Sandplain Gerardia

Agalinis acuta

Photo credits: *Stephen M. Young*

Scientific Name *Agalinis acuta* Pennell

Family Name Scrophulariaceae Figwort Family

Did you know?
Sandplain gerardia was one of the first New York plants to be put on the federal endangered species list, on September 7, 1988 (US Fish and Wildlife Service 2010).

Summary

Protection Endangered in New York State, Endangered federally.

This level of state protection means: listed species are those with: 1) 5 or fewer extant sites, or 2) fewer than 1,000 individuals, or 3) restricted to fewer than 4 U.S.G.S. 7 ? minute topographical maps, or 4) species listed as endangered by U.S. Department of Interior.

This level of federal protection means: Listed as Endangered in the United States by the US Department of Interior.

Rarity G1, S1

A global rarity rank of G1 means: This species is critically imperiled globally because of extreme rarity (typically five or fewer known populations), very few remaining individuals, or is especially vulnerable to extinction because of some factor of its biology.
A state rarity rank of S1 means: This plant is endangered/critically imperiled in New York because of extreme rarity (typically 5 or fewer populations or very few remaining individuals) or is extremely vulnerable to extirpation from New York due to biological factors.

Conservation Status in New York

There are four known occurrences on Long Island but all of the sites are fairly small and isolated natural areas which need constant management. In good reproduction years a couple of the sites have tens of thousands of plants. There are nine historical occurrences that are now considered extirpated. There are two additional small occurrences that were known to exist until 2000 and 2004 but have since been extirpated. There are five more

sites on Long Island where plants have been introduced, one with hundreds of plants, but they are not used for ranking the species.

Short-term Trends

The populations have fluctuated a lot in recent years, with some years having 1000 individuals in the state and other years with tens of thousands of plants.

Long-term Trends

There has been a very large decline from historical numbers that ranged into the hundreds of thousands or even millions, when the plant was a dominant on large tracts of maritime grassland. Loss of habitat and succession have reduced numbers to the few sites we have today. These low numbers will continue into the forseeable future.

Conservation and Management

Threats

Sandplain gerardia needs disturbed habitat in maritime grasslands, so it is often threatened by natural succession. Animal browse, usually by rabbits, can be a problem as well as encroachment by exotic plant species. One population was extirpated by the development of a roadside and another by the use of herbicides along a railroad.

Conservation Strategies and Management Practices

Maritime grasslands need to be protected and managed by fire or grazing to protect the remaining populations.

Research Needs

We need to learn more about its habitat requirements and general ecology, including reproduction and the nature of a possible hemiparasitic relationship.

Habitat

Agalinis acuta was traditionally a maritime grassland species maintained by fire and grazing. It was once a common species when these communities were large and dominant on some areas of Long Island. It now survives in remnant grasslands in pine barrens with broad, grassy swaths; remnants of the Hempstead Plains dominated by grasses and composites with scattered shrubs and bare areas scraped by a bulldozer; and other remnant grasslands of the South Fork including those around golf courses, and along roadsides and railroads. It does need some disturbance that provides bare soil areas within these grasslands.

Associated Ecological Communities

Hempstead Plains Grassland
A tall grassland community that occurs on rolling outwash plains in west-central Long Island. This community occurs inland, beyond the influence of offshore winds and salt spray.

Maritime Grassland
A grassland community that occurs on rolling outwash plains of the glaciated portion of the Atlantic coastal plain, near the ocean and within the influence of offshore winds and salt spray.

Maritime Shrubland
A shrubland community that occurs on dry seaside bluffs and headlands that are exposed to offshore winds and salt spray.

