

## Species Status Assessment

<b>Class:</b>	Insecta
<b>Family:</b>	Gomphidae
<b>Scientific Name:</b>	<i>Gomphus ventricosus</i>
<b>Common Name:</b>	Skillet clubtail

### Species synopsis:

The distribution center of *G. ventricosus* lies along the Lake Erie shoreline in northeast Ohio in the southern Great Lakes forest ecoregion, extending northwest to northern Minnesota, east to Nova Scotia, and south to central Tennessee (Donnelly 2004). *G. ventricosus* is rare and spottily distributed throughout its range, particularly in the east (Walker 1958).

Although extensive searches during the New York State Dragonfly and Damselfly Survey (NYSDDS) failed to detect the species in eastern New York, recent records suggest that it should occur there. These records include occurrences from the Connecticut River in Massachusetts and Connecticut, as well as smaller rivers near the NY border, such as the Housatonic (Massachusetts NHESP 2003).

*G. ventricosus* was formerly known in New York State from two pre-1926 records— one from Pine Island, probably the upper Wallkill River (where the species still occurs in New Jersey), and another from Old Forge (likely on the Moose River). A 2009 survey of the Moose River was not successful in locating any individuals. However, a new population was documented in New York along the Raquette River between Potsdam and Massena on the northeast Lake Ontario/St. Lawrence Plain in both 1997 and 1998 (White *et al.* 2010).

Throughout its range, *G. ventricosus* prefers small to large turbid rivers with partial mud bottoms, but good water quality. An older locale in Pine Island of Orange County, presumably along the upper Wallkill River, was a slow moving creek with a muddy/muck bottom and stained/turbid water. Grasses and woody shrubs grew along the banks. The newly discovered Raquette River population inhabits a rocky, deep river with clear water and a sand/gravel substrate (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      G3
- ii. New York    S1      Tracked by NYNHP? Yes

**Other Rank:**

None

**Status Discussion:**

White *et al.* (2010) calculated a revised draft S-rank of S1 from SH.

**II. Abundance and Distribution Trends**

**a. North America**

**i. Abundance**

X declining    \_\_\_increasing    \_\_\_stable    \_\_\_unknown

**ii. Distribution:**

X declining    \_\_\_increasing    \_\_\_stable    \_\_\_unknown

**Time frame considered:** \_\_\_\_\_

**Moderate decline**

**b. Regional**

**i. Abundance**

declining  increasing  stable  unknown

**ii. Distribution:**

declining  increasing  stable  unknown

Regional Unit Considered: Northeast

Time Frame Considered: \_\_\_\_\_

Moderate decline

**c. Adjacent States and Provinces**

CONNECTICUT                      Not Present \_\_\_\_\_                      No data \_\_\_\_\_

**i. Abundance**

declining  increasing  stable  unknown

**ii. Distribution:**

declining  increasing  stable  unknown

Time frame considered: \_\_\_\_\_

Listing Status: Special Concern                      SGCN? Yes

Moderate decline

MASSACHUSETTS                      Not Present \_\_\_\_\_                      No data \_\_\_\_\_

**i. Abundance**

declining  increasing  stable  unknown

**ii. Distribution:**

declining  increasing  stable  unknown

Time frame considered: \_\_\_\_\_

Listing Status: Special Concern                      SGCN? Yes

Moderate decline

**NEW JERSEY**                      **Not Present** \_\_\_\_\_                      **No data**   X  

**i. Abundance**

\_\_\_\_ declining    \_\_\_\_ increasing                      \_\_\_\_ stable                      \_\_\_\_ unknown

**ii. Distribution:**

\_\_\_\_ declining    \_\_\_\_ increasing                      \_\_\_\_ stable                      \_\_\_\_ unknown

Time frame considered: \_\_\_\_\_

Listing Status: \_\_\_\_\_ Not listed \_\_\_\_\_ SGCN?   No  

**ONTARIO**                      **Not Present**   X                        **No data** \_\_\_\_\_

\* historically present but presumed extirpated

**QUEBEC**                      **Not Present**   X                        **No data** \_\_\_\_\_

**PENNSYLVANIA**                      **Not Present** \_\_\_\_\_                      **No data**   X  

**i. Abundance**

\_\_\_\_ declining    \_\_\_\_ increasing                      \_\_\_\_ stable                        X   unknown

**ii. Distribution:**

\_\_\_\_ declining    \_\_\_\_ increasing                      \_\_\_\_ stable                        X   unknown

Time frame considered: \_\_\_\_\_

Listing Status: \_\_\_\_\_ SGCN? \_\_\_\_\_

**VERMONT**                      **Not Present** \_\_\_\_\_                      **No data**   X  

**i. Abundance**

\_\_\_\_ declining    \_\_\_\_ increasing                      \_\_\_\_ stable                        X   unknown

