

Species Status Assessment

Class: Insecta
Family: Gomphidae
Scientific Name: *Gomphus viridifrons* (*Hylogomphus viridifrons*)
Common Name: Green-faced clubtail

Species synopsis:

The green-faced clubtail (*Gomphus viridifrons*) is rare throughout its range (Walker 1958). The center of its distribution lies in the southern Great Lakes forest ecoregion, along the northern Ohio/Indiana border, ranging north to northern Minnesota and south to central Alabama (Donnelly 2004, White *et al.* 2010). A cluster of three records from the Delaware River in New York (Sullivan, Orange Counties) and New Jersey (Sussex County) constitute the northeasternmost occurrence of this species (New York Natural Heritage Program 2011). Here, adults have not been observed since 1940 and just a single larva collected from Port Jervis was reared to emergence in 1994, while only exuviae have been found in nearby New Jersey (Bangma and Barlow 2010). This species inhabits clean medium-sized rocky forest streams and small rivers with gravel/sand substrates and lightly silted rocks (Dunkle 2000). In New York, a single larva was dredged from a sandy, pool-like backwater on the back side of an island in the Delaware River near Port Jervis. The main flow of the river is west of the island and the river is rapid, shallow, rocky and about 100 meters wide (White *et al.* 2010).

I. Status

a. Current Legal Protected Status

i. **Federal** Not Listed **Candidate:** No

ii. **New York** Not listed; SGCN

b. Natural Heritage Program Rank

i. **Global** G3G4

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

 X declining ___increasing ___stable ___unknown

ii. Distribution:

 X declining ___increasing ___stable ___unknown

Time frame considered: Last assessment US 1998; Canada 2012

b. Regional

i. Abundance

 X declining ___increasing ___stable ___unknown

ii. Distribution:

 X declining ___increasing ___stable ___unknown

Regional Unit Considered: Northeast

Time Frame Considered: Last assessment 1998

c. Adjacent States and Provinces

CONNECTICUT **Not Present** X **No data**

MASSACHUSETTS **Not Present** X **No data**

QUEBEC **Not Present** X **No data**

VERMONT **Not Present** X **No data**

NEW JERSEY **Not Present** **No data**

i. Abundance

 declining increasing stable X unknown

ii. Distribution:

 declining increasing stable X unknown

Time frame considered: _____

Listing Status: _____ Not listed (S1) _____ SGCN? Yes

ONTARIO **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 _____

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: _____ Not listed _____ SGCN? No

d. NEW YORK Not Present _____ No data _____

i. Abundance

____ declining ____ increasing ____ stable X unknown

ii. Distribution:

____ declining ____ increasing ____ stable X unknown

Time frame considered: 1994-2009

Monitoring in New York.

The New York State Dragonfly and Damselfly Survey was conducted from 2005-2009, but there are no organized, regular monitoring or survey activities directed toward this species or to sites where it has been documented. Some efforts have been made to relocate this species at Port Jervis and elsewhere on the Delaware River, but these would not be described as regular surveys or regular monitoring.

Trends Discussion:

One recent observation of *G. viridifrons* is from a larvae collected at Port Jervis in Orange County and reared in May 1994 and one specimen was collected at Barryville in Sullivan County in 1940, New York (Donnelly 2004, New York Natural Heritage Program 2007). Since there is limited historical information, only one recent record, and the full extent and size of the populations have not been determined, it is not possible to speculate on long-term trends in New York.

