Tooth-cup

Rotala ramosior plant

Photo credits: *Stephen M. Young*

Scientific Name *Rotala ramosior* (L.) Koehne

Family Name Lythraceae Loosestrife Family

Did you know?
This is by far our smallest plant in the loosestrife family in New York. The genus name means wheel and comes from the whorled leaves of some of the species that look like the spokes of a wheel. The species name means many-branched and refers to its habit (Fernald, 1970). This is the only species of the genus in the Western Hemisphere but some other old world species are popular aquarium plants.

Summary

Protection Threatened in New York State, not listed federally.

This level of state protection means: listed species are those with: 1) 6 to fewer than 20 extant sites, or 2) 1,000 to fewer than 3,000 individuals, or 3) restricted to not less than 4 or more than 7 U.S.G.S. 7 ? minute topographical maps, or 4) listed as threatened by U.S. Department of the Interior.

Rarity G5, S2

A global rarity rank of G5 means: This species is demonstrably secure globally, though it may be quite rare in parts of its range, especially at the periphery.
A state rarity rank of S2 means: This plant is threatened/imperiled in New York because of rarity (typically 6-20 populations or few remaining individuals) or is vulnerable to extirpation from New York due to biological factors.

Conservation Status in New York

There are 10 existing populations but only four of these have more than 100 plants. There is one large population of over 2000 plants. The other populations are somewhat small and subject to human disturbance. Most of the 10 or so historical records are from developed areas of western Long Island and Staten Island and are considered extirpated. A few more populations may be found on eastern Long Island.

Short-term Trends

Short-term trends seem stable although more survey work would result in a better understanding of trends in a habitat where plants do not appear every year.

Long-term Trends

This species was always rare in New York. The 10 or so historical records from Western Long Island and Staten Island have been extirpated while populations on Eastern Long Island have mostly remained protected from development.

Conservation and Management

Threats

Threats include any damage or improper management of pond shores including trampling, ATV use, or mowing of the pond shore vegetation. The crowding out of pond shore vegetation by Phragmites is also a threat.

Conservation Strategies and Management Practices

The shoreline habitat where this species occurs should be protected from direct human disturbance during the growing season and from the invasion of exotic plant species.

Research Needs

It should be determined if this species is able to use artificial drainage basins, or sumps, in any significant numbers.

Habitat

In New York tooth-cup has been found most often along the shorelines and edges of ponds and lakes, as well as those of artificial wetlands including reservoirs and roadside catchment basins. It also will occupy seasonally-wet sites such as wet meadows or agricultural fields, especially where paths or other disturbance provides bare soil substrate. It has been found growing in organic muck as well as in sandy soil (New York Natural Heritage Program 2007). Sandy shores and damp depressions (Fernald 1970). In mud or wet soil (Gleason 1952).

Associated Ecological Communities

Coastal Plain Pond Shore

The gently sloping shore of a coastal plain pond with seasonally and annually fluctuating water levels. Plants growing on the pond shore vary with water levels. In dry years when water levels are low there is often a dense growth of annual sedges, grasses, and herbs. Submerged and floating-leaved aquatic plants, such as fragrant waterlily and pondweeds, may become "stranded" on the exposed shore. In wet years when the water level is high only a few emergents and floating-leaved aquatics may be noticeable. The vegetation of this pond shore community can change dramatically from one year to the next depending on fluctuations in groundwater levels.

Unpaved Road/path

A sparsely vegetated road or pathway of gravel, bare soil, or bedrock outcrop. These roads or pathways are maintained by regular trampling or scraping of the land surface. The substrate consists of the soil or parent material at the site which may be modified by the addition of local organic material (woodchips, logs, etc.) or sand and gravel. Abandoned railroad beds where tracks have been removed are included here. One characteristic plant is path rush.

