

# Species Status Assessment

**Common Name:** Rehn's Miner Bee      **Date Updated:** 2024-10-11  
**Scientific Name:** *Andrena rehni*      **Updated By:** Erin L. White  
**Class:** Insecta  
**Family:** Andrenidae

## Species Synopsis

Rehn's Miner Bee is known from Ontario and Quebec in Canada and the eastern United States as well as Wisconsin, Kansas, and California (DiscoverLife 2024, NatureServe 2024).

*Andrena rehni* is currently ranked an S1 in NY and has been found in 2023 and 2024 in one location in Westchester County. The species suffered significant declines in NY due to near disappearance of host plant American Chestnut (*Castanea dentata*), though it has always been a rare bee in NY. Historically (1999 and earlier), the species is known from two counties, Orange and Kings (White et al. 2022).

The single known extant location in NY is found at an arboretum containing *Castanea*. This is a managed, mowed orchard of American chestnut, American chestnut hybrids, and Chinese chestnuts immediately surrounded by grassy meadow and deciduous/mixed forest. Gardens with cultivated exotic plants are nearby (Molly Jacobson, pers. Comm.).

## 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:**

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: Proposed Watchlist [Assessment Priority]

**Status Discussion:**

*Andrena rehni* is currently ranked an S1 in NY and has been found in 2023 and 2024 in one location in Westchester County. The species suffered significant declines in NY due to near disappearance of host plant American Chestnut (*Castanea dentata*), though it has always been a rare bee in NY. Historically (1999 and earlier), the species is known from two counties, Orange and Kings (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		Proposed Watchlist [Assessment Priority]
New York	Yes	Unknown	Declining	Unknown	S1	No
Connecticut	Yes	Unknown	Unknown	Unknown	S1	No
Massachusetts	No	-	-	-		
New Jersey	No	-	-	-		
Pennsylvania	Yes	Unknown	Unknown	Unknown	SNR	No
Vermont	No	-	-	-		
Ontario	No	Unknown	Unknown	Unknown	SU	

Region	Present?	Abundance	Distribution	Time Frame	Listing status or S-Rank	SGCN?
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.

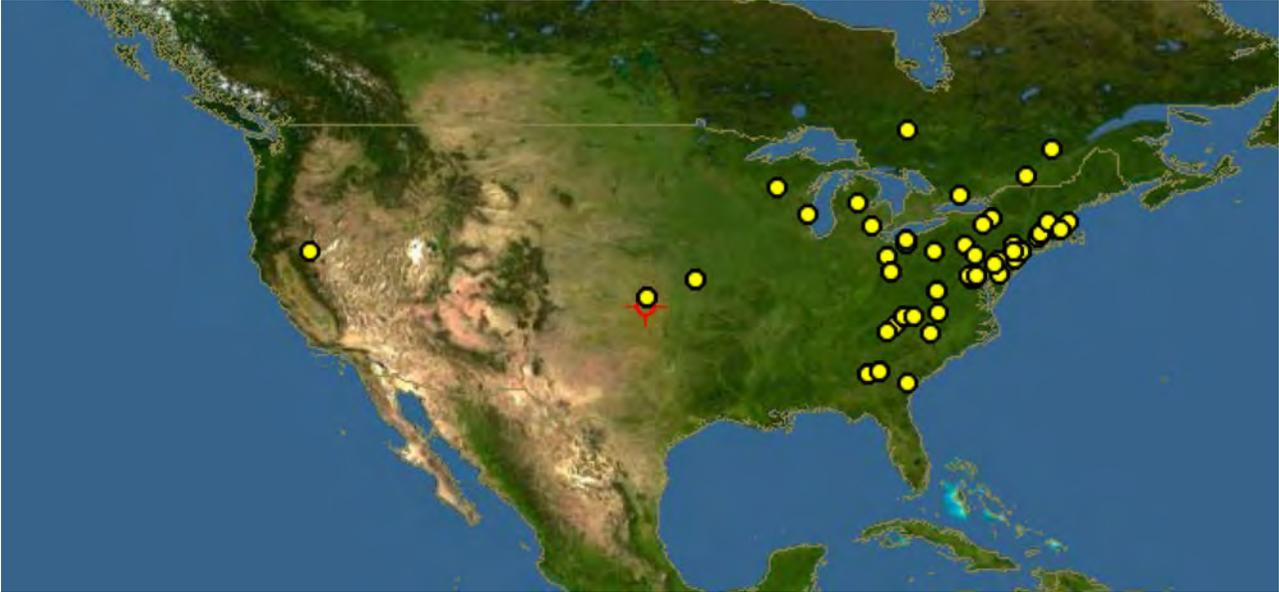
## Trends Discussion

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

The species presumably suffered declines in NY due to near disappearance of host plant American Chestnut (*Castanea dentata*) from forested habitats, though it has always been a rare bee in NY. It was thought to be state historical as of publication of the ESNPS (White et al. 2022) until the 2023 finding at an Arboretum in Westchester County (iNaturalist 2024). Historically (1999 and earlier), the species is known from two counties, Orange and Kings (White et al. 2022).



