Species Status Assessment

Common Name:	Two-spotted Leafwalker	**Date Updated:**	2025-03-15
Scientific Name:	*Xylota angustiventris*	**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):

Two-spotted Leafwalker is known from Kansas eastward in the US as well as Ontario, Nova Scotia and Quebec in Canada (NatureServe 2025).

The species was ranked an S1 as part of the ESNPS (White et al. 2022) based on rarity, trend, and threat information. Historically (1999 and earlier), the species is known from NYC, Long Island, Orange, and Albany counties. Since 2000, it has been observed in Jefferson and Ulster counties (White et al. 2022), suggesting a possible decline despite increased survey effort.

Xylota are forest-dwelling and larvae are saproxylic, feeding on dead sap. This species presumably lives in late-successional forests, and have been found on the edge of mixed woods and shrubby meadows (Skevington et al. 2019). In NY, they have been found in Mixed Hardwood Swamp and Mixed Northern Hardwood habitat (White et al. 2022, Gawler 2008).

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?** On Active Tracking List

Other Ranks:

NYS 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 as part of the ESNPS (White et al. 2022) based on rarity, trend, and threat information. Historically (1999 and earlier), the species is known from NYC, Long Island, Orange, and Albany counties. Since 2000, it has been observed in Jefferson and Ulster counties (White et al. 2022), suggesting a possible decline despite increased survey effort.

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	Yes	Unknown	Unknown	Unknown	SNR	No
Massachusetts	Yes	Unknown	Unknown	Unknown	SNR	No
New Jersey	Yes	Unknown	Unknown	Unknown	SNR	No
Pennsylvania	Yes	Unknown	Unknown	Unknown	SNR	No
Vermont	No	-	-	-		
Ontario	Yes	Unknown	Unknown	Unknown	S4	
Quebec	Yes	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):

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):

Historically (1999 and earlier), the species is known from NYC, Long Island, Orange, and Albany counties. Since 2000, it has been observed in Jefferson and Ulster counties (White et al. 2022), suggesting a possible decline despite increased survey effort.

