Species Status Assessment

Common Name:	Yellow-spotted Falsehorn	**Date Updated:**	2025-03-04
Scientific Name:	*Temnostoma daochus*	**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):

Yellow-spotted Falsehorn is known from Texas north to Michigan and east to New York and Florida (NatureServe 2025, Skevington et al. 2019).

The species was ranked an S1 as part of the ESNPS (White et al. 2022) based on rarity, trend, and threat information and resides in a rare and threatened habitat type. Based on additional information since the ESNPS, it may rank as an S1S3. There is a historical record from Richmond county (White et al. 2022) and has likely always been a rare fly in the state. Since 2000, *Temnostoma daochus* have been documented in Bronx, Kings, Queens, Richmond, Nassau and Suffolk counties (iNaturalist 2025).

Species in this genus live in dead or decaying wood as larvae (Skevington et al. 2019). Due to this, the species lives in late-successional forests.

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?** On Active Tracking List

Other Ranks:

NYS 2025 SGCN Status: 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 as part of the ESNPS (White et al. 2022) based on rarity, trend, and threat information and resides in a rare and threatened habitat type. Based on additional information since the ESNPS, it may rank as an S1S3. There is a historical record from Richmond county (White et al. 2022) and has likely always been a rare fly in the state. Since 2000, *Temnostoma daochus* have been documented in Bronx, Kings, Queens, Richmond, Nassau and Suffolk counties (iNaturalist 2025).

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		
New York	Yes	Unknown	Unknown	Unknown	S1	No
Connecticut	No	-	-	-		
Massachusetts	No	-	-	-		
New Jersey	No	-	-	-		
Pennsylvania	No	Unknown	Unknown	Unknown	SNR	No
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 Empire State Native Pollinator Survey (ESNPS) was conducted from 2017-2021, but there are no organized, regular monitoring or survey activities directed toward this species or to sites where they have been documented. Some regular monitoring may occur at protected sites that Heritage staff revisit if they occur on state properties, as part of OPRHP or State Lands inventory work.

Trends Discussion

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

There is a historical record from Richmond county (White et al. 2022) and has likely always been a rare fly in the state. Since 2000, *Temnostoma daochus* have been documented in Bronx, Kings, Queens, Richmond, Nassau and Suffolk counties (iNaturalist 2025).

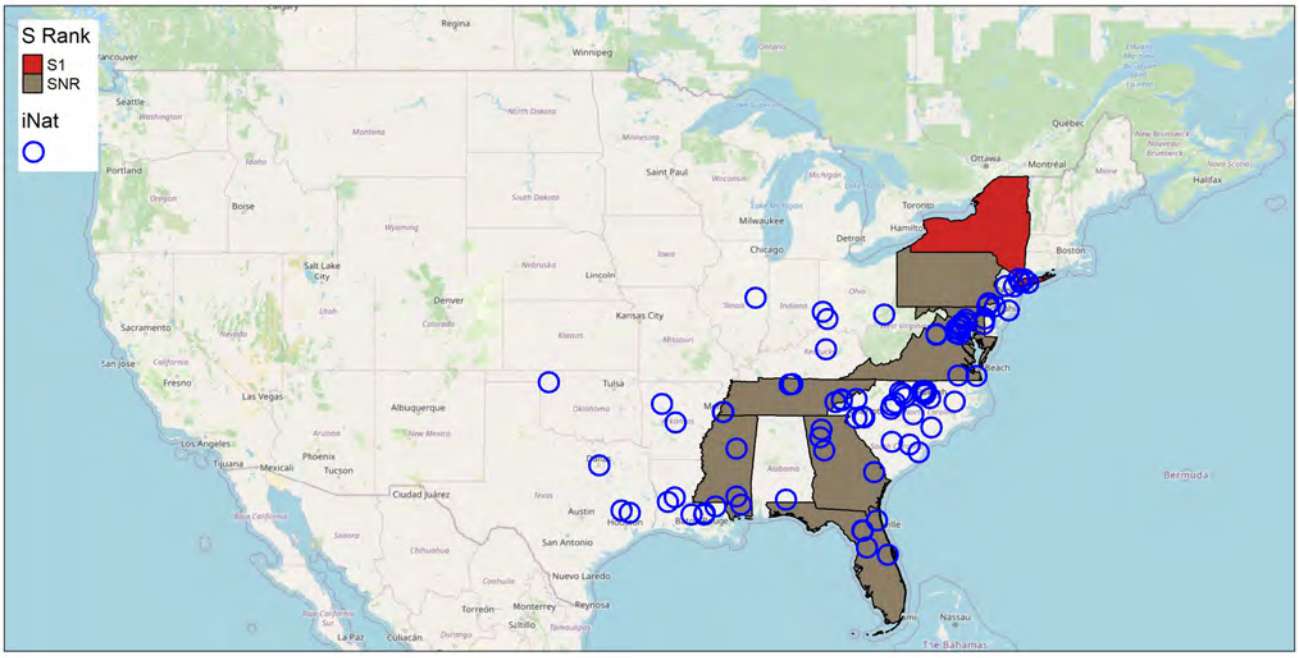

Figure 11: *Temnostoma daochus* North American distribution. Points show research-grade iNaturalist observations.

