



Natural Heritage & Endangered Species Program

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Massachusetts Division of Fisheries & Wildlife

Clustered Sanicle *Sanicula odorata* (Raf.) Pryor & Phillippe

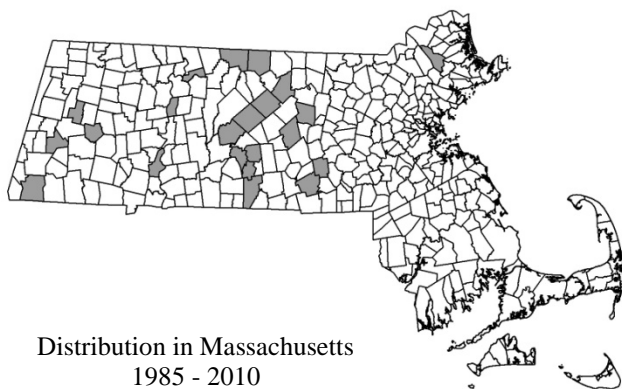
State Status: **Threatened**
Federal Status: **None**

DESCRIPTION: Clustered Sanicle (*Sanicula odorata*) is a perennial wildflower of the parsley family (Apiaceae) that inhabits rich, often alluvial woodlands. It is a glabrous (hairless), sometimes branching plant, 30 to 75 cm (1–2.5 ft.) in height, with toothed, palmately-compound leaves and tiny fragrant flowers borne in a compound umbel inflorescence. The distinctive fruit has hooked bristles, which enables dispersal by clinging to passing animals (ectozoochory); this transport can result in a dynamic patchy distribution of plants within a habitat.

AIDS TO IDENTIFICATION: The basal leaves usually have five leaflets, often with each incised to form two to three lobes, and petioles that are longer than the blade. The stem (cauline) leaves usually have three leaflets, and are sessile and smaller higher on the stem. The small flowers are five-lobed and yellowish-green, borne on umbellets, the ultimate clusters of a compound umbel; umbellets of Clustered Sanicle are either polygamous (comprising both hermaphroditic *and* staminate flowers), or are entirely staminate. The



Clustered Sanicle plants growing together.
Photo: Bruce A. Sorrie, NHESP.



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

polygamous umbel is a triad of three hermaphroditic flowers (i.e., with both pistils and stamens), each on a short pedicel (≤ 1 mm), over-topped by 12+ staminate flowers with longer pedicels. The hermaphroditic flowers and subsequent fruits are globose, and bur-like, armed with hooked bristles. The two-seeded fruits are up to 6 mm long, and have persistent triangular, blunt-tipped sepals, two recurved protruding styles, and (unlike other local sanicles) have bristles that do not expand at the base. Clustered Sanicle flowers in early summer; fruits mature by late summer and may not persist on the plant later in the season.

A Species of Greatest Conservation Need in the Massachusetts State Wildlife Action Plan

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1 Rabbit Hill Rd., Westborough, MA; tel: 508-389-6300; fax: 508-389-7890; www.mass.gov/dfw

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Sanicle Species	Calyx	Bristles	Styles	Umbellets
Clustered Sanicle	Triangular, blunt, shorter than bristles	Not conspicuously expanded at base	Recurved, much protruding beyond calyx	Staminate and polygamous
Trefoil Sanicle	Lanceolate, sharply tipped exceeding bristles	Expanded at base	Not protruding beyond calyx	Only polygamous
Canadian Sanicle	Lanceolate, sharply tipped, concealed by bristles	Expanded at base	Not protruding beyond calyx	Only polygamous
Black Snakeroot	Long, pointed; inconspicuous among bristles	Expanded at base	Recurved, much protruding beyond calyx	Staminate and polygamous

