Species Status Assessment

Common Name:	Martha's Pennant	**Date Updated:**	2024-08-13
Scientific Name:	*Celithemis martha*	**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):

Martha's Pennant have been documented in the northeastern United States from Virginia northward to Maine and in Canada in New Brunswick and Nova Scotia (NatureServe 2024).

Known habitat for Martha's Pennant includes vegetated ponds and lakes, including coastal plain ponds (Nikula et al. 2003, White et al. 2010).

Based on new information since 2005 from the NYDDS, Odonata Central and iNaturalist, the species likely occurs in three counties in southern NY and Long Island (Abbott 2024, iNaturalist 2024, White et al. 2010). Once records from iNaturalist can be confirmed, the rank of S2 should be reviewed, though is also likely to remain an S2 given the range restriction in the state, and the trend is likely stable over time.

I. Status

a. Current legal protected Status

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

ii. New York: Not Listed Unprotected

b. Natural Heritage Program

i. Global: G4

ii. New York: S2 **Tracked by NYNHP?** On Active Tracking List

Other Ranks:

NYS 2025 SGCN Status: Species of Greatest Conservation Need

COSEWIC: Not listed in Canada
IUCN Red List: Least Concern
Northeast Regional SGCN: Watchlist [Assessment Priority]; R3 Vulnerability and Primary Responsibility

Status Discussion:

Based on new information since 2005 from the NYDDS, Odonata Central and iNaturalist, the species likely occurs in three counties in southern NY and Long Island (Abbott 2024, iNaturalist 2024, White et al. 2010). Once records from iNaturalist can be confirmed, the rank of S2 should be reviewed, though is also likely to remain an S2 given the range restriction in the state.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status or S-Rank	SGCN?
North America	Yes	Unknown	Unknown	Unknown		
Northeastern US	Yes	Unknown	Unknown	Unknown	R3; Primary	Watchlist [Assessment Priority]
New York	Yes	Unknown	Unknown	Unknown	S2	No
Connecticut	Yes	Unknown	Unknown	Unknown	S2S3	Yes
Massachusetts	Yes	Unknown	Unknown	Unknown	S3S4	
New Jersey	Yes	Unknown	Unknown	Unknown	SNR	Yes
Pennsylvania	Yes	Unknown	Unknown	Unknown	SH	Yes
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 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 trend is likely stable for NY (Abbott 2024, iNaturalist 2024, White et al. 2010). Over time, it does not appear to be expanding in range northward in the state and the known distribution is fairly restricted in NY to southern NY and Long Island.

