Species Status Assessment

Common Name: Brook snaketail **Date Updated:** April 2025

Scientific Name: *Ophiogomphus aspersus* **Minor Edits By:** NYSDEC Wildlife Section

Class: Insecta

Family: Gomphidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

The brook snaketail (*Ophiogomphus aspersus*) is a northeastern species, occurring from New Brunswick, Nova Scotia, and Quebec, southward through New England and New York and into the Appalachians in Virginia, North Carolina, and Kentucky (Abbott 2007). Within that range the species has been described as spottily distributed or localized (Nikula *et al.* 2003). Older records of *O. aspersus* in New York suggested this clubtail might be restricted to the Adirondacks and the Delaware River/Catskills area (Donnelly 1992), but it was subsequently found in Columbia County as well (Donnelly 1999). During the New York State Dragonfly and Damselfly Survey (NYDDS), Warren, Washington, Rensselaer, Dutchess and Montgomery Counties were added to New York's distribution. While these records indicate the *O. aspersus* is more widespread in New York than previously believed, it is undoubtedly more common in the Adirondacks than elsewhere in the state (White et al. 2010). During the NYDDS, either sand/gravel or rock/boulder were listed as the substrate at all of the sites where this species was recorded. The majority of sites were bordered by woods, as would have been expected based on New York records from prior to the NYDDS, but interestingly, adjacent agriculture was noted at several sites, all of which were outside of the Adirondacks (White et al. 2010).

DEC is not aware of any additional data or new information on population trends or threats to this species since the last SWAP revision in 2015 to indicate a need for change in SGCN status.

I. Status

a. Current legal protected Status

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

ii. **New York:** Not listed

b. Natural Heritage Program

i. **Global:** G4

ii. **New York:** S3 **Tracked by NYNHP?:** Yes

Other Ranks:

-NYS 2025 SGCN Status: SGCN

-IUCN Red List: Least Concern

-Northeast Regional SGCN: Watchlist

Status Discussion:

White *et al.* (2010) calculated a revised draft S-rank of S3 (either uncommon or local, typically with 21 to 100 occurrences, limited acreage, or miles of stream in New York State) from its previous rank of S2. This revision is based at least in part, on the additional number of records and broader distribution documented during the New York Dragonfly and Damselfly Survey (2005-2009).

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Unknown	Unknown	US: 2006 CA: 2012		-
Northeastern US	Yes	Unknown	Stable	2006		-
New York	Yes	Unknown	Stable	1992-2009		Yes
Connecticut	No data	-	-			-
Massachusetts	Yes	Unknown	Unknown		SC	Yes
New Jersey	Yes	Unknown	Unknown		T	Yes
Pennsylvania	No	-	-			-
Vermont	No data	-	-			-
Ontario	No	-	-			-
Quebec	No data	-	-			-

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted 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.

Trends Discussion *(insert map of North American/regional distribution and status):*

The number of new locations where this species was recorded from the mid 1990s through the years of the New York Dragonfly and Damselfly Survey (2005-2009) might suggest that this species is increasing or expanding within the state. However, it is more likely that the new records are a reflection of increased survey effort by a larger number of knowledgeable observers (Paul Novak, pers. comm.).