SIMILAR SPECIES: Clustered Sanicle has three congeners in Massachusetts with similar foliage and habitat associations; these include Trefoil Sanicle (*S. trifoliata*; Watch List), Canadian Sanicle (*S. canadensis*; Threatened), and Black Snakeroot (*S. marilandica*), a more common species. A technical guide (e.g., Pryer and Phillippe 1989) and a hand lens are required to differentiate among them. The three other sanicles have more sharply-pointed, lanceolate calyx lobes, white-greenish flowers, and bristles that are conspicuously expanded at the base. The best way to ensure correct identification is to examine the plants when the mature fruit is present. Key characteristics include calyx, bristle, and style morphology, and their relative lengths, and umbellet composition. Note that persistent filaments with absent anthers may be mistaken for styles, but the filaments are thicker and lighter colored.

Honewort (*Cryptotaenia canadensis*) has foliage similar to sanicles, but is readily differentiated when the inflorescence forms. Most other species in the parsley family of similar habitats, including Sweet Cicely (*Osmorhiza* spp.) and Golden Alexanders (*Zizia aurea*), have pinnately compound leaves.

HABITAT IN MASSACHUSETTS: Clustered Sanicle occupies neutral to circumneutral, limestone-influenced soils of shaded, low woodlands and rich mesic forests. Habitats are often associated with rivers or streams, such as alluvial woodlands or high floodplain terraces. Within rich mesic forests, canopy associates include Sugar Maple (*Acer saccharum*), White Ash (*Fraxinus*

americana), and Basswood (*Tilia americana*); within floodplains the canopy may include Ironwood (*Carpinus caroliniana*), American Elm (*Ulmus americana*), Sycamore (*Platanus occidentalis*), and Cottonwood (*Populus deltoides*). Understory associates are diverse and include rich site indicators, such as Goldie's Fern (*Dryopteris goldiana*; Watch List), Glade Fern (*Diplazium pycnocarpon*; Watch List), Trefoil Sanicle (*Sanicula trifoliata*; Watch List), Maidenhair Fern (*Adiantum pedatum*), American Ginseng (*Panax quinquefolius*; Special Concern), and Wild Leek (*Allium tricoccum*).

RANGE: Clustered Sanicle is known from much of eastern and central North America, from Nova Scotia west to Ontario, and North Dakota south to the Gulf states.

POPULATION STATUS: Clustered Sanicle is listed under the Massachusetts Endangered Species Act as Threatened. All listed species 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. It is currently known from Berkshire and Franklin Counties and is historically known from Hampshire, Essex, and Suffolk Counties.

THREATS: The most commonly noted threat to Clustered Sanicle populations in Massachusetts is the invasion of exotic plants such as Japanese Barberry (*Berberis thunbergii*), Garlic Mustard (*Alliaria*

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petiolata), and Japanese Knotweed (*Fallopia japonica*); other exotics of rich forests include Moneywort (*Lysimachia nummularia*), Goutweed (*Aegopodium podagraria*), and Common Buckthorn (*Rhamnus carthartica*). Land conversion is another threat; dramatic changes in habitat, like extensive canopy removal, can change light conditions, disturb soil, and introduce invasive exotic plants to habitat. Lastly, there are threats related to recreation; trail maintenance, foot and mountain bike traffic, or ORV use can inadvertently cause physical damage to rare plants.

MANAGEMENT RECOMMENDATIONS: As with many rare species, the exact management needs of Clustered Sanicle are not known. Known habitat locations should be protected from dramatic changes in light or moisture conditions. Sites should be monitored for invasions of exotic plants; if exotic plants are crowding and out-competing this species, a plan should be developed to remove the invaders. Rare plant locations that receive heavy recreational use should be carefully monitored for plant damage or soil disturbance; trails can sometimes be re-routed to protect population. All active management of rare plant populations (including invasive species removal) is subject to review under the Massachusetts Endangered Species Act, and should be planned in close consultation with the Massachusetts Natural Heritage & Endangered Species Program.

Flowering time in Massachusetts

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

Fruiting time in Massachusetts

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

Updated 2019

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