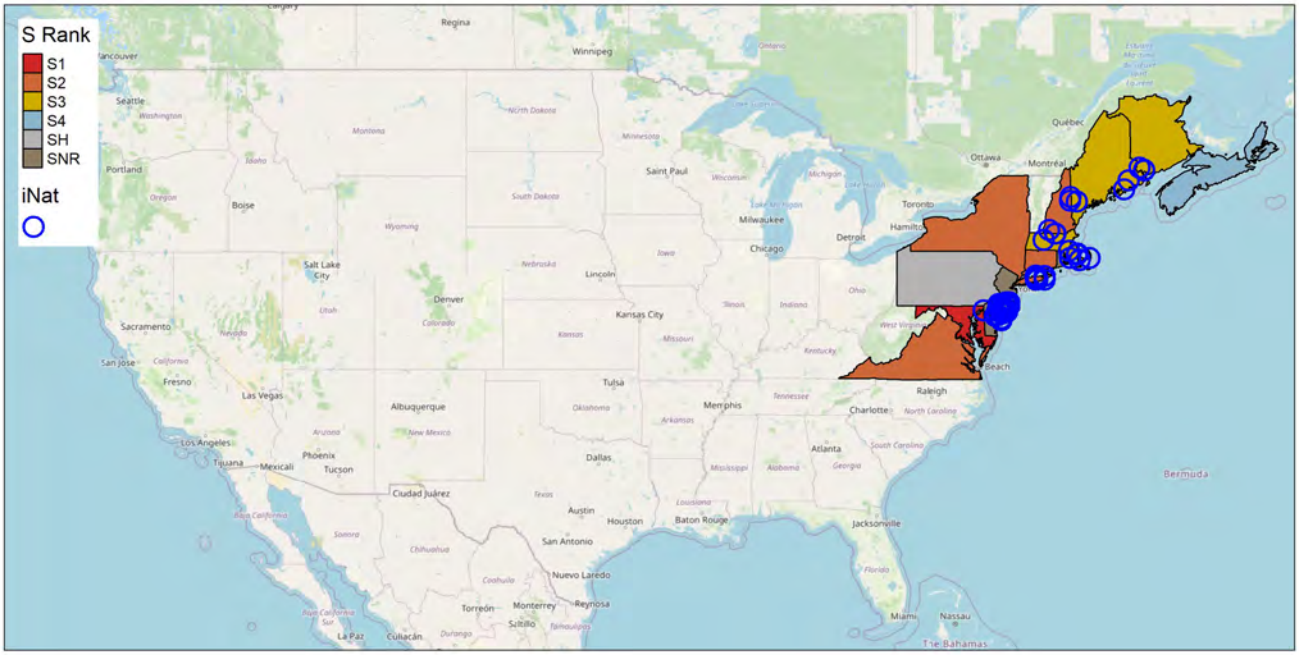

Figure 1: *Celithemis martha North American distribution. Points show research-grade iNaturalist observations.*

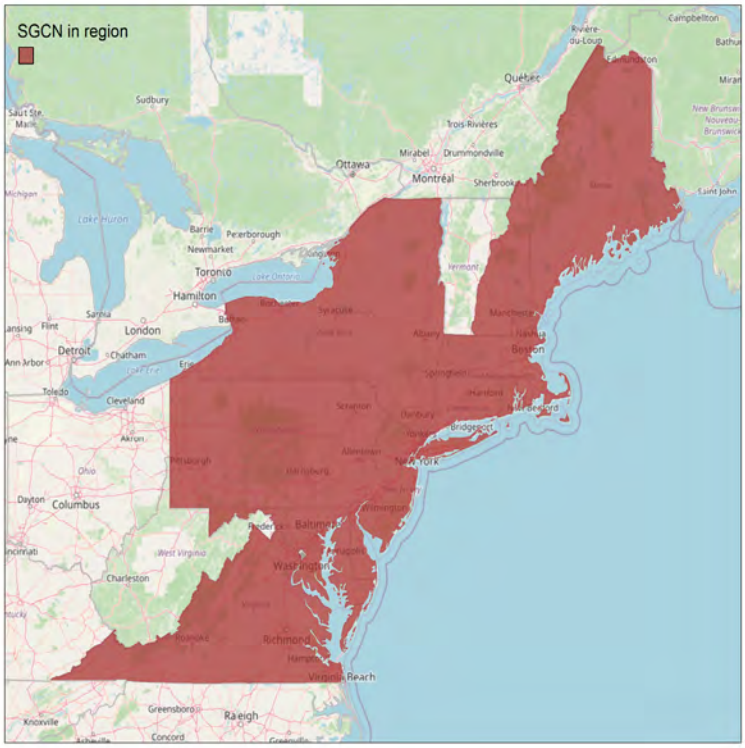

Figure 2: *Celithemis martha regional distribution as reported at https://northeastwildlifediversity.org/rsgcn and found in a regional odonate project.*

III. New York Rarity

(provide map, numbers, and percent of state occupied)

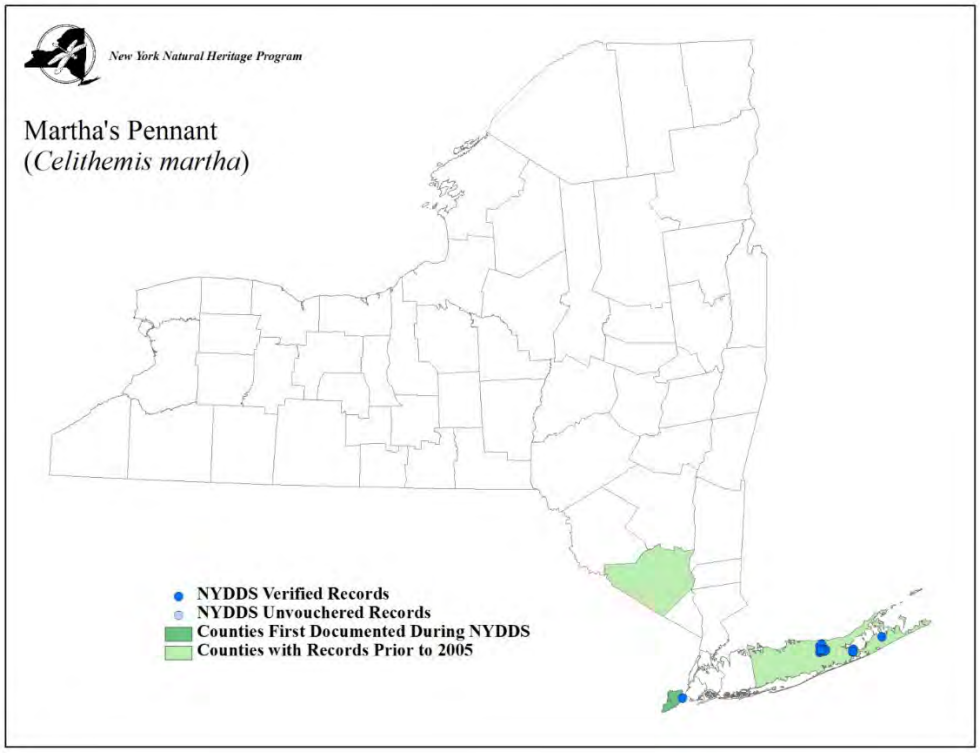

Figure 3: *NYS distribution for Celithemis martha based on NYDDS (White et al. 2010).*