**ii. Distribution:**

\_\_\_\_ declining    \_\_\_\_ increasing                      \_\_\_\_ stable                        X   unknown

Time frame considered: \_\_\_\_\_

Listing Status: \_\_\_\_\_ Not listed \_\_\_\_\_ SGCN?   No

**d. NEW YORK**

No data \_\_\_\_\_

**i. Abundance**

\_\_\_ declining \_\_\_ increasing \_\_\_ stable X unknown

**ii. Distribution:**

\_\_\_ declining \_\_\_ increasing \_\_\_ stable X unknown

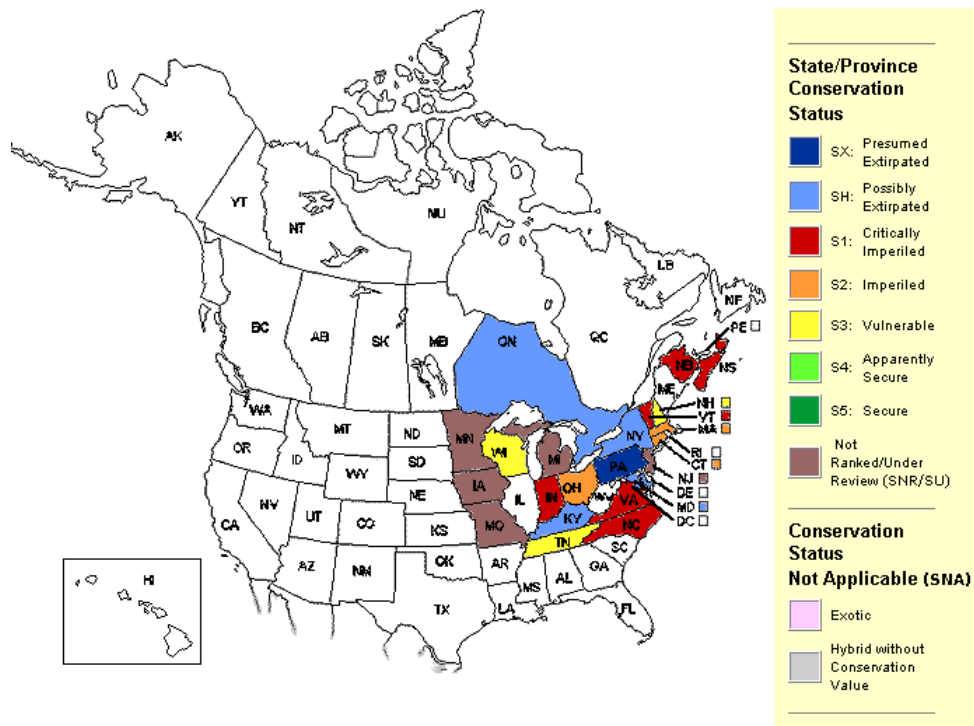
Time frame considered: \_\_\_\_\_

**Monitoring in New York.**

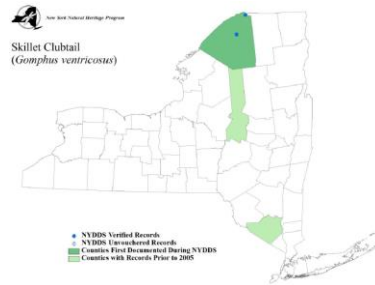
None

**Trends Discussion:**

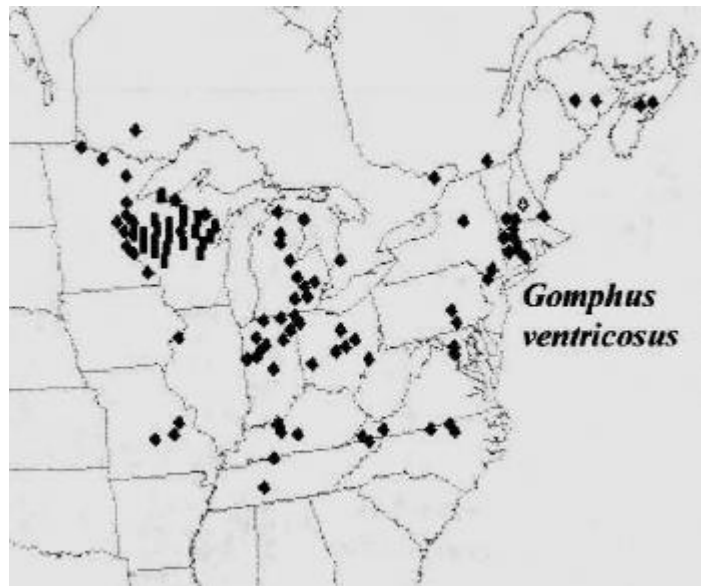
No long-term trends have been identified, but short-term trends show a decline of 10-30% (NatureServe 2012).