Other Probable Associated Communities

Pitch pine-oak-heath woodland

Associated Species

Thread-leaved Gerardia (*Agalinis setacea*)
White-tubed Colicroot (*Aletris farinosa*)
Yellow Wild-indigo (*Baptisia tinctoria*)
Maryland Golden Aster (*Chrysopsis mariana*)
Poverty Oatgrass (*Danthonia spicata*)
Orange-grass St. John's-wort (*Hypericum gentianoides*)
Sandplain Flax (*Linum intercursum*)
Nuttall's Milkwort (*Polygala nuttallii*)
Little Bluestem (*Schizachyrium scoparium*)
Toothed White-top Aster (*Sericocarpus asteroides*)
Narrowleaf Aster (*Sericocarpus linifolius*)
Yellow Indiangrass (*Sorghastrum nutans*)
Arrow-leaved Violet (*Viola sagittata*)

Identification Comments

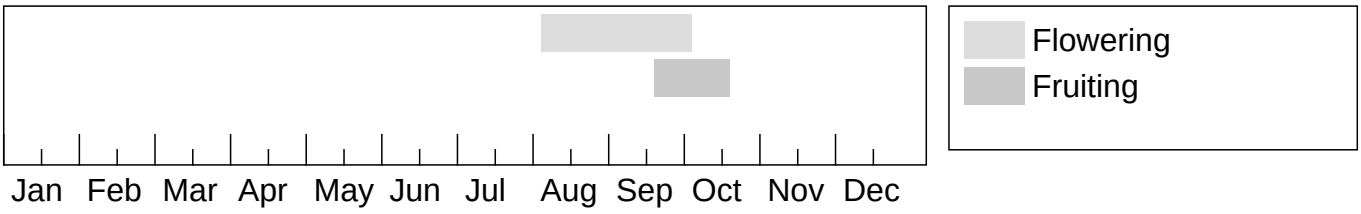
This small herb has yellow-green, sparsely-branched stems that are 10-40 cm tall and the angles of the stems and the pedicels are smooth with no hairs. The calyx-tube is cup-shaped and its teeth are narrowly triangular and fringed with short glandular hairs. The pink corolla is tubular and flared at the top into spreading petal lobes. The tube (which is hairy on the outside and on the top of the inside) together with a lobe are 0.5-1.5 cm long with 2 yellow lines and some purple spots in the white throat. The lobes are notched at the top and the outsides are glabrous, but the margins are ciliate. The anthers are covered with dense white hairs. The yellowish-brown capsules have yellowish-brown seeds 0.04-0.06 mm long (USFWS 1995).

Best Life Stage for Identifying This Species

The plant must be in flower or fruit.

The Best Time to See

Agalinis acuta flowers from early August to late September and its fruits persist to first frost.



The time of year you would expect to find Sandplain Gerardia in New York.

Similar Species

Agalinis setacea is the most closely related species in New York. It stems are dark green to purple-tinged and more branched. The leaves are more numerous and more narrow than Agalinis acuta. The corolla is larger, 1.1 cm to 2.1 cm long, pinkish-purple, and the exterior surfaces of the lower lobes are hairy instead of glabrous as in Agalinis acuta. There are no notches at the tops of the lobes. The seed color is dark brown to black, not yellowish-brown (USFWS 1995). Agalinis purpurea has similar-looking flowers but they are stalkless. Agalinis tenuifolia has smaller darker flowers with the petals facing forward and hairless on the inside, although the stamens have hairs and the top petals arch over them.

Taxonomy

Kingdom Plantae
└─ **Phylum** Anthophyta
└─ **Class** Dicots (Dicotyledoneae)
└─ **Order** Scrophulariales
└─ **Family** Scrophulariaceae (Figwort Family)

Additional Common Names

False-foxglove

Synonyms

Gerardia acuta ((Pennell) Pennell)

Additional Resources

Links

Center for Plant Conservation. 2009. Species Profile
http://www.centerforplantconservation.org/collection/cpc_viewprofile.asp?CPCNum=36
NYFA Plant Atlas
http://www.newyork.plantatlas.usf.edu/Plant.aspx?id=2946
US Fish and Wildlife Service. 2010. Species Profile.
http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q24K
USDA Plants Database

http://plants.usda.gov/java/nameSearch?mode=sciname&keywordquery=AGALINIS+ACUTA

NatureServe Explorer

http://natureserve.org/explorer/servlet/NatureServe?searchName=AGALINIS+ACUTA

Google Images

http://images.google.com/images?q=AGALINIS+ACUTA

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