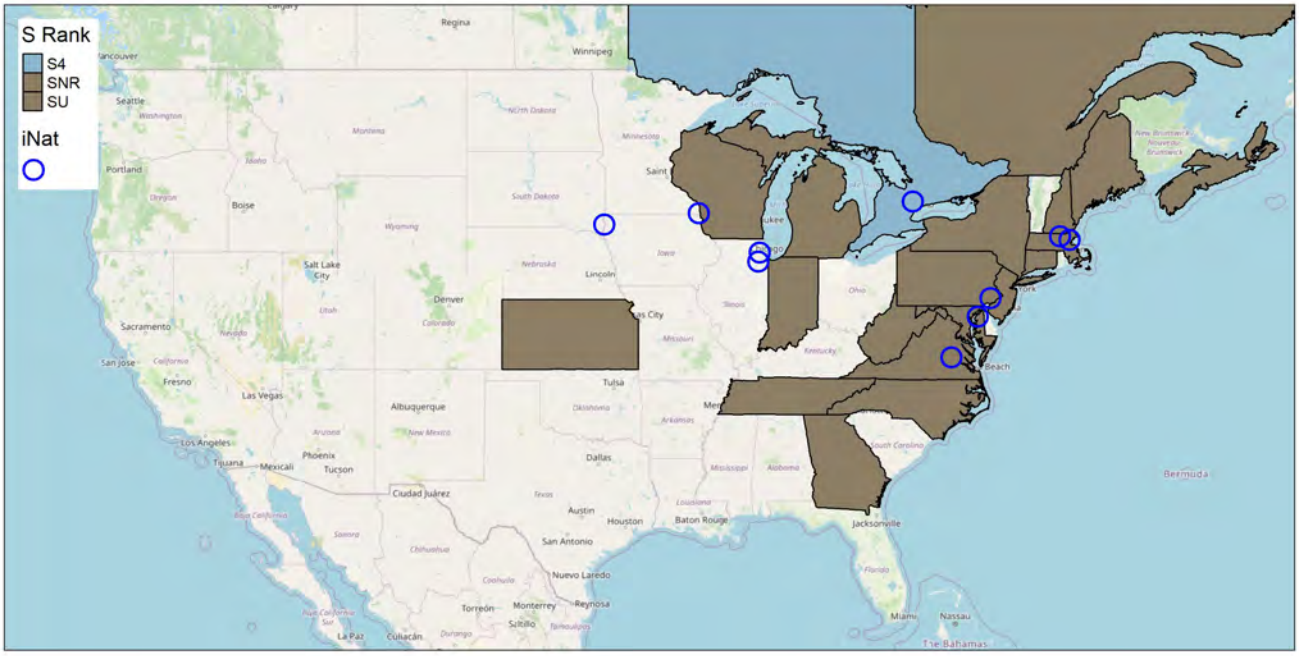

Figure 1: *Xylota angustiventris* North American distribution. Points show research-grade iNaturalist observations.

III. New York Rarity

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

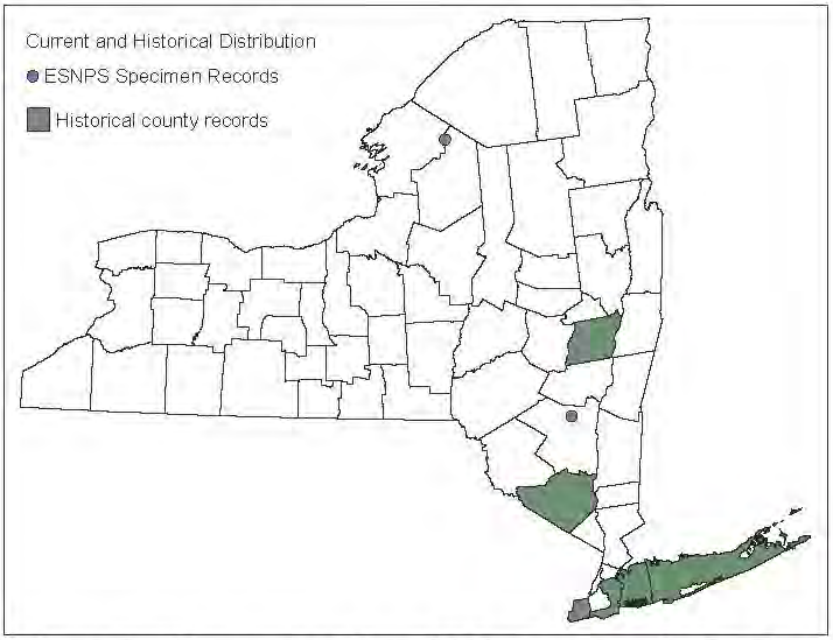

Figure 1: Observations from 2000 to present depicted as dots; those from 1999 and earlier as shaded counties.

Figure 2: NYS distribution for *Xylota angustiventris* based on ESNPS data (White et al. 2022).

Years	Observations	# of Counties	% of counties in State
Pre-2000	17	6	9.7
2000-2023	5	3	4.8

Table 1. Number of observations of *Xylota angustiventris* 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:

Historically (1999 and earlier), the species is known from NYC, Long Island, Orange, and Albany counties. Since 2000, it has been observed in Jefferson, Saratoga, and Ulster counties (White et al. 2022). The Jefferson County record is from Fort Drum Military Installation collected as part of a DOD funded pollinator survey performed by NYNHP in 2021. There is a record from Delaware County needing confirmation (iNaturalist 2025).

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Core	~200 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):

Mixed Hardwood Swamp

Mixed Northern Hardwoods

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; Unkown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing: Unkown; (blank) or Choose an item

Habitat Discussion:

Xylota are forest-dwelling and larvae are saproxylic, feeding on dead sap. This species presumably lives in late-successional forests, and have been found on the edge of mixed woods and shrubby meadows (Skevington et al. 2019). In NY, they have been found in Mixed Hardwood Swamp and Mixed Northern Hardwood habitat (White et al. 2022, Gawler 2008).

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):

New York records are from June and August (White et al. 2022), though throughout their range, *X. angustiventris* are observed from late May to mid-August (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 *Xylota angustiventris.*

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, especially with *Ceanothus* and *Rhododendron* (Skevington et al. 2019) will benefit adults of this species. Limiting exposure of Two-spotted Leafwalker 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 *Xylota angustiventris*.

VII. References

This SSA drew heavily from these resources:

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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].

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iNaturalist. Available from https://www.inaturalist.org. Accessed March 15, 2025.

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

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.

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

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.

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