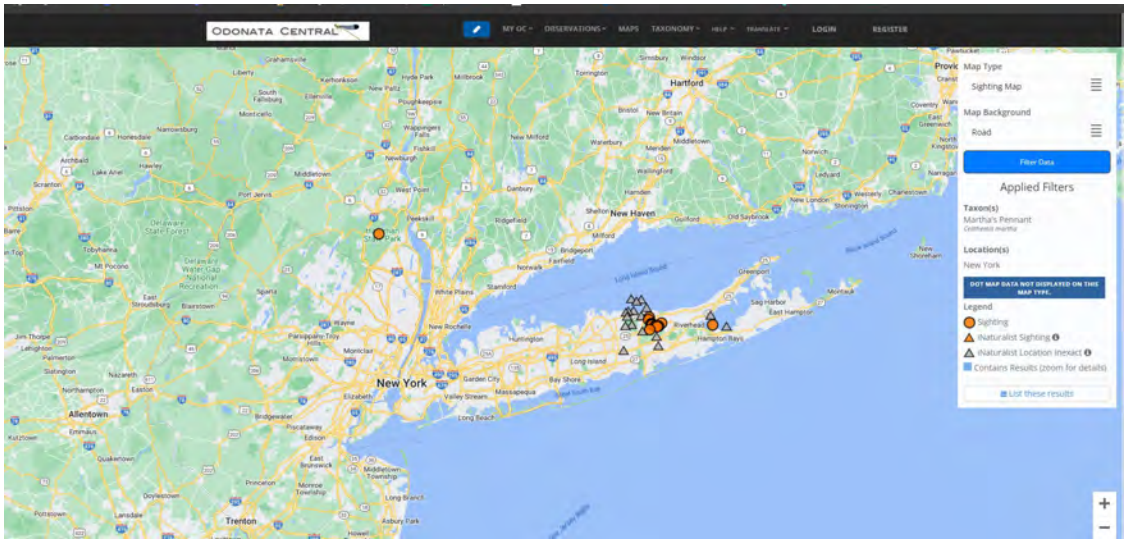

Figure 4: *NYS distribution for Celithemis martha based on OdonataCentral (includes iNaturalist locations (Abbott 2024).*

Table 1. Number of observations of *Celithemis martha* grouped by the dates known to be extant (repeat observations (element occurrences) include the years spanning first observation to last observation) and the number and percent of total of counties these observations fall within for New York State.

Years	Observations	# of Counties	% of counties in State
pre-2005	8	3	4.8
2005-2009	16	2	3.2
2010-present	2-69	3	4.8

Details of historic and current occurrence:

Pre-2005, the species was known from Orange, Richmond and Suffolk Counties. During the NYDDS (2005-2009), there were 16 locations where the species was confirmed in Richmond and Suffolk Counties. Since 2010, observations have been vetted in Orange and Suffolk Counties (Abbott 2024). There are an additional 67 observations from iNaturalist in need of confirmation from Rockland and Suffolk Counties (iNaturalist 2024).These should be reviewed as this species could easily be mistaken for a few common species, though given the observers and ease of ID, they will likely be confirmed. The number of unique element occurrences needs to be investigated.

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

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):

Ponds and coastal plain ponds including:

Warm to cool, Eutrophic, circumneutral

Warm to cool, Eutrophic, acidic

Warm to cool, Oligo-mesotrophic, circumneutral

Warm to cool, Oligo-mesotrophic, acidic

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/ Increase
Unknown	Unknown	Unknown	Unknown

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

Habitat Discussion:

Known habitat for Martha's Pennant includes vegetated ponds and lakes, including coastal plain ponds (Nikula et al. 2003, White et al. 2010).

IUCN habitat description: Celithemis martha occurs at sand-bottomed lakes and ponds with emergent vegetation along shore, typically on sandy coastal-plain soils. Also nutrient-poor glacial lakes on New Jersey ridges. Larvae live among aquatic vegetation.

V. Species Demographics and Life History

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Yes	No	Yes	Yes	No

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):

In New York, the species has been observed from early June through early September (White et al. 2010).

