Species Status Assessment

Common Name:	Summer Miner Bee	**Date Updated:**	2025-03-03
Scientific Name:	*Protandrena aestivalis*	**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):

Summer Miner Bee is known from Alberta to Quebec, Canada and in the US, from Montana east to Maine and south to Florida (DiscoverLife 2025, NatureServe 2025).

The species was ranked an S1S2 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 Warren County and has been confirmed in Jefferson and Dutchess counties since 2000, suggesting this has always been a rare bee in NY.

Summer Miner Bee has been observed near managed grasslands and floodplain forest habitat types (White et al. 2022, Gawler 2008), but has also been observed in shrublands (NatureServe 2025). Select food plants for *Protandrena aestivalis* include: Asteraceae: Asteraea: Chrysopsis, Erigeron, Solidago, Symphyotrichum (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: S1S2 **Tracked by NYNHP?** On Active Tracking List

Other Ranks:

NYS 2025 SGCN Status: High Priority Species of Greatest Conservation Need
IUCN Red List: Not assessed by IUCN Red List
Northeast Regional SGCN: Not listed

Status Discussion:

The species was ranked an S1S2 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 Warren County and has been confirmed in Jefferson and Dutchess counties since 2000, suggesting this has always been a rare bee 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	Unknown	S1S2	No
Connecticut	Yes	Unknown	Unknown	Unknown	S1	No
Massachusetts	No	-	-	-		
New Jersey	No	-	-	-		
Pennsylvania	No	Unknown	Unknown	Unknown		
Vermont	Yes	Unknown	Unknown	Unknown	S2	
Ontario	No	Unknown	Unknown	Unknown	S3S5	
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):

The species is historically (1999 and earlier) known from Warren County and has been confirmed in Jefferson and Dutchess counties since 2000, suggesting this has always been a rare bee in NY.

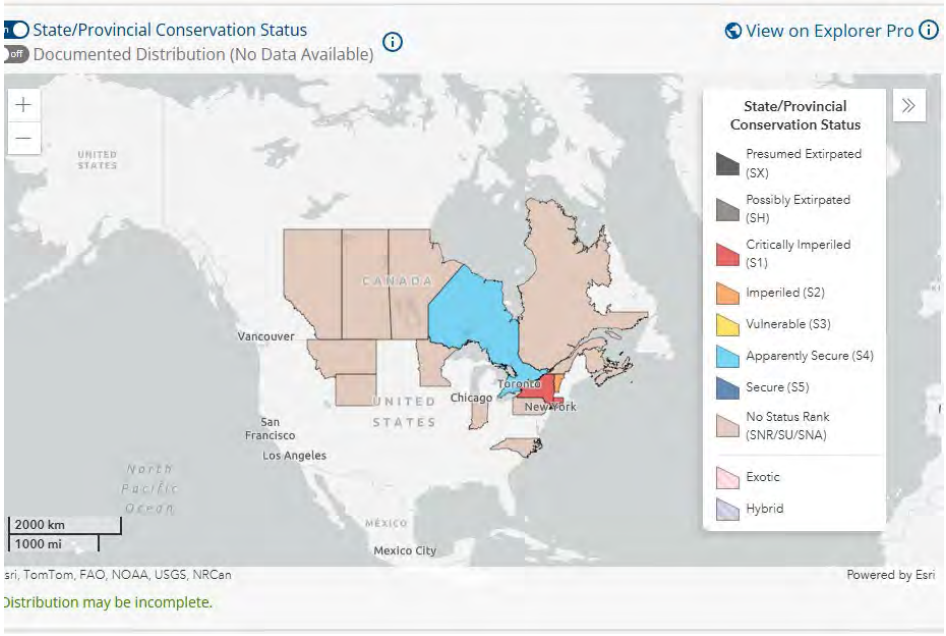

Figure 11: *Protandrena aestivalis* North American distribution (NatureServe 2025).

Figure 22: *Protandrena aestivalis* North American distribution (DiscoverLife 2025).

III. New York Rarity

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

Figure 3 3: NYS distribution for *Protandrena aestivalis* based on ESNPS data (White et al. 2022). Observations from 2000 to present depicted as dots; those from 1999 and earlier as shaded counties.

Years	Observations	# of Counties	% of counties in State
Pre-2000	1	1	1.6
2000-2023	3	2	3.2

Table 1. Number of observations of *Protandrena aestivalis* 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 Summer Miner Bee is known from one location in Warren County. There were recent observations documented from two locations in Jefferson County on Fort Drum Military Installation as part of a DOD funded pollinator survey performed by NYNHP in 2019 and 2021 and an additional observation in 2017 in Dutchess County as part of the ESNPS project (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%	Peripheral	~1000 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

Old Field/Managed Grasslands

Floodplain Forest

Habitat or Community Type Trend in New York

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

Summer Miner Bee has been observed near managed grasslands and floodplain forest habitat types (White et al. 2022, Gawler 2008), but has also been observed in shrublands (NatureServe 2025). Select food plants for *Protandrena aestivalis* include: Asteraceae: Asteraea: Chrysopsis, Erigeron, Solidago, Symphyotrichum (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

Recent observations of Summer Miner Bee have been made in August (White et al. 2022).

VI. Threats

Threats facing *Protandrena aestivalis* 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 *Protandrena aestivalis.*

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:

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 Summer Miner 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 Protandrena aestivalis. 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 *Protandrena aestivalis* include: Asteraceae: Asteraea: Chrysopsis, Erigeron, Solidago, Symphyotrichum (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 2. Recommended conservation actions for *Andrena aliciae*.

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. 2025. Online. Available at: http://www.discoverlife.org/ [Accessed March 3, 2025].

Fowler, J. and S. Droege. 2020. Pollen specialist bees of the eastern United States. Available at: https://jarrodfowler.com/specialist_bees.html [Accessed March 5, 2025].

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iNaturalist. Available from https://www.inaturalist.org. Accessed March 3, 2025.

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.

NatureServe. 2025. NatureServe Explorer: An online encyclopedia of life [web application]. NatureServe, Arlington, Virginia. http://www.natureserve.org/explorer. [Accessed 3/3/2025].

Northeast Fish and Wildlife Diversity. 2024. Regional Species of Greatest Conservation Need (2024). https://northeastwildlifediversity.org/rsgcn. Accessed May 14, 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.

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