf and lower leaves present at flowering time.

Old-field Goldenrod

Solidago nemoralis

ASTERACEAE

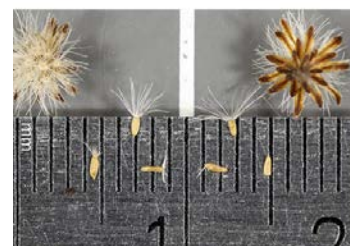


Photo: 10-13-17

Fluffy. Mama's Boy. The petite "bent Xmas tree" goldenrod, old-field is like a hunched old man. Common to old fields, dry prairies, and savannas. Occasionally in a compact plume rather than a long Xmas tree, just to test you. Hairy throughout. Short (usually less than 2 feet). Measure floral stalks (pedicels) and involucre (cup of floral bracts) to confirm ID against *S. nemoralis haleana* and *S. decemflora*.

Asters and Goldenrods

Kelly Schultz¹, Dale Shields²

version 3 2/2021

¹Lake County Forest Preserve District, ²Volunteer Stewardship Network

Images ©DJS Shields. Produced by: Dale Shields & Kelly Schultz ©Lake County Forest Preserve District [kschultz@lcfpd.org]

Swamp Goldenrod

Solidago patula

ASTERACEAE

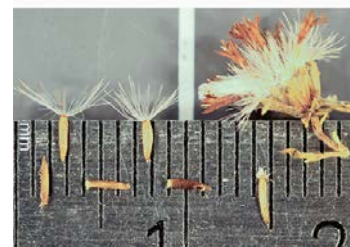
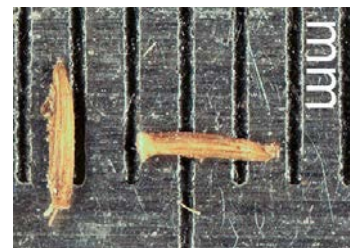


Photo: 10-2-17

Fluffy. Mama's Boy. This species seems happiest growing near gently flowing water, often on a slightly drier rise, in fens or flatwoods. Big (3.5+ cm wide), rough basal leaves. Leaf size shrinks as they move up the stem. Elongated branches of flowers, longer than *S. ulmifolia*.

Seaside Goldenrod
aka
Salt Marsh Goldenrod

Solidago sempervirens

ASTERACEAE



Photo: 11-3-20

Fluffy. This non-native goldenrod is a growing problem, moving up from the southern US along roadsides (and their road salt). Usually the latest-blooming goldenrod, and grows in large, dense colonies. Leaves are toothless; the next closest goldenrod is *S. speciosa*, but habitat quickly distinguishes the two species.

Showy Goldenrod

Solidago speciosa

ASTERACEAE



Photo: 10-25-17

Fluffy. Mama's Boy. Aptly named, this is the showiest of the native goldenrods and the best suited for native gardening. Stems typically a bold crimson late in the season. Xmas tree of flowers. Leaves are entire (lacking any teeth or lobes) on most of the leaves. Grows in little clumps. See Flora for variations. Herbarium specimens can be confused with *S. uliginosa*, but habitat easily separates them in the wild.

Asters and Goldenrods

Kelly Schultz¹, Dale Shields²

version 3 2/2021

¹Lake County Forest Preserve District, ²Volunteer Stewardship Network

Images ©DJShields. Produced by: Dale Shields & Kelly Schultz ©Lake County Forest Preserve District [kschultz@lcfpd.org]

Elm-leaved
Goldenrod

Solidago ulmifolia

ASTERACEAE

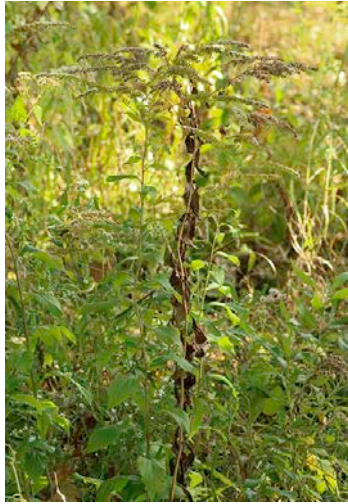


Photo: 10-4-17

Fluffy. Mama's Boy. Flowers are on long branching arms, like exploding fireworks. Leaves are broader than many goldenrods, but a far cry from an elm leaf. Leaves are feather-veined; many goldenrods species have parallel veins. Woodlands and savannas.