

Species Status Assessment

Class:	Insecta
Family:	Gomphidae
Scientific Name:	<i>Gomphus rogersi</i>
Common Name:	Sable clubtail

Species synopsis:

The sable clubtail (*Gomphus rogersi*) is a member of the subgenus *Gomphurus*, one of three subdivisions of the large and diverse clubtail genus, *Gomphus*. The distributional center occurs along the southern West Virginia/Virginia border in the Appalachian Blue Ridge ecoregion. The range extends south to central Alabama and north to the New Jersey/New York border. Its northernmost locale occurs on Deep Hollow Brook at Harriman State Park where it was last observed in 2008, a location which is at nearly the same latitude as locations in western Pennsylvania (Donnelly 2004). However, these northwestern Pennsylvania records are over 35 years old and more recently, the species has only been found in southern Pennsylvania (Pennsylvania Natural Heritage Program 2010). It is possible that this central Appalachian species is temperature-limited at its northern range margin (Beatty and Beatty 1986) so a possible range contraction southward seems counter intuitive in a warming climate.

G. rogersi inhabits clear, moderately flowing small forest streams and brooks with sand, silt, or rocky substrate. Adults forage at forest edges, and perch on rocks, overhanging grass, and floating plants (Dunkle 2000). In New York, an extant site occupied since 1995 is a cold headwater brook that runs through a mixed hardwood forest with occasional sunny and marshy openings. The brook is alternately wide (approximately 8 feet) and deep, and narrow (1-3 feet), with shallow, rocky riffles. The bank is lined with ferns and nettles in sunny areas and boulders or moss-covered rocks line the stream in other places. In some areas, the stream bank is elevated 1-5 feet above the stream surface. New York's other known site is also a heavily forested stream outlet of gentle gradient connecting a small pond to a larger lake (White *et al.* 2010).

I. Status

a. Current and Legal Protected Status

- i. Federal Not listed Candidate? No
- ii. New York Not listed SGCN

b. Natural Heritage Program Rank

- i. Global G4
- ii. New York S1 Tracked by NYNHP? Yes

Status Discussion:

White *et al.* (2010) suggests that the status remain S1 (5 or fewer occurrences, or few remaining acres or miles of stream, or factors demonstrably making it especially vulnerable to extinction rangewide or in New York State).

II. Abundance and Distribution Trends

a. North America

i. Abundance

 declining increasing stable X unknown

ii. Distribution:

 declining increasing stable X unknown

Time frame considered: Last assessment 1990

b. Regional

i. Abundance

___ declining ___ increasing ___ stable X unknown

ii. Distribution:

___ declining ___ increasing X stable ___ unknown

Regional Unit Considered: Northeast

Time Frame Considered: Last assessment 1990

c. Adjacent States and Provinces

CONNECTICUT Not Present X No data ___

MASSACHUSETTS Not Present X No data ___

ONTARIO Not Present X No data ___

QUEBEC Not Present X No data ___

VERMONT Not Present X No data ___

NEW JERSEY Not Present ___ No data X

i. Abundance

___ declining ___ increasing ___ stable X unknown

ii. Distribution:

___ declining ___ increasing ___ stable X unknown

Time frame considered: _____

Listing Status: Special Concern SGCN? No

* Not included in WAP but listed as SC

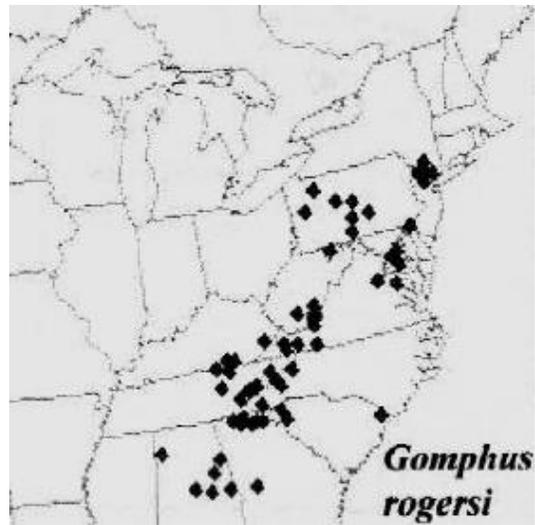


Figure 2. Distribution of the sable clubtail in the United States (Donnelly 2004).

