

# Species Status Assessment

**Common Name:** Great Spreadwing      **Date Updated:** 2024-07-31  
**Scientific Name:** *Archilestes grandis*      **Updated By:** Erin L. White  
**Class:** Insecta  
**Family:** Lestidae

## Species Synopsis

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

Great Spreadwings range from Ontario, Canada and across the continental United States (NatureServe 2024).

The species is currently ranked S2 in NY and has recently colonized the east from the southwest, but has been found in southern NY since at least the early 1990s (NYNHP 2024).

The trend is likely stable for NY, though could be increasing as it has been observed in five counties in the last 20 years (Abbott 2024, iNaturalist 2024). Since the early 1990s, it does not appear to be expanding in range northward in the state and the known distribution is fairly restricted in NY.

Great Spreadwings breed in low gradient small streams, ponds, and ditches (Lam 2003, White et al. 2015). They are tolerant of poor water quality but in their known range in NY are under development pressure.

## I. Status

### a. Current legal protected Status

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

### b. Natural Heritage Program

i. **Global:**      G5  
ii. **New York:**      S2      **Tracked by NYNHP?** Yes

**Other Ranks:**

NYS 2025 SGCN Status: Species of Greatest Conservation Need  
 COSEWIC: Not listed in Canada  
 IUCN Red List: Least Concern  
 Northeast Regional SGCN: R2R3; Shared Responsibility

**Status Discussion:**

White *et al.* (2010) calculated a revised draft S-rank of S1 from SNA. The species was incorrectly not updated following the NYDDS when revised in rank, so has now been updated in Biotics and will be a tracked species. Based on new information since 2010 from Odonata Central and iNaturalist, I reviewed and can confirm most of these records and recommend a revised rank of S2. The species has recently colonized the east from the southwest, but has been found in southern NY since at least the early 1990s (NYNHP 2024).

**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	R2R3	No
New York	Yes	Unknown	Stable	Unknown	S1	No
Connecticut	Yes	Unknown	Unknown	Unknown	SNR	No
Massachusetts	No	-	-	-		
New Jersey	Yes	Unknown	Unknown	Unknown	SNR	No
Pennsylvania	Yes	Unknown	Unknown	Unknown	S4	No
Vermont	Yes	Unknown	Unknown	Unknown		No
Ontario	No	Unknown	Unknown	Unknown	S1	
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**

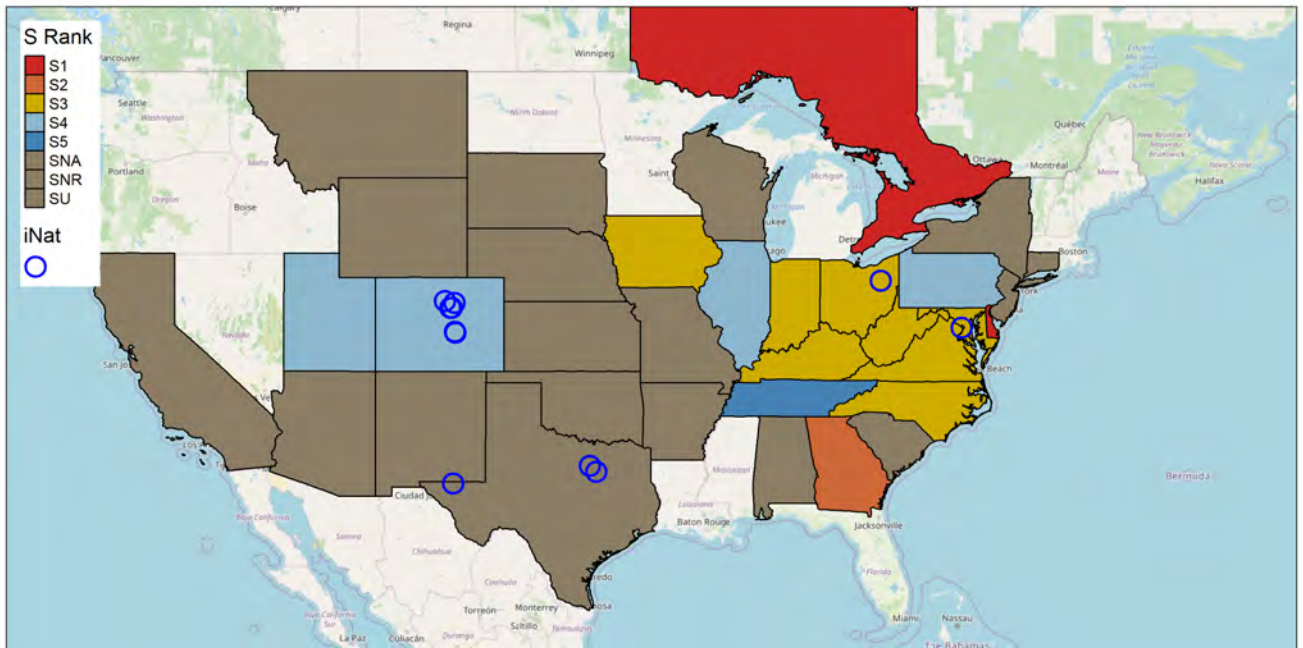
*(specify any monitoring activities or regular surveys that are conducted in New York):*

The New York State Dragonfly and Damselfly Survey (NYSDDS) was conducted from 2005-2009 but there are no organized, regular monitoring or survey activities directed toward this species or to sites where it has been documented.

### Trends Discussion

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

The species has recently colonized the east from the southwest, but has been found in southern NY since at least the early 1990s (NYNHP 2024). The trend is likely stable for NY, though could be increasing as it has been observed in five counties in the last 20 years (Abbott 2024, iNaturalist 2024). Since the early 1990s, it does not appear to be expanding in range northward in the state and the known distribution is fairly restricted in NY.