Other Probable Associated Communities

Cobble shore wet meadow
Marsh headwater stream

Associated Species

Nodding Beggar-ticks (*Bidens cernua*)
Devil's Beggartick (*Bidens frondosa*)
Rose Coreopsis (*Coreopsis rosea*)
Straw-colored Flatsedge (*Cyperus strigosus*)
Yellow Spikerushm Green Spikerush (*Eleocharis flavescens*)
Blackfruit Spikerush (*Eleocharis melanocarpa*)
Blunt Spike-rush (*Eleocharis obtusa*)
Three-angle Spikerush (*Eleocharis tricostata*)
Seven-angle Pipewort (*Eriocaulon aquaticum*)
Golden Hedge-hyssop (*Gratiola aurea*)
Canadian St. John's-wort (*Hypericum canadense*)
Common Rush (*Juncus effusus*)
Brown-fruited Rush (*Juncus pelocarpus*)
Yellowseed False Pimpernel (*Lindernia dubia*)
Marsh Seedbox (*Ludwigia palustris*)
Purple Loosestrife (*Lythrum salicaria*)
Green Carpet-weed (*Mollugo verticillata*)
Dock-leaf Smartweed (*Persicaria lapathifolia*)
Slender Arrowhead (*Sagittaria teres*)

Identification Comments

Tooth-cup is a small (up to 10 cm high), annual species with often spreading or prostrate, branching stems. The leaves are opposite, short and narrow (1.5 to 3 cm long), and the

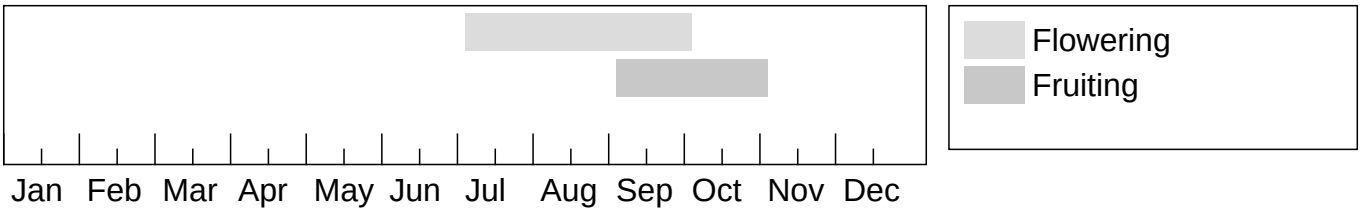
stem, and sometimes the leaves as well, may be flushed with red (Voss 1985). The tiny, solitary flowers are sessile in the axils of the upper leaves. The calyx is cup-shaped and 1-4 mm long, and the petals white and only 1 mm long.

Best Life Stage for Identifying This Species

Flowering of fruiting specimens are best for identification, though it may be possible to identify this plant from only vegetative parts.

The Best Time to See

Tooth-cup flowers from July through September, the fruits persisting through October.



The time of year you would expect to find Tooth-cup in New York.

Similar Species

Tooth-cup is the only species of Rotala in New York (or for that matter, in North America.) Marsh seedbox (Ludwigia palustris), a common species which grows in similar habitats, has a similar overall appearance, but with much broader leaves and longer calyx lobes than tooth-cup. Rotala ramosior also confused with Ammania coccinea, a related species not yet known from New York but found in New Jersey and Pennsylvania, which differs from Tooth-cup by its cordate, clasping leaf bases.

Taxonomy

Kingdom Plantae
└─ **Phylum** Anthophyta
  └─ **Class** Dicots (Dicotyledoneae)
    └─ **Order** Myrtales
      └─ **Family** Lythraceae (Loosestrife Family)

Synonyms

Ammania ramosior (L.)
Rotala ramosior var. interior (Fern. & Grisc.)

Additional Resources

Links

Connecticut Plants
http://www.ct-botanical-society.org/galleries/rotalaramo.html
Status in British Columbia
http://www.env.gov.bc.ca/wld/documents/statusrpts/b94.pdf
New York Flora Atlas
http://www.newyork.plantatlas.usf.edu/Plant.aspx?id=1890
USDA Plants Database
http://plants.usda.gov/java/nameSearch?mode=sciname&keywordquery=ROTALA+RAMOSIOR
Alabama Plants
http://www.alabamaplants.com/Pinkopp/Rotala_ramosior_page.html
Google Images
http://images.google.com/images?q=ROTALA+RAMOSIOR
NatureServe Explorer
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Best Identification Reference

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