

Species Status Assessment

Common Name: a mining bee **Date Updated:** 2024-03-11
Scientific Name: *Andrena duplicata* **Updated By:** Erin L. White
Class: Insecta
Family: Andrenidae

Species Synopsis

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

Andrena duplicata is a mining bee in the Andrenidae family and has been documented from Mexico and in the U.S. from Missouri east to New York and New Jersey and south to North Carolina (NatureServe 2024, DiscoverLife 2024).

There were five specimens collected from a single location on Fort Drum Military Installation (Jefferson County) as part of a DOD funded pollinator survey performed by NYNHP in 2021. No previously known observations have been recorded in NY. As presence in NY is based on a single location from 2021, trends are unclear.

A. duplicata is found in open grassland habitats in NY. Select food plants for *Andrena duplicata* include Asteraceae: *Bidens* L. (Fowler and Droege 2020).

I. Status

a. Current legal protected Status

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

b. Natural Heritage Program

i. **Global:** GNR
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 as part of the ESNPS (White et al. 2022) based on rarity, trend, and threat information. There is a single known location (Jefferson County) in NY.

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	Pre and post 2000	S1	No
Connecticut	Not Detected	Declining	Declining	Unknown	SH	No
Massachusetts	No	-	-	-		No
New Jersey	Yes	Unknown	Unknown	Unknown	SNR	Yes
Pennsylvania	No	-	-	-		No
Vermont	No	-	-	-		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):

As presence in NY is based on a single location from 2021, trends are unclear.

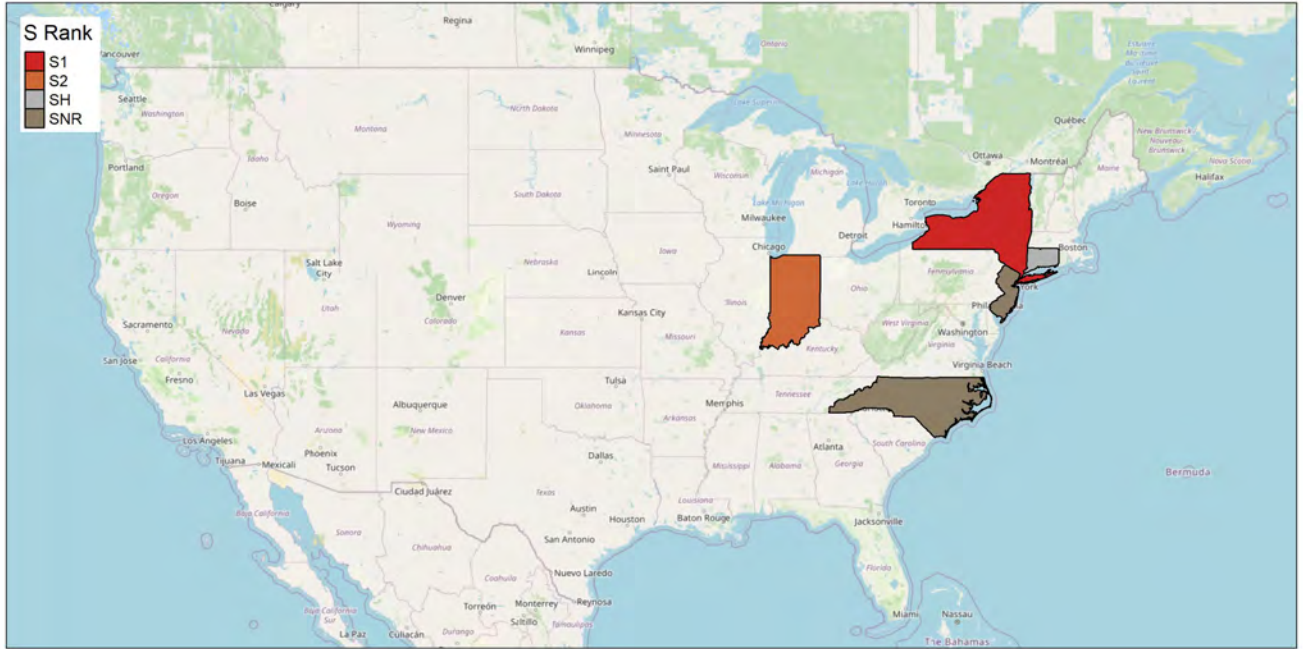


Figure 1. *Andrena duplicata* North American distribution. Points show research-grade iNaturalist observations.



Figure 2. *Andrena duplicata* distribution (DiscoverLife 2024).