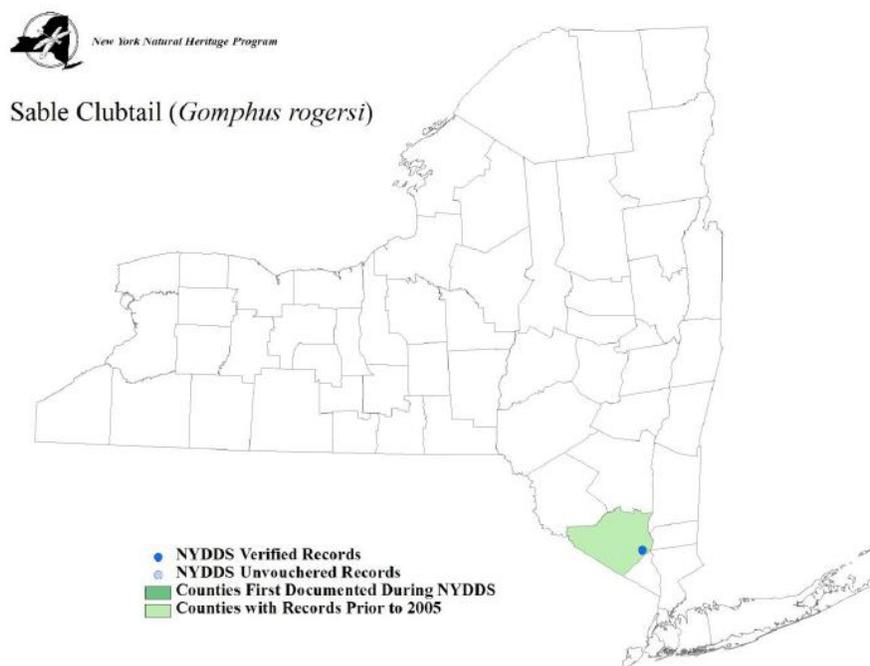


Figure 3. Occurrence records of the sable clubtail in New York (White *et al.* 2010).

III. New York Rarity, if known:

Historic	<u># of Animals</u>	<u># of Locations</u>	<u>% of State</u>
prior to 1970	_____	_____	_____
prior to 1980	_____	_____	_____
prior to 1990	_____	<u>1</u>	_____

Details of historic occurrence:

Little Cedar Pond, Orange County

Current	<u># of Animals</u>	<u># of Locations</u>	<u>% of State</u>
	_____	<u>2</u>	_____

Details of current occurrence:

Orange County— 1995, 2008

From The New York Dragonfly and Damselfly Survey 2005-2009 and based on the number of occurrences obtained from map by White *et al.* 2010 and information in Donnelly (1999).

New York’s Contribution to Species North American Range:

Distribution (percent of NY where species occurs)	Abundance (within NY distribution)
<u>X</u> 0-5%	___ abundant
___ 6-10%	___ common
___ 11-25%	___ fairly common
___ 26-50%	___ uncommon
___ >50%	<u>X</u> rare

NY’s Contribution to North American range

<u>X</u> 0-5%
___ 6-10%
___ 11-25%
___ 26-50%
___ >50%

Classification of New York Range

Core

Peripheral

Disjunct

Distance to core population:

~900 mi

Rarity Discussion:

No estimate of population size for *G. rogersi* has been made between the late 1980s to 2000 (New York Natural Heritage Program 2007). Information prior to this time frame is even more limited. Therefore, any new location information on *G. rogersi* in New York may reflect heightened interest in surveying for this species rather than a population increase or a range expansion. Recent observations of *G. rogersi* were made between the late 1980s to 2000 in Orange county (Donnelly 2004, New York Natural Heritage Program 2007).

IV. Primary Habitat or Community Type:

1. Headwater Creek, Low Gradient
2. Headwater Creek, Low-Moderate Gradient
3. Small River, Low Gradient
4. Small River, Low-Moderate Gradient

Habitat or Community Type Trend in New York:

Declining Stable Increasing Unknown

Time frame of decline/increase: _____

Habitat Specialist? Yes No

Indicator Species? Yes No

Habitat Discussion:

G. rogersi inhabits clear, moderately flowing forest streams with sand, silt, or rocky substrate (Dunkle 2000). Larvae are aquatic and found in the water during this lifestage, whereas adults are terrestrial and are found in habitats surrounding forested streams (New York Natural Heritage Program 2011).

V. New York Species Demographics and Life History

- Breeder in New York**
 - Summer Resident**
 - Winter Resident**
 - Anadromous**
- Non-breeder in New York**
 - Summer Resident**
 - Winter Resident**
 - Catadromous**
- Migratory only**
- Unknown**

Species Demographics and Life History Discussion:

There is not enough data for a definite conclusion but, *G. rogersi* likely has a very narrow flight season in New York. All of the few (<1/2 dozen) sightings both pre-NYSDDS and during, were between 23-27 June, and it was not seen at a confirmed site on 11 July. In northern New Jersey, the flight season is about one month long, from 23 May – 24 June (Bangma and Barlow 2010). Adults forage at forest edges and males are known to perch on rocks, overhanging grass, and floating plants of forest streams (Dunkle 2000). Males have been seen guarding ovapositioning females, a very unusual behavior for clubtails (Paulson 2011).

VI. Threats:

Any activity that might lead to water contamination or the alteration of natural hydrology could impact *G. rogersi* and other stream-dwelling odonates. Such threats might include chemical contamination from agricultural run-off, changes in dissolved oxygen content, increases in sediment load, development near their habitats, and the building of dams (Novak 2006, New York Natural Heritage Program 2011).

The sable clubtail was classified as “not vulnerable/increase likely” (IL) to predicted climate change in an assessment of vulnerability conducted by the New York Natural Heritage Program. Available evidence suggests that abundance and/or range extent within the geographical area assessed is likely to increase by 2050 (Schlesinger *et al.* 2011).

