

Species Status Assessment

Common Name: Orange-legged Ant Fly **Date Updated:** 2024-10-10
Scientific Name: *Microdon cothurnatus* **Updated By:** Erin L. White
Class: Insecta
Family: Syrphidae

Species Synopsis

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

Orange-legged Ant Fly ranges from British Columbia to Oregon in the west and Pennsylvania to Newfoundland in the east (Skevington et al. 2019, NatureServe 2024). Besides NY, there are recent records from Quebec and the Canadian Maritimes (NatureServe 2024).

The species was ranked an S1 (White et al. 2022) based on rarity, trend, and threat information. The species was recently documented in Columbia County (White et al. 2022) and is historically known from Orange and Tompkins Counties. This may suggest a decline in NY, but they are also likely poorly sampled as adults do not visit flowers. However, statewide passive trapping and active netting in natural habitats during the ESNPS revealed a single location and it is expected to remain rare.

Adults are known from mixed woods, spruce woods, and blueberry fields. Larvae are predators of ant eggs and larvae of the following ant species: *Camponotus novaeboracensis*, *C. pennsylvanicus*, *C. ?vicinus*, *Formica accreta*, *F. adamsi whympersi*, *F. aserva*, *F. neoclara*, *F. obscuripes*, *F. obscuriventris*, *F. podzolica*, and *F. ravida* (Skevington et al. 2019).

I. Status

a. Current legal protected Status

i. **Federal:** Not Listed **Candidate:** No
ii. **New York:** Unprotected

b. Natural Heritage Program

i. **Global:** G4G5
ii. **New York:** S1 **Tracked by NYNHP?** On Active Tracking List

Other Ranks:

- New York 2025 SGCN status: High Priority Species of Greatest Conservation Need
- COSEWIC: Not listed in Canada
- IUCN Red List: Not assessed by IUCN Red List
- Northeast Regional SGCN: Not listed

Status Discussion:

The species was ranked an S1 (White et al. 2022) based on rarity, trend, and threat information. The species was recently documented in Columbia County (White et al. 2022) and is historically known from Orange and Tompkins Counties. This may suggest a decline in NY, but they are also likely poorly sampled as adults do not visit flowers. However, statewide passive trapping and active netting in natural habitats during the ESNPS revealed a single location and it is expected to remain rare.

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		No
New York	Yes	Unknown	Unknown	Unknown	S1	No
Connecticut	No	Unknown	Unknown	Unknown	SNR	
Massachusetts	No	Unknown	Unknown	Unknown	SNR	
New Jersey	No	-	-	-		
Pennsylvania	No	Unknown	Unknown	Unknown	SNR	
Vermont	No	-	-	-		
Ontario	No	Unknown	Unknown	Unknown	S3	
Quebec	No	Unknown	Unknown	Unknown	SNR	

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):

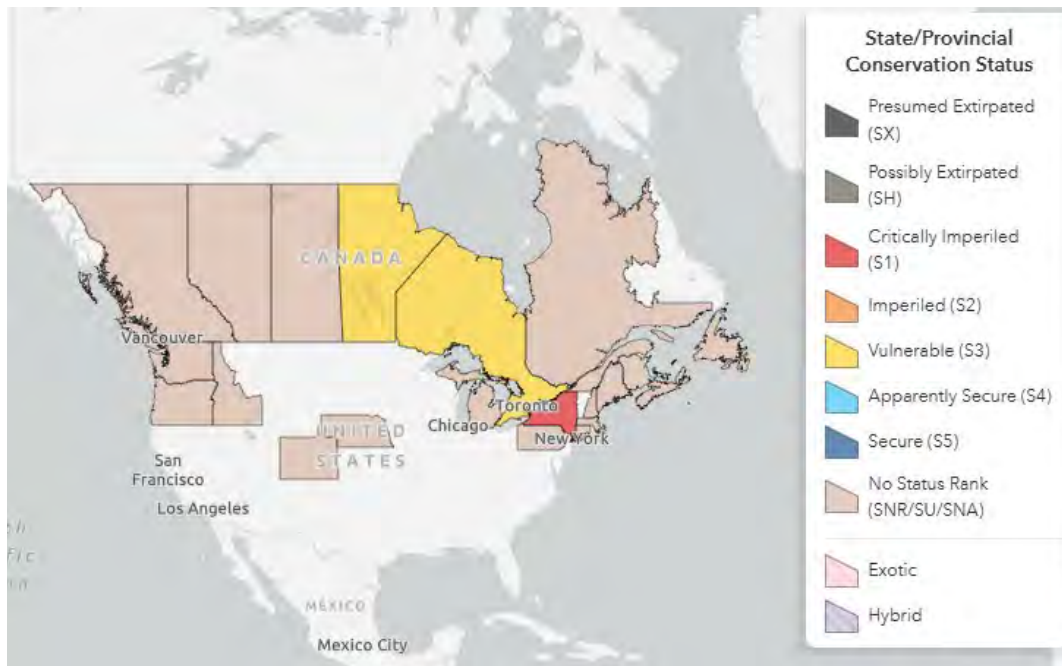


Figure 2. Conservation status of *Microdon cothurnatus* (NatureServe 2024).

