

Species Status Assessment

Common Name: a mining bee **Date Updated:** 2025-03-15
Scientific Name: *Andrena nida* **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 nida is known from Georgia to Vermont along the east coast in the U.S. (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 two locations in Tompkins County and has been confirmed in one of these locations in 2000 (White et al. 2022). It appears to have always been a rare bee in New York and was not documented during the ESNPS despite statewide concerted effort.

Select food plants for *Andrena nida* include: *Salix* (Fowler and Droege 2020). Wetland habitats containing the food plant could harbor this rare species and it has been observed in mixed hardwood swamp.

I. Status

a. Current legal protected Status

i. Federal: Not Listed

Candidate: No

ii. New York: Unprotected

b. Natural Heritage Program

i. Global: GNR

ii. New York: S1 Tracked by NYNHP?

On Active Tracking List

Other Ranks:

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 two locations in Tompkins County and has been confirmed in one of these locations in 2000 (White et al. 2022). It appears to have always been a rare bee in New York and was not documented during the ESNPS despite statewide concerted 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	No	Unknown	Unknown	Unknown	SH	No
Massachusetts	No	-	-	-		
New Jersey	No	-	-	-		
Pennsylvania	Yes	Unknown	Unknown	Unknown	SNR	No
Vermont	No	Unknown	Unknown	Unknown	SH	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):

Historically (1999 and earlier), the species is known from two locations in Tompkins County and has been confirmed in one of these locations in 2000 (White et al. 2022). It appears to have always been a rare bee in New York.

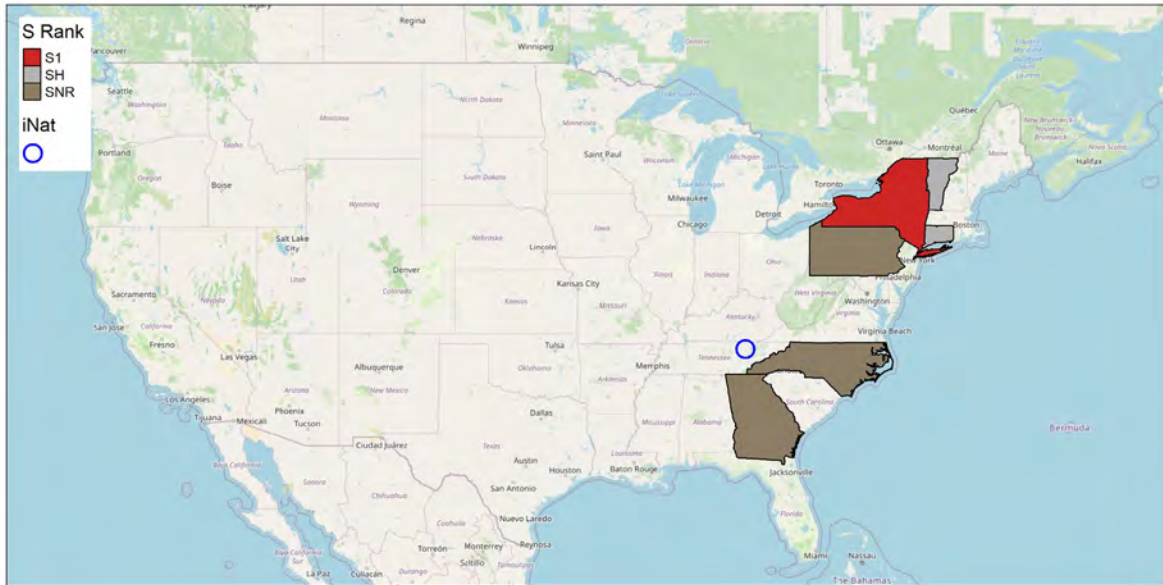


Figure 1: *Andrena nida* North American distribution. Points show research-grade iNaturalist observations.

III. New York Rarity

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

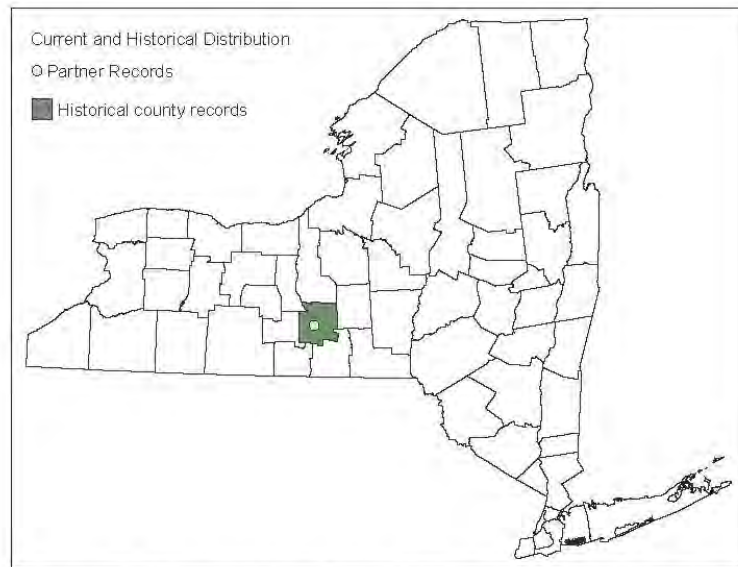


Figure 1: Observations from 2000 to present depicted as dots; those from 1999 and earlier as shaded counties.

