



## Natural Heritage & Endangered Species Program

Massachusetts Division of Fisheries & Wildlife  
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## Crooked-stem Aster

*Symphyotrichum prenanthoides*  
(Muhl. ex Willd.) Nesom

State Status: **Special Concern**

Federal Status: **None**

**General description:** Crooked-stem Aster (*Symphyotrichum prenanthoides*) is a medium-sized late summer composite wildflower (family Asteraceae) of moist, rich, river- or stream-associated forests, thickets, banks, and meadows. Plants have ascending to erect flexuous stems (20–120 cm; 8–47 in.) that change angles at successive nodes in a zigzag like pattern, hence the common name, “Crooked-stem Aster.” The alternately arranged spoon-shaped leaf blades narrow at the base, and clasp the stem. The lavender-blue flower heads are arranged in a branched inflorescence.

**Aids to identification:** Crooked-stem Aster is a colonial plant emerging from long rhizomes. The zigzag stems are glabrous to pubescent, turning dark purple with age. Most of the lower leaves (6–20 × 1–5 cm) are oblanceolate, with sharply toothed margins; they taper distally to a sharp point. The leaf base is constricted and auriculate. The upper stem leaves are similar but are less constricted. The inflorescence is broad and branched, with flowering heads on widely spreading to ascending, often purplish branches. The peduncles (~4 cm) are stiffly pubescent and have small bracts (3–12 mm) that segue into the involucre (the whorl of bracts subtending flowers). The flower heads comprise both disk (the tiny regular flowers in the center of the head) and ray florets (the strap-shaped flowers forming the outer whorl of the flower head), the latter with lavender-blue (rarely white) petals. The bell-shaped involucre (5–6 mm) has bracts in four to six series, often of different lengths, that are obtuse to acute, and eglandular (without glands). The fruit of Crooked-stem Aster is a cypsela, which is an achene (dry, single-seeded, indehiscent fruit) that has a modified calyx (pappus) at its apex that is a tuft of fine bristles. This species flowers in late summer into early autumn.



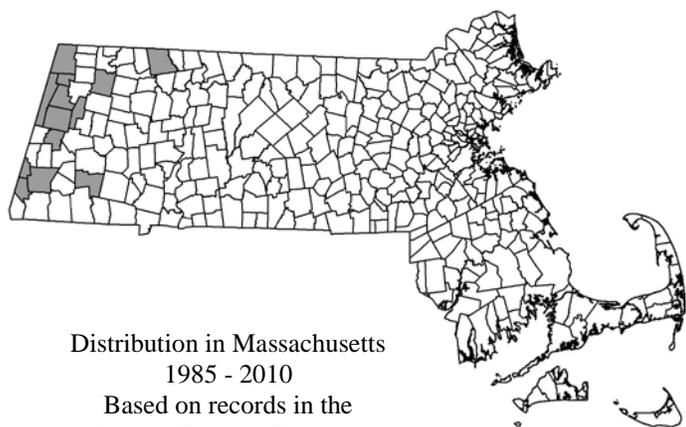
*Crooked-stem Aster.* Photos: By and Courtesy of Arieh Tal.

**Similar species:** Bristly-aster (*Symphyotrichum puniceus*) has clasping leaves and purplish flowers; but unlike Crooked-stem Aster it has stout reddish hairy stems, and involucre bracts that are long-acuminate (tapering to a sharp point) to attenuate (tapering to a narrow tip) at the apex, and nearly equal in length

**Habitat in Massachusetts:** In Massachusetts, Crooked-stem Aster occurs on exposed gravelly shores, banks, and open thickets in the rich mesic alluvial soils of river floodplains. It is also found in streamside seeps, partially wooded swamps, and along open to semi-open roadsides. It frequently occurs along trails or small roads where they cross streams or approach floodplains. Associated species include Red Maple (*Acer rubrum*), Ironwood (*Carpinus caroliniana*), American Elm (*Ulmus americana*), Northern Lady-fern (*Athyrium angustum*), Common Horsetail (*Equisetum arvense*), White Grass (*Leersia virginica*), and Sensitive Fern (*Onoclea sensibilis*). Co-occurring congeners include Blue Heart-leaf Aster (*Symphotrichum cordifolium*), Calico-aster (*S. lateriflorum*), Tall White (*S. lanceolatum*), and New England Aster (*S. novae-angliae*).

#### Flowering time in Massachusetts

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec



Distribution in Massachusetts  
1985 - 2010  
Based on records in the  
Natural Heritage Database

**Range:** Crooked-stem Aster is known from Canada (Ontario) to New England (only in Massachusetts; possibly extirpated from Connecticut), South to North Carolina and Mississippi, throughout much of the Midwest to Iowa and Wisconsin. It is considered exotic in Florida.

**Population status in Massachusetts:** Crooked-stem Aster is listed under the Massachusetts Endangered Species Act (MESA) as a Species of Special Concern. All listed species under MESA are protected from killing, collecting, possessing, or sale and from activities that would destroy habitat and thus directly or indirectly cause mortality or disrupt critical behaviors. Naturally occurring populations of the species are currently known from Berkshire and Franklin Counties, and historically known from Hampshire County.

**Management recommendations:** The exact management needs of Crooked-stem Aster are not known. As with all species, however, maintaining habitat quality is essential. Population locations that receive heavy recreational use (e.g., hiking, ORV) should be carefully monitored for plant damage or soil disturbance; trails can sometimes be re-routed to protect the rare plant population. Crooked-stem Aster habitat should also be monitored for competition and over-shading by aggressive native and exotic invasive plants; aggressive native and exotic plants can out-compete rare plants for nutrients and block light, excluding them over time. Some invasive species, such as Garlic Mustard (*Alliaria petiolata*) are allelopathic, meaning they can change the soil chemistry to inhibit the viability of native plants. Exotic species of concern in plant communities supporting Crooked-stem Aster are Garlic Mustard, Asiatic Bittersweet (*Celastrus orbiculatus*), Morrow Honeysuckle (*Lonicera morrowii*), and Multiflora Rose (*Rosa multiflora*). If exotic plants are invading Crooked-stem Aster habitat, a plan for control should be constructed. All active management within the habitat of a rare plant population (including invasive species removal) is subject to review under MESA, and should be planned in close consultation with the Massachusetts Natural Heritage & Endangered Species Program.

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