Species Status Assessment

Common Name: Four-spotted pennant **Date Updated:** 2025-01-14

Scientific Name: *Brachymesia gravida* **Updated By:** Erin L. White

Class: Insecta

Family: Libellulidae

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

E. White copied info from 2015 SSA below and reviewed information for accuracy, checking OdonataCentral and iNaturalist for new records since 2012 and there were none.

This species was discovered as a new member of New York's odonate fauna in 2008 during the NYDDS (White *et al*., 2010) and has since been located nearby the initial locale in 2012. It is only known from three pond sites in eastern Suffolk County on the eastern tip of Long Island. This forms the extreme northeastern range boundary of this subtropical species.

I. Status

a. Current legal protected Status

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

ii. **New York:** Unprotected

b. Natural Heritage Program

i. **Global:** G5

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

Other Ranks:

-NYS 2025 SGCN Status: High Priority Species of Greatest Conservation Need

-IUCN Red List: Least Concern in 2016

-Northeast Regional Rank (White et al.2015): R4 vulnerability and Shared responsibility

Status Discussion:

This is a newly documented species in New York, discovered at just three locales in the state during NYDDS and shortly thereafter (White *et al.* 2010). At one of the locales, dragonflies have been observed on several different occasions, at the second site, they have been seen just once. This species ranges quite abundantly throughout the Gulf and Atlantic Coastal Plain.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Unknown	Unknown			-
Northeastern US	Yes	Unknown	Unknown		R4	No
New York	Yes	Unknown	Increasing			Yes
Connecticut	No	-	-			No
Massachusetts	No	-	-			No
New Jersey	Yes	-	-		SNR	No
Pennsylvania	No	-	-			No
Vermont	No	-	-			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 (NYDDS) 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):*

Recent survey efforts have expanded the known range of this species northeastward to New Jersey and New York. This probably indicates a recent range expansion, but could also simply be due to increased attention by Odonatologists.

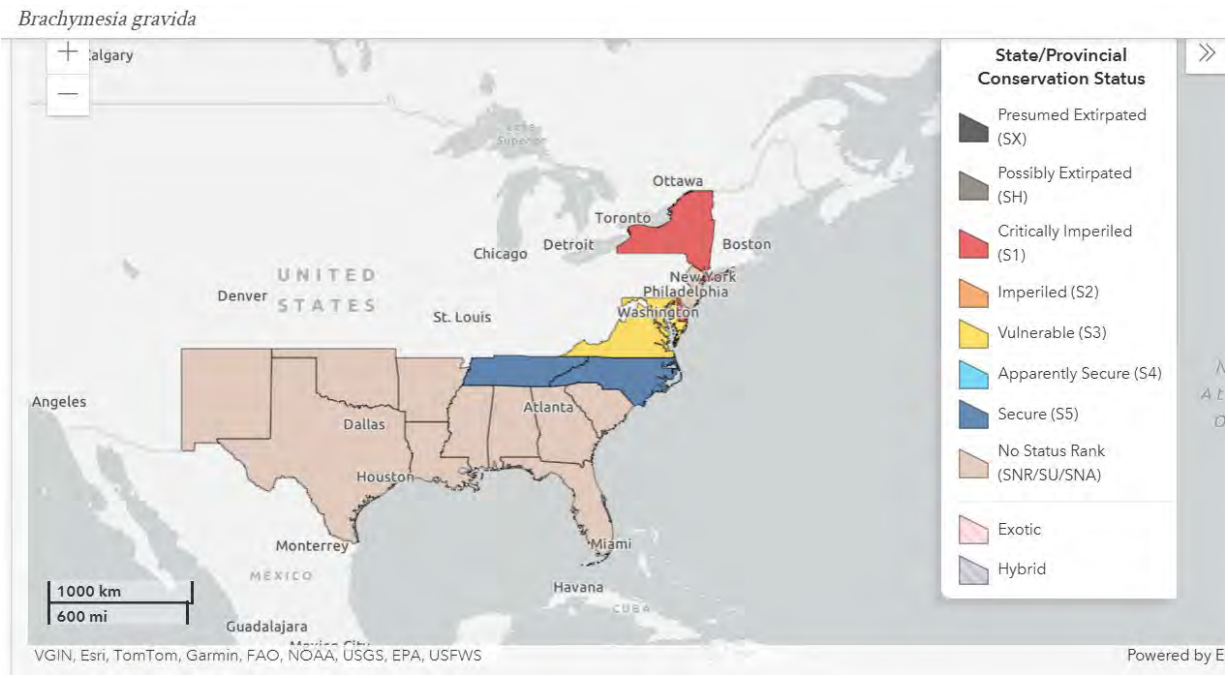

Figure 1. Four-spotted Pennant distribution (NatureServe 2025)