III. New York Rarity

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

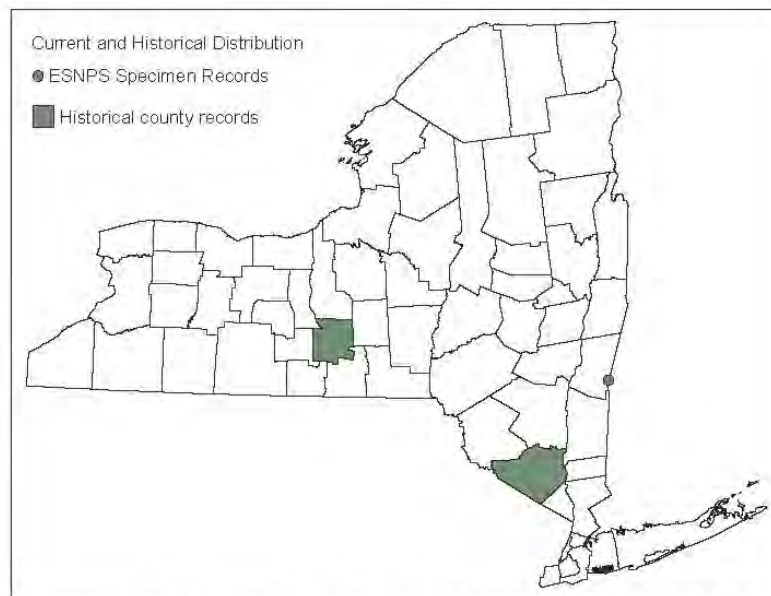


Figure 1: Observations from 2000 to present depicted as dots; those from 1999 and earlier as shaded counties.

Figure 3. NYS distribution for *Microdon cothurnatus* based on ESNPS data (White et al. 2022).

Table 1. Number of observations of *Microdon cothurnatus* 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-2000	3	2	3.2
2000-2023	2	1	1.6

Details of historic and current occurrence:

The species was documented with two specimens from Columbia County in July of 2018 (White et al. 2022).

Historically, 1999 and earlier, the species is known from Orange and Tompkins Counties.

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	~1600

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):

Mixed Northern Hardwoods near Oak-Pine Forest

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:

Adults are known from mixed woods, spruce woods, and blueberry fields. Larvae are predators of ant eggs and larvae of the following ant species: *Camponotus novaeboracensis*, *C. pennsylvanicus*, *C. ?vicinus*, *Formica accreta*, *F. adamsi whympersi*, *F. aserva*, *F. neoclara*, *F. obscuripes*, *F. obscuriventris*, *F. podzolica*, and *F. ravida* (Skevington et al. 2019).

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):

Adult flight is from late May to late July and the NY records are from late June to early July (Skevington et al. 2019, White et al. 2022).

VI. Threats

Threats facing ant-eating hover flies include habitat loss and degradation of their ant host's habitat (Sorvari et al. 2016), pesticides, and climate change. Habitat shifting and alteration, droughts, and more frequent severe weather events due to climate change is expected to impact ants (Sorvari et al. 2016) and their predators.

Threat Level 1	Threat Level 2	Threat Level 3	Spatial Extent	Severity	Immediacy	Trend	Certainty
5. Biological Resource Use	5.3 Logging & Wood Harvesting	Choose an item.	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.
11. Climate Change	11.1 Habitat Shifting & Alteration	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
11. Climate Change	11.3 Changes in Temperature Regimes	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.

Table 2. Threats to *Microdon cothurnatus*

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. 2024. NatureServe Explorer. Page last published 11/14/24. https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.950638/Microdon_cothurnatus. Accessed November 20, 2024.

Additional references:

Gawler, S.C. 2008. Northeastern Terrestrial Wildlife Habitat Classification. NatureServe, Boston, MA.

IUCN 2024. IUCN Red List of Threatened Species. Version 2023.1. <www.iucnredlist.org>. Accessed 10 October 2024.

Miranda, G.F.G., A.D. Young, M.M. Locke, S.A. Marshall, J.H. Skevington, and F.C. Thompson. 2013. Key to the genera of nearctic Syrphidae. Canadian Journal of Arthropod Identification No. 23 (August, 2013). Available online: http://cjai.biologicalsurvey.ca/mylmst_23/mylmst_23.html

Northeast Fish and Wildlife Diversity. 2024. Regional Species of Greatest Conservation Need (2024). <https://northeastwildlifediversity.org/rsgcn>. Accessed October 10, 2024.

Skevington, J.H., M.M. Locke, A.D. Young, K. Moran, W.J. Crins, and S.A. Marshall. 2019. Field guide to the flower flies of northeastern North America. Princeton University Press.

Sorvari, J., J.A. Stockan, and E.J.H. Robinson. 2016. Wood Ant Ecology and Conservation. Cambridge University Press.

White, E.L., M. D. Schlesinger, and T.G. Howard. 2022. The Empire State Native Pollinator Survey (2017-2021). New York Natural Heritage Program, Albany, NY.

Originally prepared by	Erin L. White
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