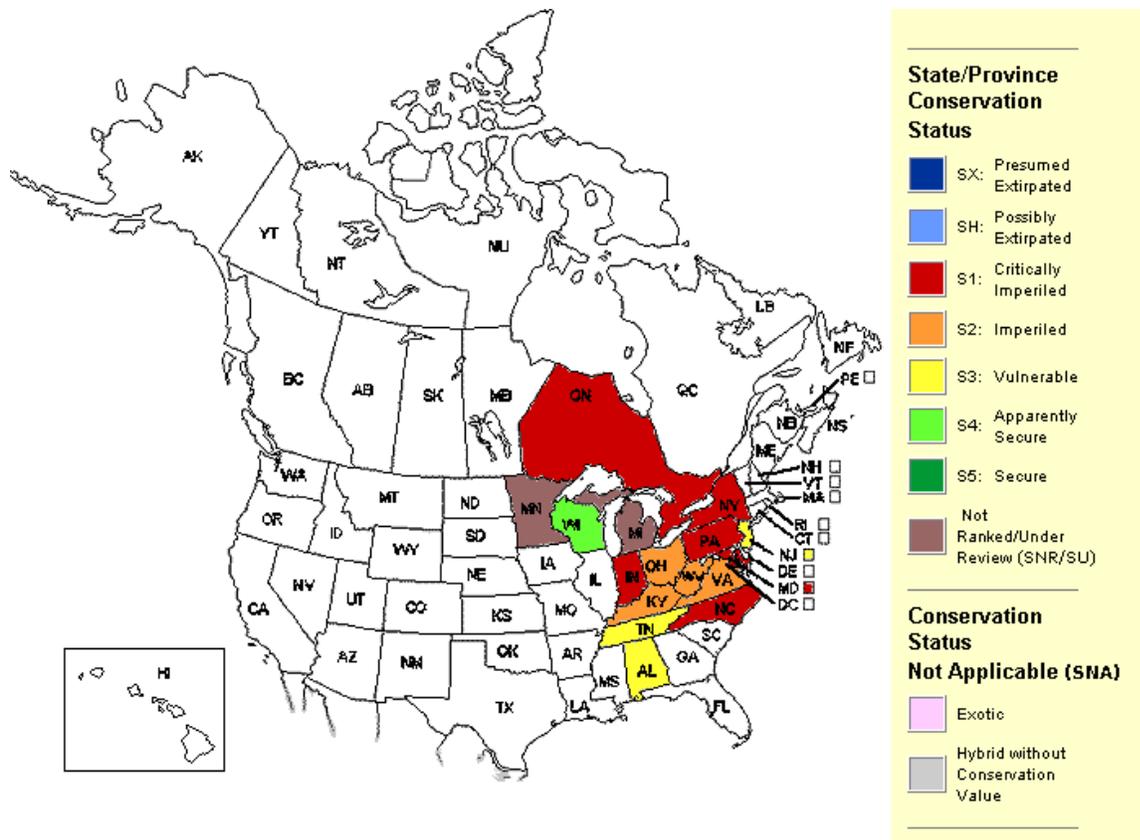


Figure 1. Conservation status of green-faced clubtail (NatureServe 2012).

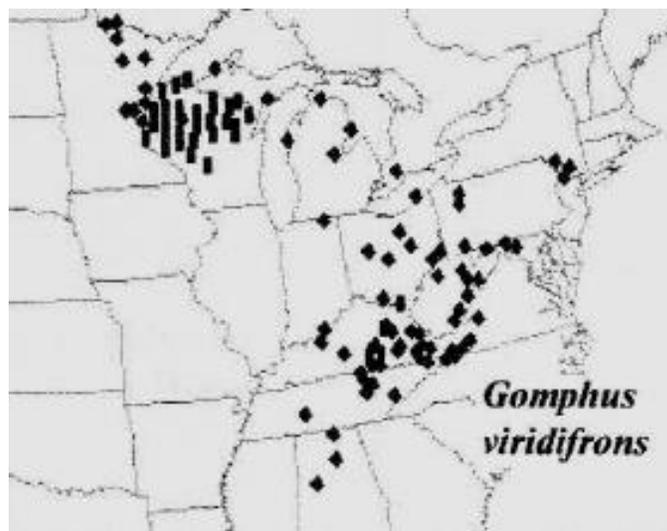


Figure 2. Distribution of green-faced clubtail in the United States (Donnelly 2004).



Green-faced Clubtail (*Gomphus viridifrons*)