III. New York Rarity

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

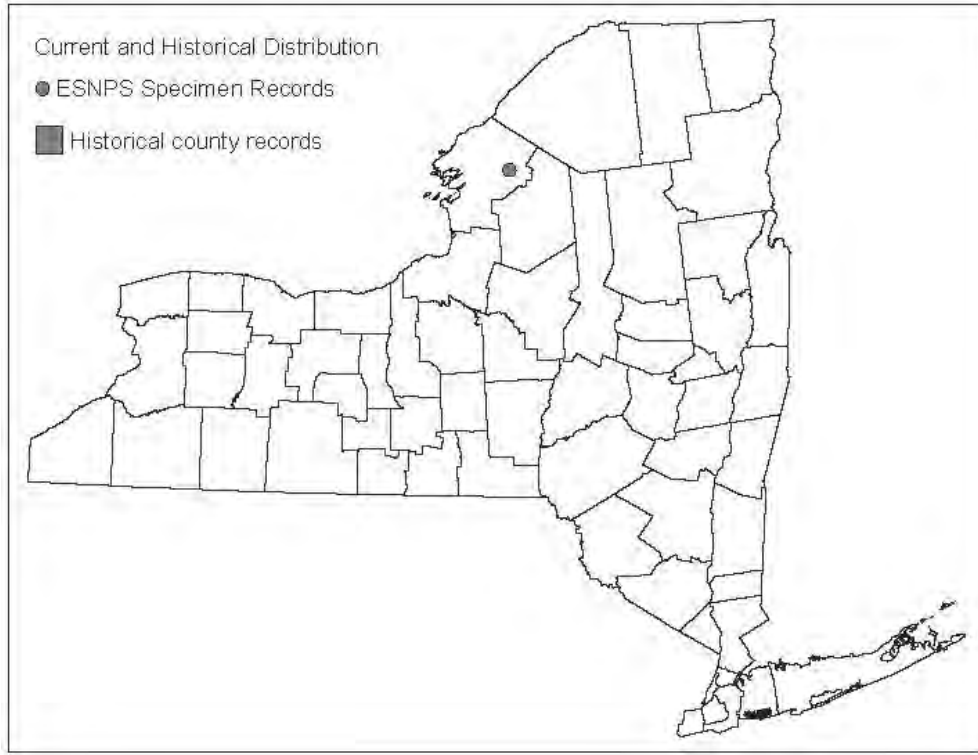


Figure 3. *Andrena duplicata* NY distribution (White et al. 2022).

Table 1. Number of observations of *Andrena duplicata* 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	0	0	0.0
2000-2023	5	1	1.6

Details of historic and current occurrence:

There were five specimens collected from a single location on Fort Drum Military Installation as part of a DOD funded pollinator survey performed by NYNHP in 2021. No previously known observations have been recorded in NY.

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	~600 miles

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):

Old Field/Managed Grasslands (Open successional northern sandplain grasslands)

Habitat or Community Type Trend in New York

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

A. duplicata is found in open grassland habitats in NY. Select food plants for *Andrena duplicata* include Asteraceae: *Bidens* L. (Fowler and Droege 2020).

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):

Andrena duplicata has been observed in August-October (Fowler and Droege 2020).

VI. Threats

Threats facing *Andrena duplicata* and other ground-nesting bees include habitat loss and degradation, invasive plants and pathogens, pesticides, and climate change (White et al. 2022). Kammerer et al. (2020) found that warmer winters will result in fewer bees and solitary bees are more sensitive to drought conditions, which are predicted in the Northeast as a result of climate change.

Threat Level 1	Threat Level 2	Threat Level 3	Spatial Extent	Severity	Immediacy	Trend	Certainty
1. Residential and Commercial	1.1 Housing & Urban Areas		Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
3. Energy Production & Mining	3.2 Mining & Quarrying		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.
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.
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	11.3 Changes in Temperature Regimes	11.3.3 Gradual temperature change (warmer winters result in fewer bees)	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
11. Climate Change	11.4 Changes in Precipitation & Hydrological Regimes	11.4.2 Droughts (solitary bees more sensitive to drought)	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.

Table 2. Threats to *Andrena duplicata*.

Action Category	Action	Description
B.3 Outreach	B.3.1.4.0 Public outreach and information	Awareness and 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	
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

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

Fowler, J. and S. Droege. 2020. Pollen specialist bees of the eastern United States. Available at: https://jarrodfowler.com/specialist_bees.html [Accessed March 11, 2024].

Kammerer, M., Goslee, S.C., Douglas, M.R., Tooker, J.F. and Grozinger, C.M., 2021. Wild bees as winners and losers: Relative impacts of landscape composition, quality, and climate. *Global change biology*, 27(6), pp.1250-1265.

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 March 11, 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.

White, Erin L., Matthew D. Schlesinger, and Timothy 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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