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

Table 1. Number of observations of *Andrena nida* 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	2	1	1.6
2000-2023	1	1	1.6

Details of historic and current occurrence:

Historically (1999 and earlier), the species is known from two locations in Tompkins County and has been confirmed in one of these locations in 2000 (White et al. 2022). It appears to have always been a rare bee in New York.

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

NatureServe broad habitat types: Subterrestrial

Mixed Hardwood Swamp

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/ Increase
Yes	No	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:

Select food plants for *Andrena nida* include: *Salix* (Fowler and Droege 2020). Wetland habitats containing the food plant could harbor this rare species and it has been observed in mixed hardwood swamp.

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 nida has been observed in March-May (Fowler and Droege 2020), and it has also been observed in June in NY (White et al. 2022).

VI. Threats

Threats facing *Andrena nida* 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	Scope	Severity	Irreversibility	Trend	Certainty
1. Residential and Commercial	1.1 Housing & Urban Areas		W	L	H	Choose an item.	Choose an item.
3. Energy Production & Mining	3.2 Mining & Quarrying		R	L	M	Choose an item.	Choose an item.
4. Transportation & Service Corridors	4.1 Roads & Railroads		W	L	H	Choose an item.	Choose an item.
8. Invasive & Other Problematic Species	8.1 Invasive Non-Native Plants & Animals	8.1.2 Terrestrial plants	P	M	H	Choose an item.	Choose an item.
8. Invasive & Other Problematic Species	8.4 Pathogens		P	M	H	Choose an item.	Choose an item.
9. Pollution	9.3 Agricultural & Forestry Effluents	9.3.3 Herbicides & pesticides	R	L	H	Choose an item.	Choose an item.
11. Climate Change	11.1 Habitat Shifting & Alteration	(warmer winters result in fewer bees)	W	L	H	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).	R	L	H	Choose an item.	Choose an item.

Table 2. Threats to *Andrena nida*.

SCOPE: Spatial proportion of the distribution that is expected to be affected in the next 10 years (**narrow**= 1-10%; **restricted**=11-30%; **widespread**=31-70%; **pervasive**= 71-100%).

SEVERITY: The degree of population reduction in the next 10 years that can be reasonably expected from the threat given the current circumstances and trends (**low**=degrade/reduce population by 1-10%; **medium**=d/r population by 11-30%; **high**=d/r population by 30-70%; **very high**=d/r population by 71-100%).

IRREVERSIBILITY: The degree to which the effects can be reduced and the species restored (**low**=easily reversed, at a low cost, and/or within 0-5 years; **medium**=can be reversed with a reasonable commitment of resources and/or within 6-20 years; **high**=can technically be reversed, but not practicably affordable and/or it would take 21-100 years; **very high**=cannot be reversed and species not likely to be restore and/or it would take >100 years).

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:

The Freshwater Wetlands Act provides protection for wetlands greater than 12.4 acres in size under Article 24 of the NYS Conservation Law. The Adirondack Park Agency has the authority to regulate smaller wetlands within the Adirondack Park.

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

Any efforts to protect wild bee populations from pathogen exposure would benefit this species. Suggested actions would include using mesh to prevent escape of bees from commercial breeding greenhouses, proper disposal of commercial bees, sanitation in greenhouses, and development of molecular screening. Tight restrictions on importing bees and elimination of parasites from commercial populations has been suggested as ideal (Meeus et al. 2011, Schweitzer et al. 2012). Limiting exposure of a mining bee to insecticides would also benefit them. Suggested actions include avoidance of application to flowers that bees 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 bee populations (Schweitzer et al. 2012). Organic farming has also been suggested to benefit native bees. Ensuring habitat resources for foraging, nesting, and overwintering will also benefit *Andrena nida*. These habitats should be within close proximity to each other and without road or railroads between them, which have been suggested as potential barriers to dispersal. Suggested actions for habitat management should include ensuring nectar availability throughout the spring and summer by improving flower abundance and species richness and species with overlapping blooms. Select food plants for *Andrena nida* include *Salix L.* (Fowler and Droege 2020). If mowing of fields occurs, summer is the best time and mower blades should be raised to avoid ground nests. Staggering cutting times in different field areas will ensure nectaring sources are always available. Increasing available nesting habitat may be accomplished by reducing tillage in fields or leaving unplowed strips vegetated,

or even providing artificial nesting boxes. Managing for rodents and ground-nesting birds should also benefit native ground-nesting bees (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	
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 *Andrena nida*.

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.

Fowler, J. and S. Droege. 2020. Pollen specialist bees of the eastern United States. Available at: https://jarrodfowler.com/specialist_bees.html [Accessed May 14, 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.

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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