

Species Status Assessment

Common Name: Yellow-spotted Sapeater **Date Updated:** 2025-03-02
Scientific Name: *Brachyopa vacua* **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):

In the US, *Brachyopa vacua* is known from Kansas eastward to New York and Massachusetts and Ontario and Quebec (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. The species is historically (1999 and earlier) known from five counties in eastern NY. Despite survey effort as part of a statewide pollinator survey, only one location has been confirmed in recent years (White et al. 2022).

Brachyopa vacua is a forest and a saproxylic species where larvae are found in sap runs on trunks or pools of decaying sap under bark and adults may be found on trees with bleeding wounds or perched on fallen trees or foliage in the sun (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: 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. The species is historically (1999 and earlier) known from five counties in eastern NY. Despite survey effort as part of a statewide pollinator survey, only one location has been confirmed in recent years (White et al. 2022).

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

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):

The species is historically (1999 and earlier) known from five counties in eastern NY. It has been confirmed in Rensselaer County since 2000. Despite survey effort as part of a statewide pollinator survey, one site has been confirmed in recent years.

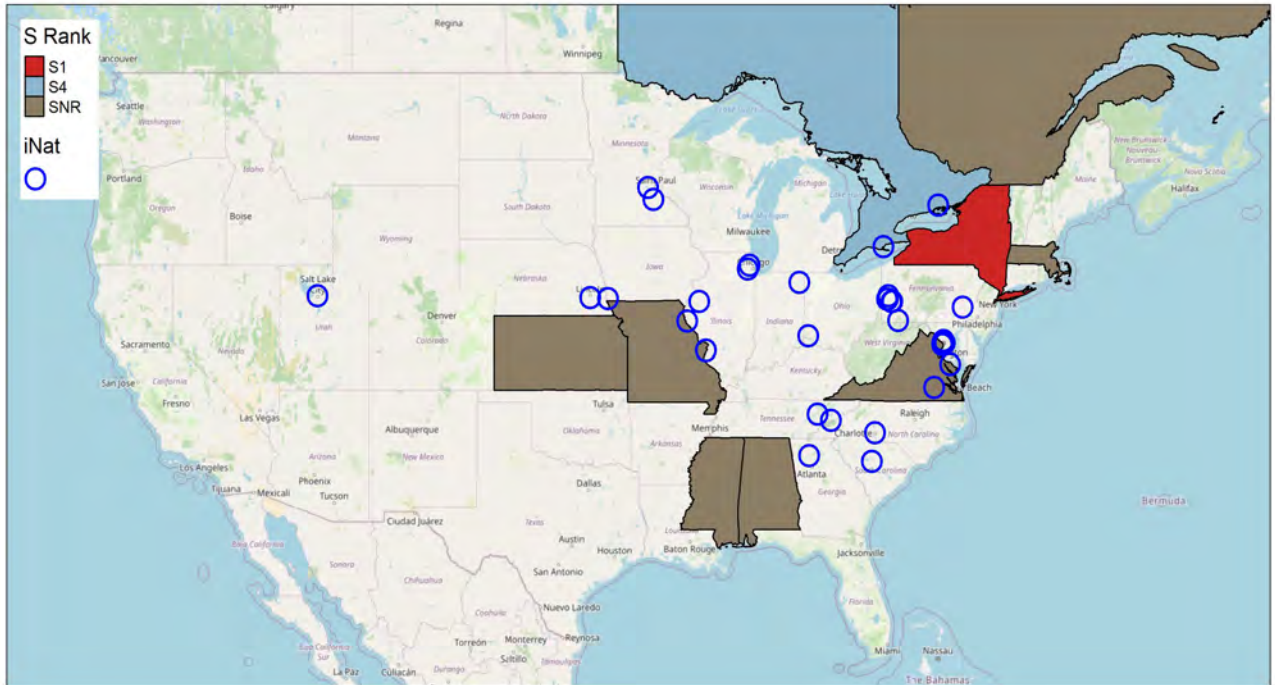


Figure 11: *Brachyopa vacua* North American distribution. Points show research-grade iNaturalist observations.

III. New York Rarity

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

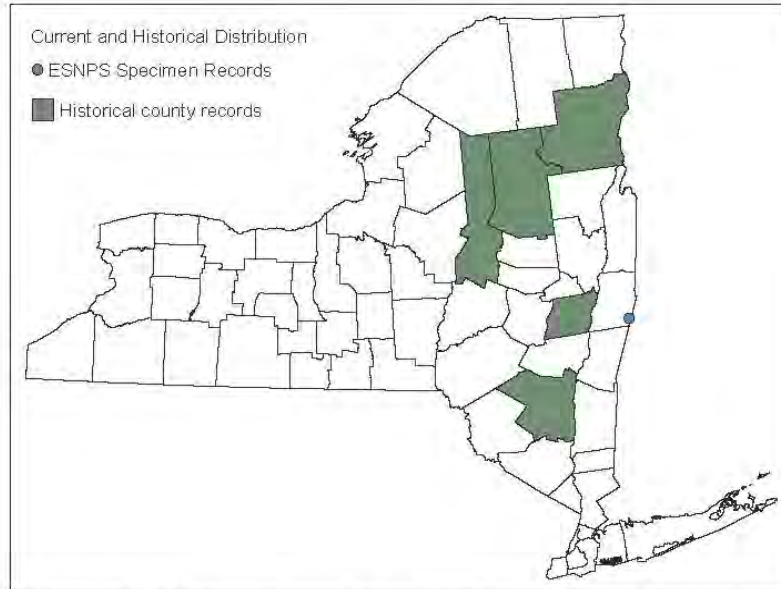


Figure 1: Observations from 2000 to present depicted as dots; those from 1999 and earlier as shaded counties.

Figure 22: NYS distribution for *Brachyopa vacua* based on the ESNPS (White et al. 2022).

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

Table 1. Number of observations of *Brachyopa vacua* 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:

B. vacua is known historically from Herkimer, Hamilton, Essex, Albany, and Ulster counties and was documented during the ESNPS in Rensselaer County in 2018 (White et al. 2022).

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Core	~500mi

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

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:

Brachyopa vacua is a forest species and saproxylic where larvae are found in sap runs on trunks or pools of decaying sap under bark and adults may be found on trees with bleeding wounds or perched on fallen trees or foliage in the sun (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):

Flight times are early May to early July (Skevington et al. 2019) and the New York observation was from mid-May (White et al. 2022).

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 *Brachyopa vacua*.

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 *Brachyopa vacua*.

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:

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

Northeast Fish and Wildlife Diversity. 2024. Regional Species of Greatest Conservation Need (2024). <https://northeastwildlifediversity.org/rsgcn>. Accessed January, 9, 2025.

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. Marshall. 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
------------------------	---------------

Date first prepared	March 2, 2025
First revision	
Last revision	