III. New York Rarity

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

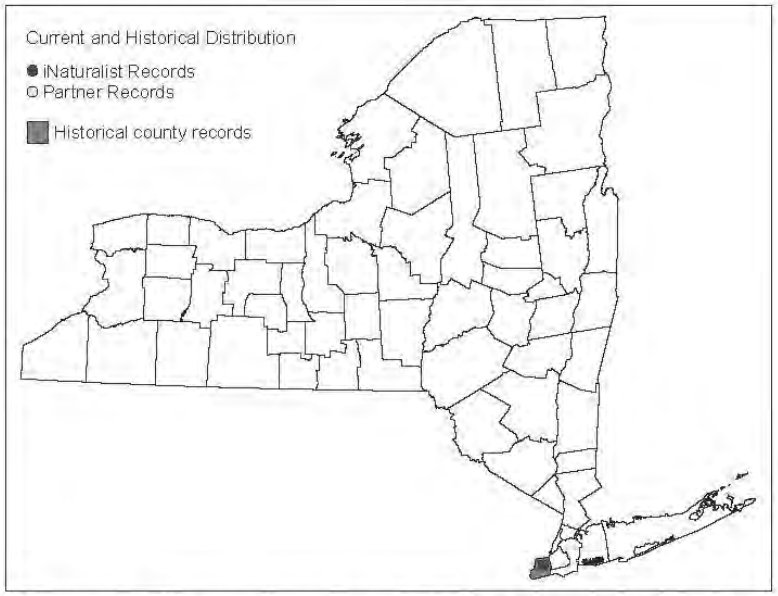

Figure 1: Observations from 2000 to present depicted as dots; those from 1999 and earlier as shaded counties.

Figure 22: NYS distribution for Temnostoma daochus based on ESNPS data (White et al. 2022).

Years	Observations	# of Counties	% of counties in State
Pre-2000	1	1	1.6
2000-2023	8-9	5	8.1

Table 1. Number of observations of *Temnostoma daochus* 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.

Details of historic and current occurrence:

There is a historical record from Richmond county (White et al. 2022). Since 2000, *Temnostoma daochus* have been documented in Bronx, Kings, Queens, Richmond, Nassau and Suffolk counties (iNaturalist 2025).

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	~1000 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):

Habitat or Community Type Trend in New York

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

Species in this genus live in dead or decaying wood as larvae (Skevington et al. 2019). Due to this, the species lives in late-successional forests.

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):

All New York records are from May and June (iNaturalist 2015), though throughout their range, *T. daochus* are observed from mid-March to late June (Skevington et al. 2019).

VI. Threats

Threats facing our focal saproxylic hover flies and beetles include habitat loss and degradation, invasive plants and pathogens, pesticides, and climate change (White et al. 2022). Habitat shifting and alteration, droughts, and more frequent severe weather events due to climate change is expected to impact saproxylic flies and beetles.

Threat Level 1	Threat Level 2	Threat Level 3	Spatial Extent	Severity	Immediacy	Trend	Certainty
1. Residential and Commercial	1.3 Tourism & Recreation Areas	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
4. Transportation & Service Corridors	4.1 Roads & Railroads	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
4. Transportation & Service Corridors	4.2 Utility & Service Lines	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
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.
8. Invasive & Other Problematic Species	8.1 Invasive Non-Native Plants & Animals	8.1.1 Terrestrial animals (wood boring insects)	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	8.1.2 Terrestrial plants	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
8. Invasive & Other Problematic Species	8.4 Pathogens	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. (ecosystem encroachment)	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
11. Climate Change	11.2 Changes in Geological Regimes	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.
11. Climate Change	11.4 Changes in Precipitation &	11.4.2 Droughts	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.

	Hydrological Regimes						
11. Climate Change	11.5 Storms & Severe Weather	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.

Table 2. Threats to *Temnostoma daochus.*

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:

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

Suggested actions for habitat management should include maintaining standing old trees and course woody debris on the ground as breeding and larval sites. Maintaining a spring ephemeral understory (Skevington et al. 2019) will benefit adults of this species. Limiting exposure of Yellow-spotted Falsehorn to insecticides would also benefit them. Suggested actions include avoidance of application to flowers that flies are attracted to and application of solutions or soluble powders (rather than dusts or wettable powders) to the ground in calm wind and warmer temperatures during periods of dewless nights to minimize the impact to resident native pollinator populations (Schweitzer et al. 2012).

Action Category	Action	Description
A.1 Direct Habitat Management	A.1.0.0.0 Direct habitat management	Site/Area management
A.1 Direct Habitat Management	A.1.1.0.0 Manage plants, animals, fungi, or bacteria	Invasive/Problematic species control
B.3 Outreach	B.3.1.4.0 Public outreach and information	Awareness & Communications
C.6 Design and Plan Conservation	C.6.5.0.0 Conservation planning	Site/Area Protection
C.6 Design and Plan Conservation	C.6.5.0.0 Conservation planning	Resource/Habitat Protection
C.6 Design and Plan Conservation	C.6.5.1.3 Develop a conservation, management, or restoration plan for protected private lands	Habitat/Natural process restoration
C.7 Legislative and Regulatory Framework or Tools	C.7.1.3.0 Create, amend, or influence regulation	

Action Category	Action	Description
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 3. Recommended conservation actions for *Temnostoma daochus*.

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:

iNaturalist. Available from https://www.inaturalist.org. Accessed March 5, 2024.

Meeus, I., M. J. F. Brown, D. C. De Graaf, and G. Smagghe. 2011. Effects of invasive parasites on bumble bee declines. Conservation Biology 25(4):662–671.

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

Schweitzer, D.F., N.A. Capuano, B.E. Young and S.R. Colla. 2012. Conservation and management of North American bumble bees. NatureServe, Arlington, Virginia, and USDA Forest Service, Washington, D.C. 17 pp.

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