Species Status Assessment

Common Name: Umber shadowdragon **Date Updated:** April 2025

Scientific Name: *Neurocordulia obsoleta* **Minor Edits By:** NYSDEC Wildlife Section

Class: Insecta

Family: Corduliidae

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

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:** G5

ii. **New York:** S1 **Tracked by NYNHP?:** Yes

Other Ranks:

-NYS 2025 SGCN Status: SGCN

-IUCN Red List: Least Concern

-Northeast Regional SGCN: Not listed

Status Discussion:

This species was re-classified by NYNHP from unrankable (SU) to S1 based on the results of the NYDDS (White et al., 2010).

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Stable	Stable			-
Northeastern US	Yes	Unknown	Declining	Pre-post 2000		-
New York	Yes	Unknown	Stable	Pre-post NYDDS (White et al., 2010).		-

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
Connecticut	Yes	Unknown	Stable	1990s-2000s		-
Massachusetts	Yes	Unknown	Stable	1990s-2000s		Yes
New Jersey	Yes	Unknown	Stable	2000s		-
Pennsylvania	Yes	Unknown	Declining	No records since 1970s?		-
Vermont	No	-	-			-
Ontario	No	-	-			-
Quebec	No	-	-			-

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 (NYSDDS) 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):*

Unlike in New York, plenty of new records of this species were discovered during the recent New Hampshire and Maine odonate Atlasses (Brunelle and DeMayanadier, 2005; Hunt, 2012). Most jurisdictions where this species occurs seem to have stable populations.

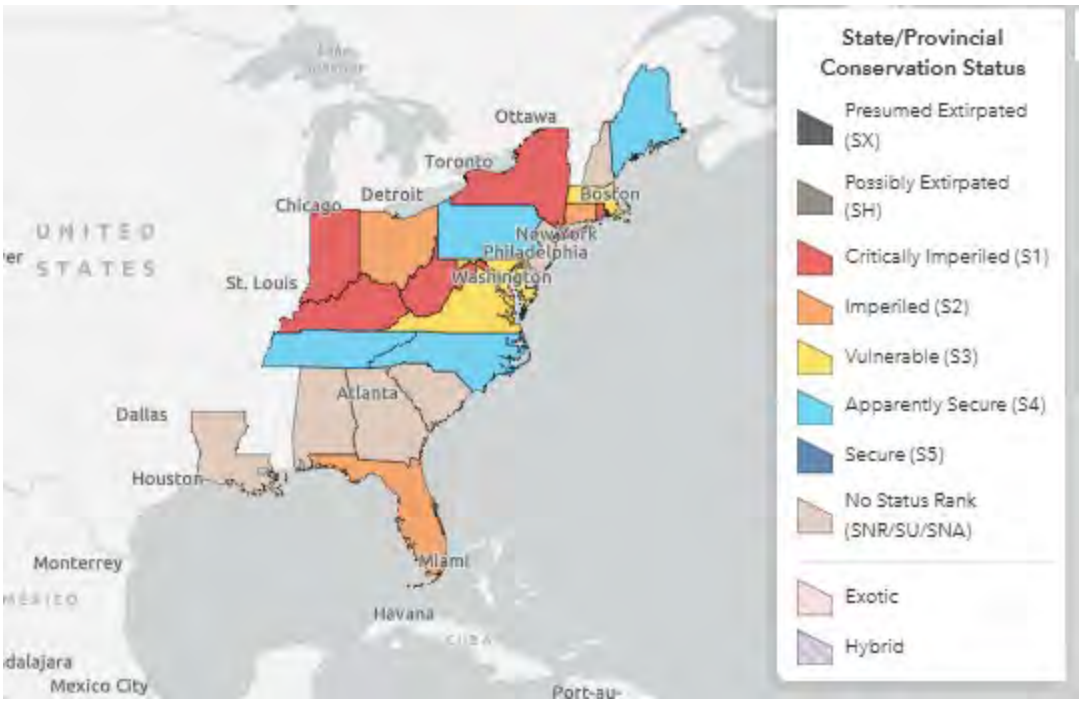

Figure 1. Conservation status of *Neurocordulia obsoleta* in North America (NatureServe 2024)