**Figure 11:** *Andrena rehni* North American distribution. Points show research-grade iNaturalist observations. Note the NY rank has changed to S1.



**Figure 22:** *Andrena rehni* distribution as reported on DiscoverLife (2024).

### III. New York Rarity

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

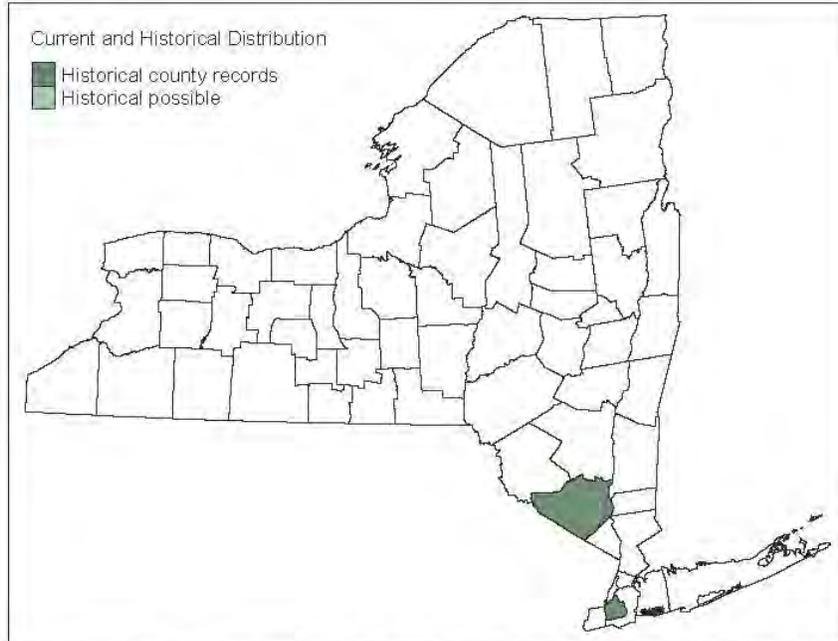


Figure 1: Observations from 2000 to present depicted as dots; those from 1999 and earlier as shaded counties.

**Figure 33:** NYS distribution for *Andrena rehni* based on ESNPS data (White et al. 2022). Note the Westchester County record is post-2022.

Table 1. Number of observations of *Andrena rehni* 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	7	2	3.2
2000-2023	1	1	1.6

#### Details of historic and current occurrence:

The species was thought to be state historical until the 2023 finding by Molly Jacobson at an Arboretum in Westchester County (iNaturalist 2024).

Historically (1999 and earlier), the species is known from two counties, Orange and Kings (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%		

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):

The single extant location is found at an arboretum containing *Castanea*. This is a managed, mowed orchard of American chestnut, American chestnut hybrids, and Chinese chestnuts immediately surrounded by grassy meadow and deciduous/mixed forest. Gardens with cultivated exotic plants are nearby. All specimens were collected on male catkins of an American chestnut hybrid. All carried pure *Castanea* pollen loads when later examined (Molly Jacobson, pers. Comm.).

If Chestnut still occurred in the wild, it would be expected in Mixed Hardwood Forest

### 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:

Select food plants for *Andrena rehni* are in the *Castanea* genus (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 rehni* has been observed in April-June throughout it's range (Fowler and Droege 2020).

## VI. Threats

Threats facing *Andrena rehni* 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.				
3. Energy Production & Mining	3.2 Mining & Quarrying		Choose an item.				
4. Transportation & Service Corridors	4.1 Roads & Railroads		Choose an item.				
8. Invasive & Other Problematic Species	8.1 Invasive Non-Native Plants & Animals	8.1.2 Terrestrial plants	Choose an item.				
8. Invasive & Other Problematic Species	8.4 Pathogens		Choose an item.				
9. Pollution	9.3 Agricultural & Forestry Effluents	9.3.3 Herbicides & pesticides	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.				
11. Climate Change	11.4 Changes in Precipitation & Hydrological Regimes	11.4.2 Droughts (solitary bees more sensitive to drought)	Choose an item.				

**Table 2.** Threats to *Andrena rehni*.



Action Category	Action	Description
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 rehni*.

## 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:

DiscoverLife. 2024. Online. Available at: <http://www.discoverlife.org/> [Accessed October 11, 2024].

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

iNaturalist. Available from <https://www.inaturalist.org>. Accessed October 11, 2024.

IUCN 2024. IUCN Red List of Threatened Species. Version 2023.1. <[www.iucnredlist.org](http://www.iucnredlist.org)>. Accessed 15 October 2024.

Fowler, J. and S. Droege. 2020. Pollen specialist bees of the eastern United States. Available at: [https://jarrod Fowler.com/specialist\\_bees.html](https://jarrod Fowler.com/specialist_bees.html) [Accessed October 15, 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 October 15, 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.

<b>Originally prepared by</b>	Erin L. White
<b>Date first prepared</b>	October 11, 2024
<b>First revision</b>	
<b>Last revision</b>	