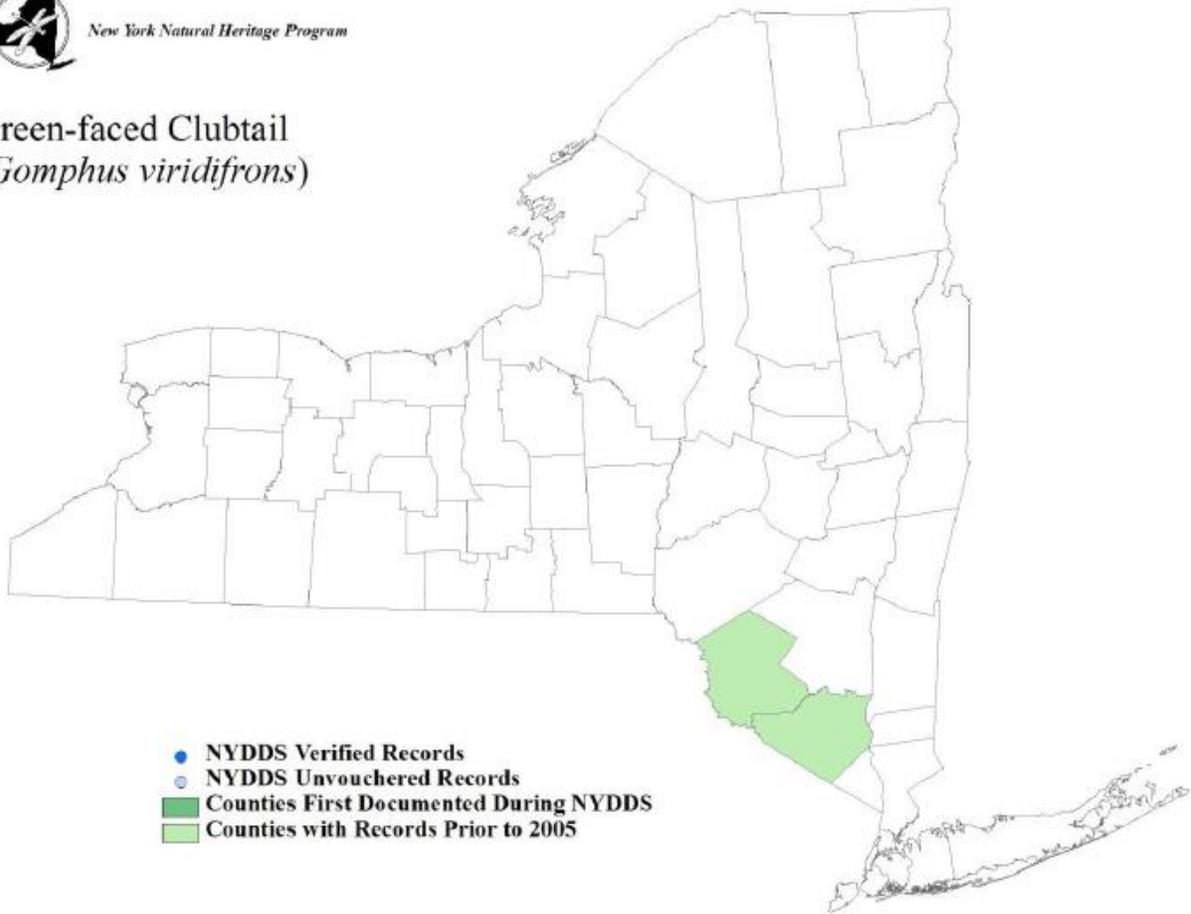


Figure 3. Occurrence records of green-faced clubtail in New York (White *et al.* 2010).

III. New York Rarity, if known:

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

Details of historic occurrence:

The sole historical record for this species in New York is from Barryville on the Delaware River in 1940 (Donnelly 1992).

Current

of Animals

of Locations

% of State

_____1_____

Details of current occurrence:

While the species has not been relocated at Barryville (some, but not a great deal of effort expended there in recent years), it was found at a second location on the Delaware River, Port Jervis, in 1994 (Donnelly1999). While some unsuccessful search effort has been made to duplicate the Port Jervis location, it is still considered an extant occurrence.

New York's Contribution to Species North American Range:

Distribution (percent of NY where species occurs)

Abundance (within NY distribution)

X 0-5%

___ abundant

___ 6-10%

___ common

___ 11-25%

___ fairly common

___ 26-50%

___ uncommon

___ >50%

X rare

NY's Contribution to North American range

X 0-5%

___ 6-10%

___ 11-25%

___ 26-50%

___ >50%

Classification of New York Range

___ Core

X Peripheral

___ Disjunct

Distance to nearest population:

~1,000 mi

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:

Adults fly 1- 3 meters above the water surface, about 3-10 meters out from the shore, often hovering near the head of riffles and rapids, or perching on shoreline vegetation and exposed rocks (Evans 2002). Females their eggs in fast-moving water while tapping their abdomens onto the water's surface (Mead 2003). *G. viridifrons* larvae feed on smaller aquatic invertebrates. Adults are active almost exclusively over water or up in the trees where they hunt insects (New York Natural Heritage Program 2011).

The adult specimen for New York was from late July, while the reared larval specimen was collected in May. These records ,and flight periods of related species on the Delaware River, would suggest a June/July flight period for this species in New York.

VI. Threats:

Any activity which might lead to water contamination or the alteration of natural hydrology could affect green-faced clubtail populations. Such threats might include agricultural run-off, increases in sedimentation, and changes in dissolved oxygen content of streams and rivers (New York Natural Heritage Program 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 some protection of rivers, streams, lakes and ponds through the Protection of Waters Program. National Park Service Wild and Scenic River designation provides considerable protection to the Delaware River.

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 chemical contamination from agricultural run-off and increases in sediment load in streams and rivers should be considered when managing for this species (New York Natural Heritage Program 2011).

There is some indication that the substrate on the Delaware River has become modified by the construction of dams on river tributaries which have altered natural flow regimes and result in reduction of fine sediments needed for some aquatic species for burrowing. Removal of smaller, dams located on tributaries which are no longer serving a function, could provide some addition of finer sediments to at least some reaches of the river which may benefit this species

Further research is required to understand the habitat requirements of and threats to this species, and to create appropriate management guidelines for its persistence in known locations (New York Natural Heritage Program 2011).

Additional surveys are needed on the Delaware River in New York to clarify the species status and presence. This clubtail occurs in northwestern Pennsylvania which suggests the possibility that it could exist in the Allegheny drainage in southwestern New York so additional inventory there is warranted (White *et al.* 2010).

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 green-faced 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.

While the Port Jervis record is recent (1994) the other New York record is from 1940 and the two locations are roughly 20 miles apart. It is unclear if the species is extremely localized or occurs between the two locations. Further survey efforts are needed to clarify the species status on the Delaware and the species presence in northwestern Pennsylvania suggests the possibility that it could exist in the Allegany drainage in southwestern New York.

VII. References

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