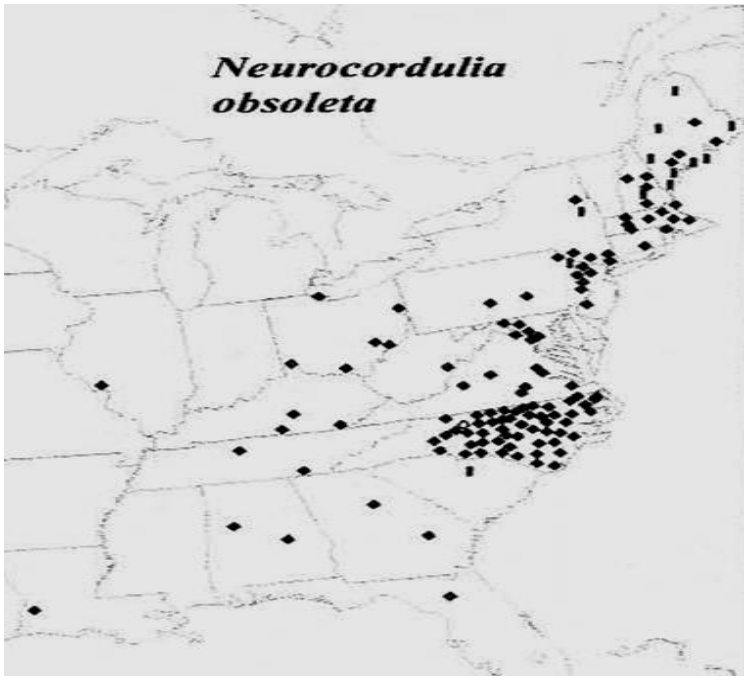

Figure 2. Distribution of the Umber shadowdragon in the United States (Donnelly 2004).

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

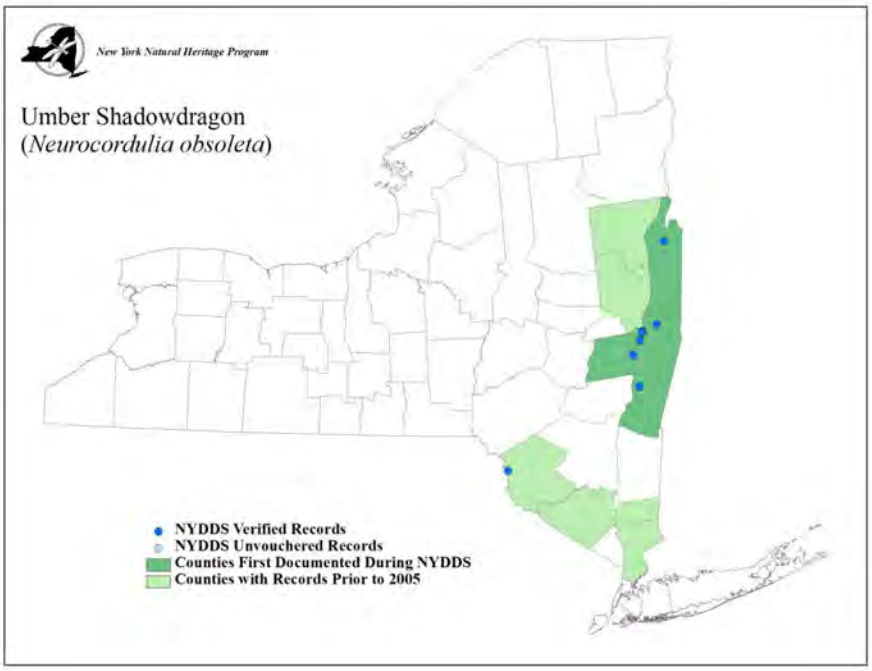

Figure 3. Occurrence records of the Umber shadowdragon in New York (White *et al.* 2010).