VI. Threats

Threat Level 1	Threat Level 2	Threat Level 3	Spatial Extent	Severity	Immediacy	Trend	Certainty
7. Natural System Modifications	7.2 Dams & Water Management/Use	-	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
8. Invasive & Other Problematic Species	8.1 Invasive Non-Native Plants & Animals	8.1.3 Aquatic animals (grass carp)	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	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.

Table 2. Threats to *Celithemis martha*.

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:

The Freshwater Wetlands Act provides protection for wetlands greater than 12.4 acres in size under Article 24 of the NYS Conservation Law. Possibly take out – not in brackish waters and I don't think any occurrences fall into tidal areas. This only covers a portion of habitat used by this species and does not protect the habitat, nor the species, enough.

This species' coastal plain pond habitat on Long Island is threatened by the introduction of grass carp, alterations to hydrology and water quality, as well as herbicides used to clear aquatic weeds from ponds. The most significant threat to their hydrology comes from commercial and residential development causing increases in the demand for fresh water. This results in drawdowns of the water table, altering the hydroperiod and generally diminishing the pond extent (NYNHP 2024). Upstate, the threats to this species' eutrophic pond habitat appear to be slight, especially because it seems to occupy a variety of different types of ponds.

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

The most important management concern for coastal plain pond habitats is the maintenance of a natural hydrologic regime and good water quality. Water supplies for new development and ditching, draining or impoundment activities should be weighed carefully. Storm water run-off, herbicide and pesticide use should also be minimized or eliminated in the vicinity of ponds. Where practical, wide (> 100') vegetated buffers should be managed to reduce storm-water, pollution, sediment and nutrient run-off and provide shading and roosting sites. Habitat alteration within the wetland and surrounding landscape should be minimized (NYNHP 2024).

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for odonates of lakes and ponds, and for comet darner 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.

Life history research:

____ In some locations, the comet darner is thought to be either episodic or migratory with many of the sight records being from locations that do not support actual populations where the larvae over winter. However, it is clearly resident in at least one location in Albany County where over-wintering larvae have been documented. Surveys for this species need to take this situation into account and incorporate larval sampling. This will add to our knowledge of the life history of this species.

New regulation:

____ Recommendations for official state endangered, threatened, and special concern listing are an anticipated result of the statewide inventory. It is expected that one or more of these species may be recommended for listing and officially adding these species to the list would constitute a specific action.

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.

Table 3. Recommended conservation actions for *Celithemis martha*.

Action Category	Action
Land/water protection	1.1. Site/area protection
Land/water protection	1.2. Resource & habitat protection
Land/water management	2.1. Site/area management
Land/water management	2.2. Invasive/problematic species control
Land/water management	2.3. Habitat & natural process restoration
Education & awareness	4.2. Training
Education & awareness	4.3. Awareness & communications
Law & policy	5.2. Policies and regulations

VII. References

This SSA drew heavily from these resources:

New York Natural Heritage Program, State University of New York College of Environmental Science and Forestry. 2023. Element Occurrence and Element Dataset. Albany, New York. [Exported 12/14/2023].

NatureServe. 2023. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. http://www.natureserve.org/explorer. [Accessed 12/14/2023].

Additional references:

Abbott, J.C. 2006-2024. OdonataCentral: An online resource for the distribution and identification of Odonata. Available at https://www.odonatacentral.org/. (Accessed: 8/8/2024).

Donnelly, T. W. 1992. The odonata of New York State. Bulletin of American Odonatology. 1(1):1-27.

iNaturalist. Available from https://www.inaturalist.org. Accessed August 8, 2024.

IUCN 2024. IUCN Red List of Threatened Species. Version 2023.1. <.www.iucnredlist.org>. Accessed 8 August 2024.

Lam, E. 2004. Damselflies of the northeast: A guide to the species of eastern Canada and the northeastern United States. Biodiversity books, Forest Hills, New York. 96 pp.

New York State Department of Environmental Conservation. (2005). *New York State Comprehensive Wildlife Conservation Strategy*. Albany, NY: New York State Department of Environmental Conservation.

Nikula, B., J. Loose, and M. Burne. 2003. A field guide to the dragonflies and damselflies of Massachusetts. Massachusetts Division of Fisheries and Wildlife, Natural Heritage and Endangered Species Program.

Northeast Fish and Wildlife Diversity. 2024. Regional Species of Greatest Conservation Need (2024). https://northeastwildlifediversity.org/rsgcn. Accessed August 8, 2024.

Olivero, A.P. and M.G. Anderson. 2008. Northeast Aquatic Habitat Classification. The Nature Conservancy Eastern Resource Office, Boston, MA.

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. 2015. Prioritizing Odonata for conservation action in the northeastern USA. Freshwater Science (34): 1079-1093.

Originally prepared by	Erin L. White
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