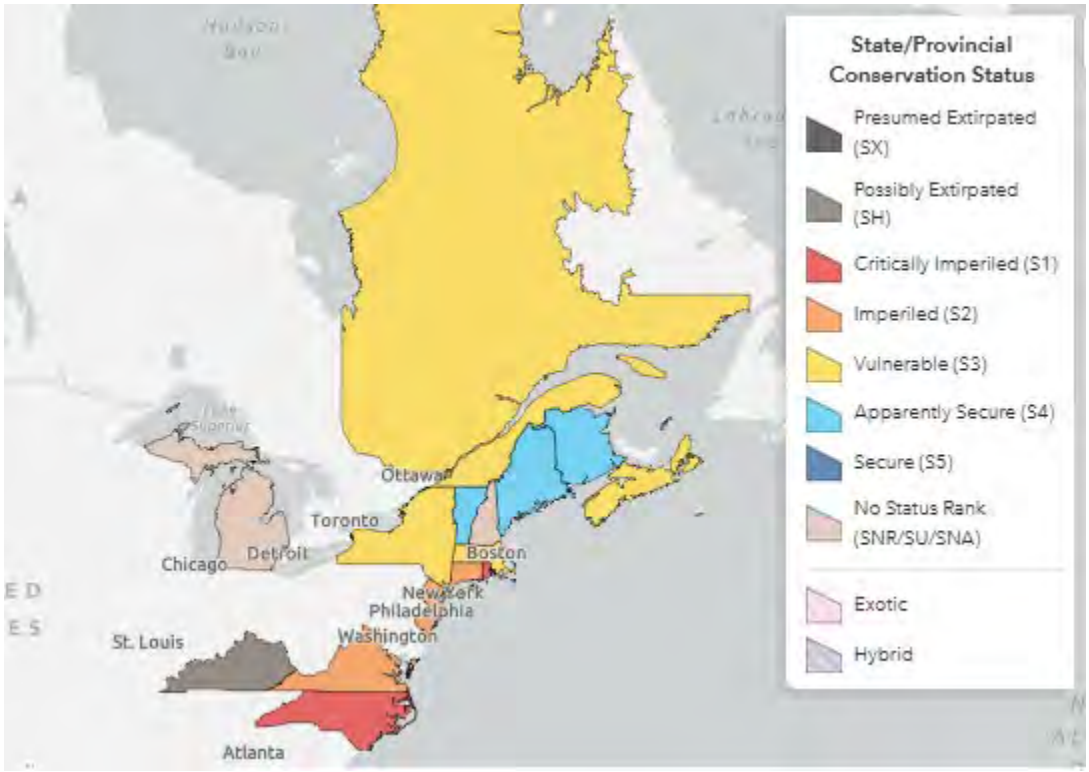

Figure 1. Conservation status of *Ophiogomphus aspersus* in North America (NatureServe 2025).

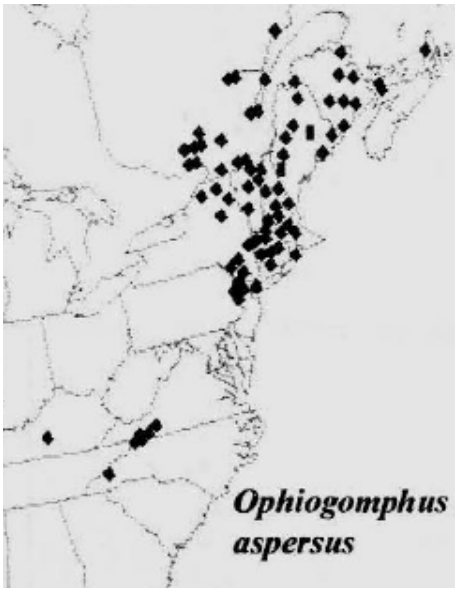

Figure 2. Distribution of brook snaketail in the United States (Donnelly 2004).