Details of historic and current occurrence:

Pre-NYDDS records occurred primarily in two clusters, one in the extreme southeastern part of the state, and the other in the upper Hudson River region (White et al., 2010)

Only exuviae were detected during NYDDS for this cryptic, crepuscular species. One population occurs along the mid-Hudson River from near the mouth of the Kinderhook Creek in Columbia County, north to Troy, and also in the Champlain Canal in Washington Co. The species also occurs on the Delaware River Curiously this species was found to occupy only 1 of 7 historically-known counties, while surveys during NYDDS located the species in four new counties in the Capital district region (White *et al*., 2010).

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	Few hundred miles

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. Small to medium River; Low-Moderate Gradient, sand/gravel bottom

b. Large River; Low Gradient

c. Large River; Low-Moderate Gradient

Habitat or Community Type Trend in New York

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

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:

Lotic. Populations are found in the larger rivers such as the Delaware and the mid-Hudson. Eggs are laid outside of plant tissues in rapids and the downstream ends of pools, and development of larvae in interstices of the benthic cobbles where the eggs would be carried when laid. Exuviae can sometimes be found on bridge abutments. Larvae have been collected from beneath stones under boulders in water ½ to 1 meter deep in riffles at the head of spring-fed pools.

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):*

Very little known, an essentially unstudied species. As with all *Neurocordulia*, this is a crepuscular species that flies for about 45 minutes after sundown in late May to early July in New York. Daylight hours probably spent at rest in the understory of surrounding forests.

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	7.2.1 Water level management using dams (alterations of riverine systems)	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	9.3 Agricultural & Forestry Effluents	9.3.3 Herbicides & pesticides (runoff, pesticides)	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.

Table 1. Threats to *Neurocordulia obsolete.*

Because the entire NYS population occurs on only a small segment of the Delaware River and Hudson Rivers any activities which degrade the sensitive hydrology of these habitats would threaten this species. The most important likely negative impacts would come from changes in the natural hydrology such as water removals (from hydrofracking), the building of dams (Donnelly, 1993), increases in the sediment load or associated stream (such as might result should logging occur down to the stream edge), changes in dissolved oxygen content, direct effects of pesticides, and chemical contamination by runoff of agricultural or other discharge (Novak 2006).

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

Yes: ü **No:** _____ **Unknown:** _____

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

Article 15 of Environmental Conservation Law provides protection of rivers, streams, lakes and ponds through the Protection of Waters permit program. This is not 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 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).

Given the apparent range expansion suggested by the increasing number of recent records, monitoring of some subset of sites in the face of climate change may shed light on whether this is a threat to the species or a possible factor involved in the range change.

Action Category	Action	Description
B.3 Outreach	B.3.1.4.0 Public outreach and information	Awareness & Communications
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	
C.9 Education and Training	C.9.2.0.0 Training and individual skill development	Training

Table 2. Recommended conservation actions for *Neurocordulia obsolete.*

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

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). Maintain existing populations and, if needed and possible, establish or restore additional populations, to ensure the long-term persistence of these species in New York State.

VII. References

Brunelle, P.-M. and P. G. deMaynadier. 2005. The Maine damselfly and dragonfly survey. A final report. A report prepared for Maine Department of Inland Fisheries and Wildlife(MDIFW).

Donnelly, T. W. (1993). Impoundment of rivers: sediment regime and its effect on benthos. *Aquatic Conservation: Marine and Freshwater Ecosystems*, *3*(4), 331-342.

Hunt, P.D. 2012. The New Hampshire Dragonfly survey: a final report. New Hampshire Audubon, Concord.

NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. <http://www.natureserve.org/explorer>. Accessed 23 Octobber 2013.

New York State Department of Environmental Conservation. (2006). *New York State Comprehensive Wildlife Conservation Strategy*. Albany, NY: New York State Department of Environmental Conservation.

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.

White, E.L., J.D. Corser, P.D. Hunt, P. DeMaynadier, and M.D. Schleshinger (in prep). A conservation assessment of Odonata for the northeastern United States. Freshwater Science.

Corser,D. Jeffrey. 2013. *Neurocordulia obsoleta* Status Assessment for the 2015 New York State Wildlife Action Plan. NYSDEC. Albany, New York.

NatureServe. 2025. NatureServe Explorer. Page last published 2/28/25. https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.107945/Neurocordulia_obsoleta. Accessed April 1, 2025.

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