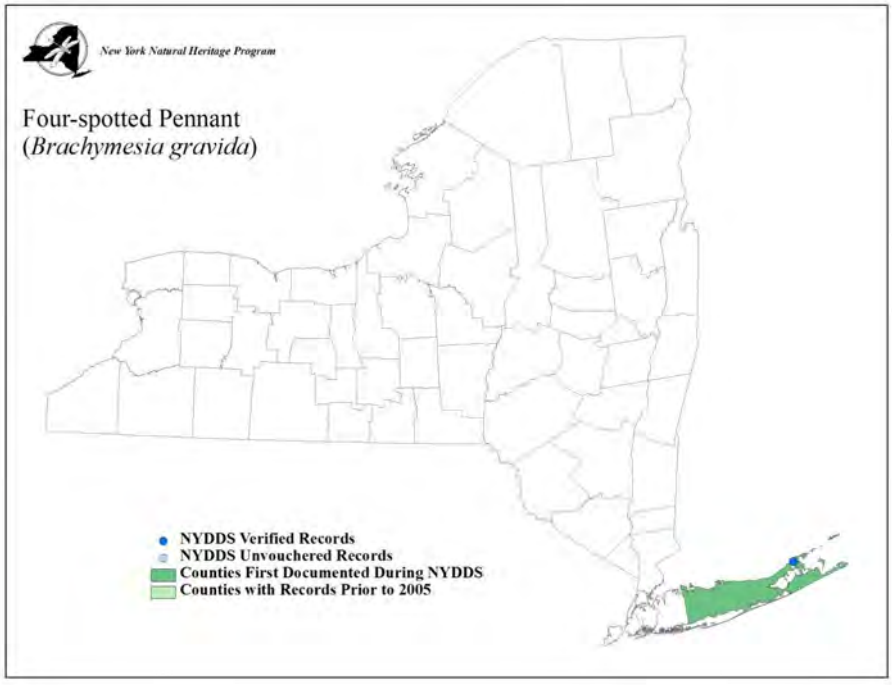

Figure 2. Occurrence records of the Four-spotted pennant in New York (White *et al.* 2010).

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

Years	# of Records	# of Counties	% of State
Pre-2004	0	0	0
2005-2009	1	1	1.6
2010-2023	3	1	1.6

Table 1. Records of (species) in New York.

Details of historic and current occurrence:

This species was newly discovered in New York on a pond in Skipper Horton Park in Suffolk Co. in 2008 (White *et al.*, 2010), and also in 2012 at two more nearby ponds. No additional site records have surfaced since then.

More than a dozen individuals have been observed in the state at three different locales. Breeding and oviposition behaviors have been observed.

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):*

1. Coastal Plain Pond
2. Lacustrine, warm water shallow, mud bottom
3. Lacustrine, warm water shallow, sand/gravel bottom

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Choose an item.	

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:

Inlet Pond is a pond on a beach along the northern shore of the North Fork of Long Island. There is a trail system from North Fork Audubon Center leading to the pond. Skipper Horton Pond is a permanent to semi-permanent artificial pond near a busy road, bordered by mowed lawn and cattails. Sill Pond is a

deep pond with a wooded and shrubby border and containing fish and pickerel weed. This species tolerates degraded water, including brackish and over-fertilized waters (Dunkle 2000).

V. Species Demographic, and Life History:

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

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):*

Four-spotted Pennants forage from tips of twigs and tall weeds. They participate in feeding swarms both early and late in the day (Dunkle, 2000). Their primary flight season in New York is July and early August (White et al. 2010).

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

Little published information is available citing specific cases of negative impacts to pond odonates, but any activities which degrade the sensitive hydrology of these habitats would threaten populations of these species. Examples include peat mining, ditching, filling, eutrophication and changes in dissolved oxygen content, direct effects of pesticides (e.g. for mosquito control or from agricultural runoff), and increases in the sediment load of the wetland (such as might result should logging occur down to the wetland edge). Natural succession could also threaten some sites as shallow pools fill in with vegetation over time (Novak 2006).

SCOPE: Spatial proportion of the distribution that is expected to be affected in the next 10 years (**narrow**= 1-10%; **restricted**=11-30%; **widespread**=31-70%; **pervasive**= 71-100%).

SEVERITY: The degree of population reduction in the next 10 years that can be reasonably expected from the threat given the current circumstances and trends (**low**=degrade/reduce population by 1-10%; **medium**=d/r population by 11-30%; **high**=d/r population by 30-70%; **very high**=d/r population by 71-100%).

IRREVERSIBILITY: The degree to which the effects can be reduced and the species restored (**low**=easily reversed, at a low cost, and/or within 0-5 years; **medium**=can be reversed with a reasonable commitment of resources and/or within 6-20 years; **high**=can technically be reversed, but not practicably affordable and/or it would take 21-100 years; **very high**=cannot be reversed and species not likely to be restore and/or it would take >100 years).

Threats to NY Populations				
Threat Category	**Threat**	**Scope**	**Severity**	**Irreversibility**
1. Natural Systems Modifications	Dams & Water Management/Use (alteration of natural hydrology)	W	M	M
2. Residential & Commercial Development	Housing & Urban Areas (habitat loss)	P	M	H
3. Pollution	Agricultural & Forestry Effluents (runoff, pesticides)	R	L	M
4. Pollution	Household Sewage & Urban Wastewater (poor water quality)	P	L	L

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 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.

Conservation actions following IUCN taxonomy are categorized in the table.

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

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.

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Resource and habitat protection
2. Land/Water Protection	Site/area protection
3. Land/water management	Site/area management
4. Land/water management	Habitat & natural process restoration
5. Land/water management	Invasives/problematic species control
3. Education and Awareness	Awareness & Communications
3. Education and Awareness	Training
4. Law and Policy	Policies and Regulations

Table 3. Recommended conservation actions for (species)

VII. References

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