III. **New York Rarity** *(provide map, numbers, and percent of state occupied)*

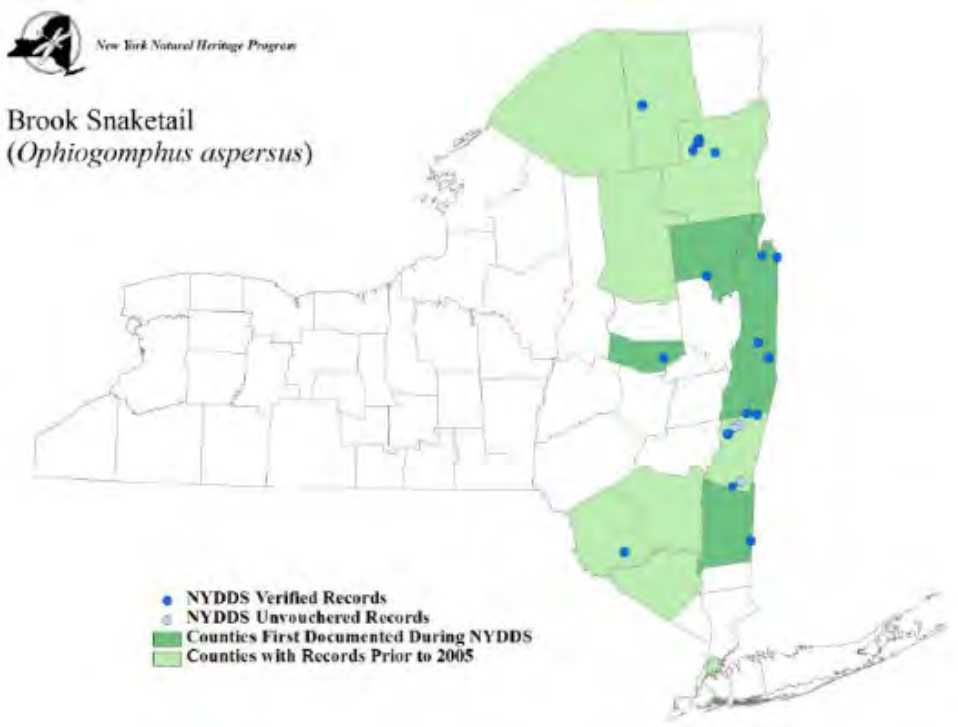

Figure 3. Occurrence records of brook snaketail in New York (White *et al.* 2010).

Details of historic and current occurrence:

Three locations listed by Donnelly (1992) would be considered historical records including: Saranac Inn, Franklin County; 10 miles north of Long Lake, Hamilton County; and Van Cortlandt Park, New York City.

This snaketail was recorded from Sullivan County in the early 1990s and from Essex, Ulster, Columbia, and Orange Counties by 1999 (Donnelly 1999). During the NYDDS (2005–2009), Warren, Washington, Rensselaer, Dutchess, and Montgomery counties were added to the species known New York county distribution. Some occurrences for the species span multiple counties as the occupied rivers and streams flow from one county to another, or a county boundary is in the middle of the river or stream, but the species has been recorded on least 15 different streams or rivers since the mid-1990s (New York Natural Heritage Program 2013).

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	~500 mi

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

a. Headwater Creek, Low-Moderate Gradient, Low Buffered, Acidic, Cold

b. Small River, Low-Moderate Gradient, Low Buffered, Acidic, Cold

c. Medium River, Low-Moderate Gradient, Low Buffered, Acidic, Cold

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Unknown	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Throughout its range, *O. aspersus* inhabits clear, rapid-flowing streams that are shallow with sandy and rocky substrate (Dunkle 2000, Needham *et al.* 2000). It is often found near riffles at open areas of streams where the banks are brushy (Dunkle 2000). It may also be found in fast-flowing areas of larger rivers with similar substrate (New York Natural Heritage Program 2010). These habitat descriptions correspond well with records obtained during the NYDDS, where either sand/gravel or rock/boulder were listed as the substrate at all of the sites where this species was recorded. The majority of sites were bordered by woods, as would have been expected based on New York records from prior to the NYDDS. Interestingly, adjacent agriculture was noted at several sites, all of which were outside of the Adirondacks (White *et al.* 2010).