Are there regulatory mechanisms that protect the species or its habitat in New York?

No Unknown
 Yes

Article 15 of Environmental Conservation Law provides protection of rivers, streams, lakes and ponds through the Protection of Waters Program.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Any measures to reduce water contamination or hydrological alteration such as agricultural run-off, upland development, and damming that would affect flow of small forested streams should be considered when managing for this species (New York Natural Heritage Program 2011).

Further surveys are needed to define the distribution and population size of *G. rogersi*. In addition, research is required to understand the habitat requirements and threats to this species, and to create appropriate management guidelines for its persistence in known locations (New York Natural Heritage Program 2011).

Conservation actions following IUCN taxonomy are categorized in the table.

Conservation Actions	
Action Category	Action
Law and Policy	Policies and Regulations
Education and Awareness	Training
Education and Awareness	Awareness & Communications

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for odonates of small forest streams, and for sable clubtail in particular.

Habitat monitoring:

— Support and encourage habitat monitoring efforts that would complete the baseline assessment of habitat quality and threats.

Habitat research:

— Support and encourage research projects that will help define preferred habitat in order to guide future monitoring, restoration and habitat protection efforts.

New regulation:

— Recommendations for official state endangered, threatened, and special concern listing are an anticipated result of the statewide inventory. It is expected that one or more of these species will be recommended for listing and officially adding these species to the list would constitute a specific action.

Population monitoring:

— Conduct surveys to obtain repeatable, relative abundance estimates for these species at known sites and newly discovered sites where access permission to conduct surveys is obtained (as indicated in the State Wildlife Grant Odonate Inventory Project).

Statewide baseline survey:

— All three of these species are known from fewer than 10 locations in the state, but new populations undoubtedly remain to be discovered. A currently approved, but not yet begun State Wildlife Grant Statewide Odonate Inventory Project will utilize volunteers, Natural Heritage Program and other staff to conduct surveys for these species at potential sites throughout the state.

VII. References

Bangma J. & Barlow A. 2010. NJODES; The dragonflies and damselflies of New Jersey [web application] <<http://www.njodes.com/Speciesaccts/species.asp>>. Accessed 29 June 2012.

Beatty, G. H. and A. F. Beatty. 1968. Origin and biogeographic affinities of Odonata fauna of Pennsylvania. *Proceedings of the Pennsylvania Academy of Science* 42:110-119.

Conserve Wildlife Foundation of New Jersey. 2012. Conserve Wildlife Foundation of New Jersey; Our Species Field Guide [web application]

- <<http://www.conservewildlifenj.org/species/fieldguide/>>. Accessed 29 June 2012.
- Donnelly, T. W. 1999. The dragonflies and damselflies of New York. Prepared for the 1999 International Congress of Odonatology and 1st Symposium of the Worldwide Dragonfly Association. Colgate University, Hamilton, NY.
- Donnelly, T. W. 2004. Distribution of North American Odonata. Part I: Aeshnidae, Petaluridae, Gomphidae, Cordulegastridae. *Bulletin of American Odonatology* 7:61-90.
- Dunkle, S. W. 2000. *Dragonflies through binoculars. A field guide to the dragonflies of North America.* Oxford University Press, New York, New York, USA.
- NatureServe. 2012. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. <<http://www.natureserve.org/explorer>>. Accessed 28 June 2012.
- New York Natural Heritage Program. 2007. Elemental distribution model for *Gomphus rogersi*. Albany, NY.
- New York Natural Heritage Program. 2011. Online Conservation Guide for *Gomphus rogersi*. <<http://www.acris.nynhp.org/>>. Accessed 28 June 2012.
- Novak, P. 2006. Species Group Report for Odonates of small forest streams (pp. 66-70 of Appendix A5, Species Group Reports for Insects *in* New York State Comprehensive Wildlife Conservation Strategy. Albany, NY: New York State department of Environmental Conservation.
- Paulson, D. 2011. *Dragonflies and damselflies of the east.* Princetown University Press, Princetown, New Jersey, USA.
- Pennsylvania Natural Heritage Program. Pennsylvania Natural Heritage Program fact sheets, Roger's clubtail (*Gomphus rogersi*). The Pennsylvania Department of Conservation and Natural Resources, the Western Pennsylvania Conservancy, the Pennsylvania Game Commission, and the Pennsylvania Fish and Boat Commission, Pennsylvania. <www.naturalheritage.state.pa.us/factsheets/11997.pdf>. Accessed 28 June 2012.
- Schlesinger, M.D., J.D. Corser, K.A. Perkins, and E.L. White. 2011. Vulnerability of at-risk species to climate change in New York. New York Natural Heritage Program, Albany, NY.
- White, Erin L., Jeffrey D. Corser, and Matthew D. Schlesinger. 2010. The New York dragonfly and damselfly survey 2005-2009: Distribution and status of the odonates of New York. New York Natural Heritage Program, Albany, New York, USA.

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