



Natural Heritage & Endangered Species Program

Massachusetts Division of Fisheries & Wildlife
1 Rabbit Hill Road, Westborough, MA 01581
tel: (508) 389-6360, fax: (508) 389-7891
www.nhesp.org

Muskflower

Mimulus moschatus (Dougl.)

State Status: Endangered

Federal Status: None

General Description: Muskflower is a yellow-flowered, herbaceous perennial with sticky stems and leaves and a musk-like scent. It typically grows in wet soil along brooks and springs.

Aids to Identification: Like all members of the figwort family (Scrophulariaceae), muskflower has opposite leaves and irregularly shaped flowers. Plants are typically 20-40 cm (8-16 in.) tall with weak stems that are creeping at the base and erect at the tips. Stems and leaves are villous (hairy) and viscid (sticky) throughout. The leaves are thin, short-petioled (stalked), and 3-6 cm (1-2.5 in.) long. The yellow, showy flowers occur singly on long pedicels (stalks) that arise from the axils of the leaves. Flowers are tubular and two-lipped with fine dark lines that run over the base of the yellow lobes and small brownish-red spots along the inside edge of the tube. The calyx (outer floral whorl) is tubular with narrow, triangular lobes. Muskflower blooms in July and August. The fruit is a cylindrical capsule (a type of dry fruit that opens to discharge its seeds).

Similar Species: Two other species of the genus *Mimulus* occur in Massachusetts — winged monkey-flower (*Mimulus alatus*) and common monkey-flower (*Mimulus ringens*). Both are easily distinguished from muskflower by their lavender-blue flowers and their glabrous (or smooth) herbage.

Habitat & Associated Species: Muskflower occurs in springs, riverside seeps and wet roadside ditches. It is an excellent



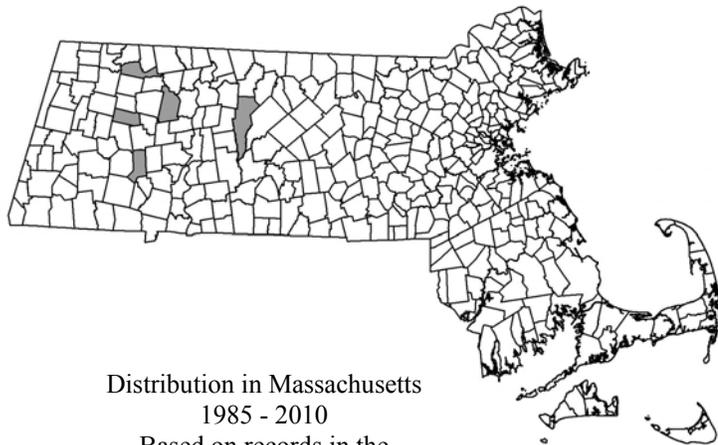
Muskflower, showing tubular yellow flowers, opposite leaves, and sticky hairs covering all parts of the plant. Photo: Bruca A. Sorrie, NHESP.

indicator of Riverside Seep communities which are a Priority Natural Community for Protection in Massachusetts. In Massachusetts, muskflower is typically found growing at the base of steep river banks in pockets of sand, gravel, and mud between boulder and rocks. Muskflower is commonly associated with a mixture of moisture-loving mosses, liverworts, and perennial herbs, such as *Glyceria canadensis* (rattlesnake grass), *Carex scabrata* (scabrous sedge), *Spiranthes lucida* (shining ladies'-tresses), *Polygonum sagittatum* (tearthumb), *Stellaria alsine* (seep starwort), *Epilobium* sp. (willow-herb), *Myosotis laxa* (wild forget-me-not), *Veronica americana* (American speedwell), *Campanula aparinoides* (marsh bellflower), *Cicuta bulbifera* (bulblet water-hemlock), *Hypericum*

(St. John's-wort), and *Impatiens capensis* (orange jewelweed). Associated shrubs include *Spiraea latifolia* (meadowsweet) and *Alnus viridis* ssp. *crispa* (mountain alder; a state-protected species of Special Concern).

Range: Muskflower is predominately a species of the northwestern United States and western Canada where it grows in cold bogs and along cold streamlets. It occurs eastward from northern Michigan, Ontario and Quebec to Newfoundland. It is sporadic in New England, the Middle Atlantic States and as far south as North Carolina which are the southeast edge of its range. Muskflower is often cultivated and is occasionally escaped. Determining which occurrences are native is often difficult.

In Massachusetts, Muskflower is native only in Franklin and Hampshire Counties where it occurs at the base of steep riverside slopes in wet, seepy areas. An occurrence of the species in Lexington in Middlesex County was introduced.



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

Population Status in Massachusetts:

Muskflower is listed as “Endangered” in Massachusetts. As with all state-protected rare species in Massachusetts, individuals of the species are protected from take (picking, collecting, killing,...) and sale under the Massachusetts Endangered Species Act. In 2010, there are five current populations and five historical records (unverified since 1978) of muskflower in the Commonwealth. The historical records are from five towns (see distribution map). Muskflower has been identified as a regionally rare taxon in New England meaning that there are fewer than 20 current occurrences of the species throughout New England. It occurs in New Hampshire, Vermont and Maine, but the Maine populations are believed to be naturalized. New Hampshire lists muskflower as “Endangered.” Muskflower occurred historically in Connecticut, but it is not currently known from the state.

Management Recommendations:

As for many rare species, exact needs for management of muskflower are not known. The following comments are based primarily on observations of populations in Massachusetts. In order to maintain the existing native populations and to prevent muskflower’s extirpation from the Commonwealth, it is critical that its habitat remain intact. Muskflower is typically found growing at the base of steep hillsides along rivers and streams. Any alteration to the hillsides (such as could occur from logging or construction activities) could result in slope instability and slumping that would negatively impact muskflower populations. One population of muskflower at the base of a steep slope on an oxbow pond was last observed in 1982 prior to the installation of a storm drainpipe that caused bank erosion and slumping that covered the population with sand. Alteration of hillsides could also destroy

the natural seeps in which muskflower occurs. Known populations of muskflower in Massachusetts occur along rivers and streams that experience periodic flooding. Disturbance by seasonal flooding may be necessary to perpetuate muskflower populations by limiting shrub growth and maintaining an open community structure. Any alteration of stream or river hydrology should be avoided in areas where muskflower occurs. Muskflower also appears to be negatively impacted by shading and crowding from aggressive invasive plant species like Japanese knotweed (*Polygonum cuspidatum*). Efforts should be made to eradicate Japanese knotweed where it is impacting muskflower populations.

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Updated 2010

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