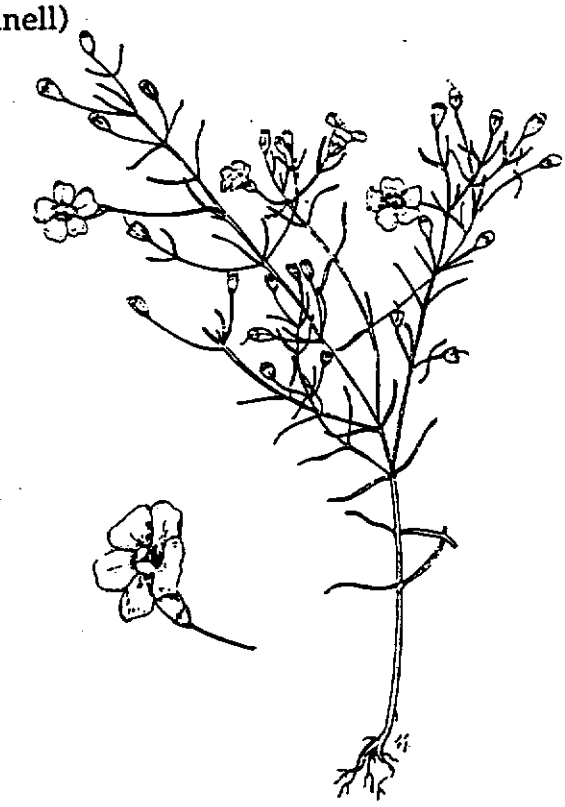
Natural Heritage &
Endangered Species
Program

Commonwealth of Massachusetts
Division of Fisheries & Wildlife
Route 135
Westborough, MA 01581
(508) 792-7270 ext. 200

MASSACHUSETTS RARE AND ENDANGERED PLANTS

SANDPLAIN GERARDIA
(*Agalinis acuta* Pennell)

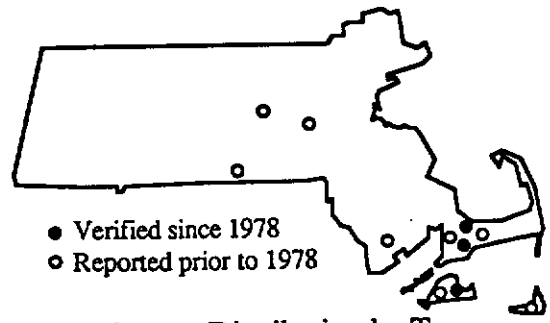


Crow, G.E. New England's Rare, Threatened and Endangered Plants. U.S. Department of the Interior. 1982.

Description

Agalinis acuta (formerly *Gerardia acuta*) is a delicate, sparsely branched, light yellowish-green herb in the Snapdragon or Figwort family (Scrophulariaceae). Although it may occasionally grow up to 40 cm tall, it usually grows from 10 to 20 cm (4-8 in.) high. The stem is smooth and slender, and the opposite, linear leaves are 0.5-1 mm (0.02 - 0.04 in.) wide and 10-25 mm (0.4 - 1 in.) long. The flower stalks are 10-30 mm (0.4 - 1.2 in.) long--1 to 3 times the length of the subtending leaflike bracts. Sandplain gerardia's rather bell-shaped flowers are arranged in a terminal raceme (a cluster of stalked flowers on an elongate, unbranched axis) and also in shorter lateral racemes. The blossoms are pink-purple, with two cream-colored lines. The corolla tube (cylindrical structure formed by the fusion of petals) is 7-9 mm (0.28 - 0.35 in.) long and ends in 3-4 mm (0.12 - 0.16 in.) long lobes that are either shallowly notched or square at their tips. The white throat (opening at the summit of the corolla tube) is marked with purple spots. Flowering season is from late August through late

Documented Range of Sandplain Gerardia



Massachusetts Distribution by Town

September, and individual blossoms last for only a day. Sandplain gerardia's fruits are ovoid capsules (fruits that are derived from a compound pistil and that contain many seeds). The tiny, yellow-brown seeds are covered with a net-like pattern.

Range

Sandplain gerardia has a very restricted distribution. The maximum documented range includes only Massachusetts, Connecticut, Rhode Island, New York and Maryland.

Similar Species

Three other species of the genus *Agalinis* may also occur in fields. Purple gerardia (*Agalinis purpurea*) and small-flowered gerardia (*A. paupercula*) normally occupy wet pond shores, meadows and seasonally wet power line right-of-ways. Their flowers are much larger than those of sandplain gerardia, the petals are rounded and the pedicels (flower stalks) are much shorter than the subtending leaf-like bracts. (Sandplain gerardia's corolla lobes are notched or squared-off, and its pedicels are at least as long as the bracts.) Slender gerardia (*A. tenuifolia*) usually occurs on dry, rocky slopes, but it occasionally grows on sandy fields as well. Nevertheless, the petals of this small, many-branched, bushy plant are rounded, and the pedicels vary from only one-half as long to as long as the subtending bracts.

Habitat in Massachusetts

Sandplain gerardia grows in dry, sandy soils of grasslands and roadsides; in pine/oak scrub openings, usually where there is considerable growth of lichens and scattered patches of bare soil; and in sandy plains. Both poor soils and habitat disturbance may create the open, relatively competition-free areas required by sandplain gerardia. Specific habitats in Massachusetts include a dry, sandy, short grass cemetery and a dry grassland. Associated plant species include little bluestem (*Schizachyrium scoparium*), field pussytoes (*Antennaria neglecta*), bearberry (*Arctostaphylos uva-ursi*), poverty oatgrass (*Danthonia spicata*), early low blueberry (*Vaccinium angustifolium*), red fescue (*Festuca rubra*), stiff aster (*Aster linariifolius*), pinweed species (*Lechea* spp.) and birdfoot violet (*Viola pedata*). Bushy rockrose (*Helianthemum dumosum*) is a rare Massachusetts plants that has been found with sandplain gerardia. Sandplain gerardia does not survive in plots by itself; it is a hemiparasite on little bluestem and, possibly, other plants. After germination, its roots connect up with those of a host plant in order to obtain some of its nutrients.

Population Status

In 1988, sandplain gerardia was given "Endangered" status by the federal government. The plant is also presently listed as "Endangered" in Massachusetts, where there were 20 historical stations (sought but not found since 1978) in 10 towns and three current stations (discovered or relocated since 1978). (Two towns contain both a current and an historical station and is represented by single, solid dots on the town distribution map.) Sandplain gerardia is also considered rare in Maryland, New York, Connecticut, and Rhode Island. Indeed, throughout its range, the plant is considered very rare and in danger of extinction. In 1995, there were fewer than fifteen extant populations worldwide. It is believed that the plant's decline is due to habitat loss resulting from vegetational succession, fire suppression and land development. Annual mowing--after seed dispersal--is recommended to maintain open, short, grassy habitat. Because sandplain gerardia is an annual, there can be great variation in its numbers from year to year.

1995