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	-	-	Yes	Yes	-

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

Nikula *et al.* (2003) shows a flight season extending from early June into very early September, while Donnelly (1999) shows a range of dates from 11 June through 18 August for New York. Most of the May dates represent tank-reared specimens that were collected and reared to adult in early spring. However, an exuvia was collected on 23 May from Columbia County. *O. aspersus* emerge in large numbers in early summer as do the other species of snaketail. A study of co-occurring snaketail species in Maine (Bradeen 1996,Gibbs *et al.* 2004) indicated that *O. aspersus* tend to emerge somewhat later than several of the other snaketail species. In New York, *O. aspersus* exuviae are typically first encountered in early June. As with other clubtail species, recently emerged adults use sunny openings away from the streams for at least a few days before reappearing at the waterside. Similar to the dates shown in Donnelly (1999), adult records from the NYDDS are spread across the majority of the summer into August. The August dates suggest that this species may fly a bit later in the summer than some of the other snaketail species, which would be in keeping with the slightly later emergence dates found by Bradeen (1996).

O. aspersus nymphs spend the bulk of their time burrowing in the sand. This structure is used by the nymph to capture prey. The duration of complete larval development is not known. However, for similarly sized dragonflies, the process takes about a year. The nymph usually crawls up directly onto the bank of the stream to emerge, though it may also utilize rocks or logs jutting out of the water and even bridge abutments. Once the adult emerges, it flies into the woods that surround the breeding habitat as soon as possible. When they are fully mature in about a week they return to the stream. Females spend little time around the breeding habitat, except during the brief time when they are ready to mate and lay eggs. When mating is completed, the female returns to the water in order to lay her eggs (Massachusetts NHESP 2008).

VI. Threats *(from NY 2015 SWAP or newly described):*

Threat Level 1	Threat Level 2	Threat Level 3	Spatial Extent	Severity	Immediacy	Trend	Certainty
1. Residential and Commercial	1.1 Housing & Urban Areas	(habitat loss)	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
5. Biological Resource Use	5.3 Logging & Wood Harvesting	(siltation)	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
7. Natural System Modifications	7.2 Dams & Water Management/Use	(alteration of natural hydrology)	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
9. Pollution	9.1 Domestic & Urban Wastewater	9.1.1 Domestic wastewater (poor water quality)	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
9. Pollution	9.1 Domestic & Urban Wastewater	(runoff from roads)	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
9. Pollution	9.3 Agricultural & Forestry Effluents	9.3.3 Herbicides & pesticides (pesticides)	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.

Table 1. Threats to *Ophiogomphus aspersus.*

Little published information is available citing specific cases of negative impacts to the various species of river dwelling odonates, but any activities which degrade the sensitive hydrology of these habitats would threaten populations of these species. The most important likely negative impacts would come from changes in the natural hydrology such as the building of dams, increases in the sediment load of the river (such as might result should logging occur down to the river edge), changes in dissolved oxygen content, direct effects of pesticides, and chemical contamination by runoff of agricultural or other discharge (Novak 2006). The majority of the sites for this species lie within the Adirondack Blue Line and some of these streams and rivers are probably not subject to or threatened by many of these factors, though road runoff is a possibility as the watercourses often run close to roads.

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

Yes: ✓ **No:** **Unknown:**

If yes, describe mechanism and whether adequate to protect species/habitat:

Article 15 of Environmental Conservation Law provides some protection of rivers, streams, lakes and ponds through the Protection of Waters permit program. However, this protection may not be adequate to protect the habitat/species.

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

Any efforts to reduce agricultural run-off, salt run-off from roadways, flow manipulation, development of upland stream borders, and contamination of fast-flowing streams should be considered when trying to conserve this species (Natural Heritage Endangered Species Program 2003). In addition, research, especially related to the larvae, is required to understand the habitat requirements and threats to this species, and to create appropriate conservation guidelines for its persistence in known locations (Natural Heritage Endangered Species Program 2003).

Action Category	Action	Description
C.7 Legislative and Regulatory Framework or Tools	C.7.1.3.0 Create, amend, or influence regulation	
C.7 Legislative and Regulatory Framework or Tools	C.7.2.1.0 Create or amend policies	

Table 2. Recommended conservation actions for *Ophiogomphus aspersus.*

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for odonates of rivers and streams, and for brook snaketail 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.

VII. References

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