**Figure 1.** Conservation status of skillet clubtail in North America (NatureServe 2012).



**Figure 2.** Occurrence records of skillet clubtail in New York (White *et al.* 2010).



**Figure 3.** Distribution of skillet clubtail in the United States (Donnelly 2004).

**III. New York Rarity, if known:**

Historic (select one)	<u># of Animals</u>	<u># of Locations</u>	<u>% of State</u>
prior to 1970	_____	<u>2</u>	_____
prior to 1980	_____	_____	_____
prior to 1990	_____	_____	_____

**Details of historic occurrence:**

From New York Nature Explorer (2009): Herkimer County — 1926; Orange County — 1926.

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

**Details of current occurrence:**

St. Lawrence County — 1997

From The New York Dragonfly and Damselfly Survey 2005-2009. Number of occurrences obtained from map by White *et al.* 2010.

**New York's Contribution to Species North American Range:**

<b>Distribution</b> (percent of NY where species occurs)	<b>Abundance</b> (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**

- X 0-5%
- \_\_\_ 6-10%
- \_\_\_ 11-25%
- \_\_\_ 26-50%
- \_\_\_ >50%

**Classification of New York Range**

Core

Peripheral

Disjunct

**Distance to core population:**

\_\_\_\_\_

**Rarity Discussion:**

The species is rare and spottily distributed throughout its range, especially in the east (Walker 1958).

**IV. Primary Habitat or Community Type:**

- 1. Riverine, coldwater stream, mud bottom
- 2. Riverine, warmwater stream, mud bottom
- 3. Riverine, deep, sand and gravel bottom

**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:**

Throughout its range, the species prefers small to large turbid rivers with partial mud bottoms, but good quality water. The newly documented Raquette River population occupies a rocky, deep river with clear water and a sand/gravel substrate (White *et al.* 2010).

### **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:**

*Gomphus ventricosus* is among the most poorly understood Odonate species in North America. Adults have been recorded from late May into mid-July. Although little is known about this species, it is likely similar to others in the genus. The nymphs are aquatic and spend a year or more maturing and undergoing several molts within that period. They burrow into the sandy bottoms of rivers and are voracious predators, feeding on a variety of aquatic life. During eclosion, nymphs crawl out onto exposed rocks, emergent vegetation, partially submerged logs, or the steeper sections of river banks, usually during the early morning (presumably to reduce exposure to predation). Teneral adults spend several days or more in the vegetation of adjacent uplands, feeding and maturing before returning to their breeding habitats. Clubtails feed on small insects captured in short trips from their perches (Massachusetts NHESP 2012).

Once mature, males return to the water. They often perch horizontally on the broad leaves of overhanging vegetation, and occasionally on exposed rocks. They sometimes hover over rapids, presumably in search of females. Females generally only return to water for a brief period to mate and lay eggs. The duration of mating in clubtails has not been recorded. Oviposition by female *G. ventricosus* also has not been reported, but in similar species involves flying low over the water and periodically striking the surface to wash off eggs. Development time for the eggs is also unknown (Massachusetts NHESP 2012).

Adults have been collected in northern New York between 8 June and 25 June. In other states, such as Massachusetts and Wisconsin, the species is observed from late May to mid July, with the peak in June (Massachusetts NHESP 2003, Wisconsin Odonata Survey 2009).

## **V. Threats:**

Threats include impoundments, channelization, dredging, siltation, agricultural non-point pollution, and municipal and industrial pollution. Timber harvest may increase erosion and silt and cause a decrease in dissolved oxygen as canopy cover is removed and water temperature rises. Extensive use of the river by power boats and jet skis is a serious concern, especially during emergence, when they are often low over the water surface or on exposed perches (NatureServe 2012).

## **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:**

Exact management needs of *G. ventricosus* are not known. As with most Odonates, water quality is critical (Massachusetts NHESP 2012). Tolerance to pollution and dissolved oxygen levels needs to be documented (NatureServe 2012).

Additional surveys are needed on the Moose River near Old Forge. Surveys should also be conducted on other large rivers draining the Adirondacks to the north including the Grass, Oswegatchie, St. Regis, and Chateaugay, which may hold populations in their lowlands (White *et. al* 2010).

Development of upland areas should be discouraged, as they are critical for feeding, resting, and maturation. Preservation of remaining underdeveloped upland should be a top priority (Massachusetts NHESP 2012).

Conservation actions following IUCN taxonomy are categorized in the table.

Conservation Actions	
Action Category	Action
Law and Policy	Policies and Regulations

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for odonates of rivers and streams, and for skillet 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 at least a few species will be recommended for listing and officially adding these species to the list would constitute a concrete action. Four of the species are currently listed as Special Concern, but it is possible a change in their listing status may be warranted following additional surveys.

**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:**

— Most 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.

## VI. References

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**Date last revised:** \_\_\_\_\_ February 19, 2014 \_\_\_\_\_