**Figure 11:** *Archilestes grandis* North American distribution. Points show research-grade iNaturalist observations.



**Figure 22:** *Archilestes grandis* regional distribution as reported at <https://northeastwildlifediversity.org/rsgcn> and found in a regional odonate project.

### III. New York Rarity

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

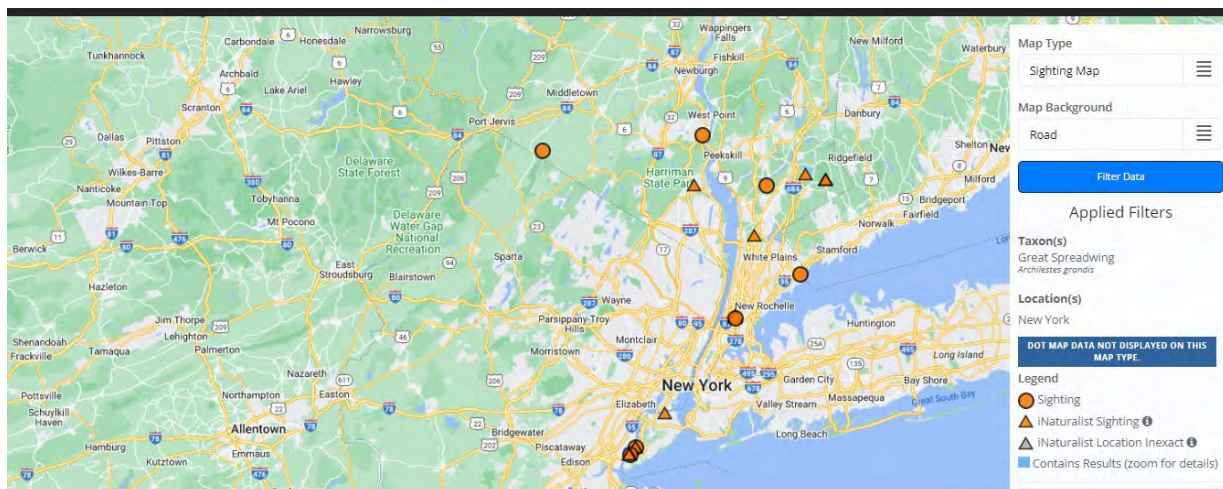


Figure 3. Distribution of the Great Spreadingwing in NY (Abbott 2024).

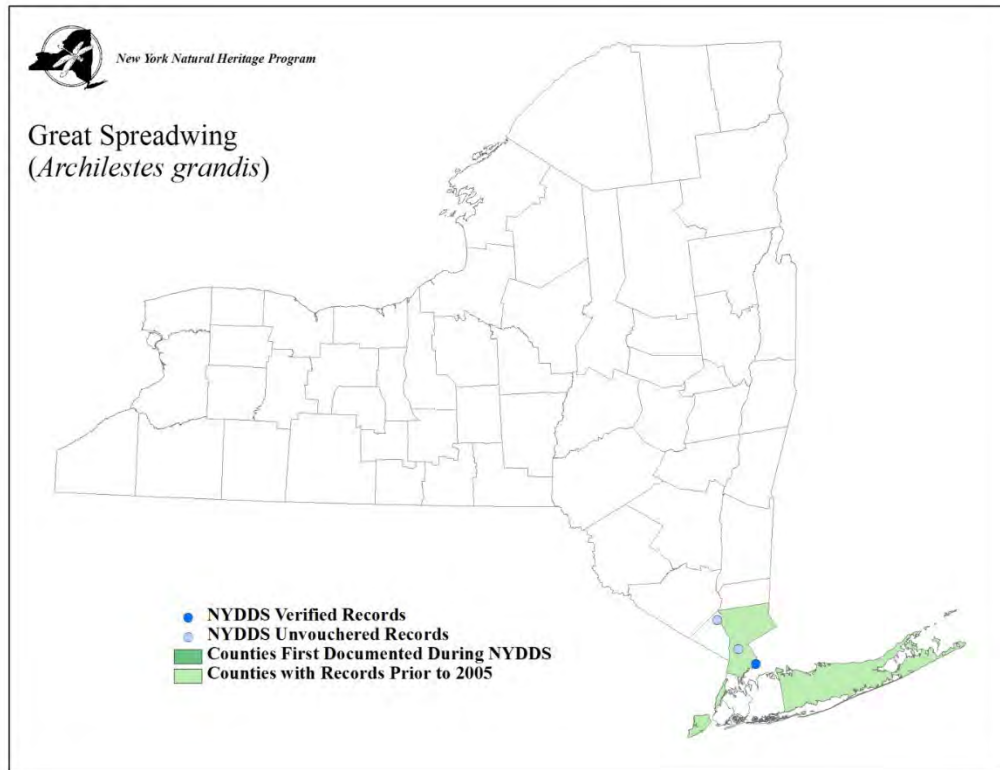


Figure 4 3: Occurrence record of the Great Spreadwing in New York during the NYDDS (White *et al.* 2010).

Table 1. Number of confirmed observations of *Archilestes grandis* 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-2005	6	4	6.5
2005-2009	3	2	3.2
2010-present	4	3	4.8

**Details of historic and current occurrence:**

Pre-2005, Great Spreadwing was collected in New York State from Westchester, Richmond, and Suffolk Counties and NYC (NYNHP 2024). It was confirmed in 3 locations in Westchester County and one location in Orange County during the NYDDS years (Abbott 2024, iNaturalist 2024). Since 2010, there are confirmed observations from Rockland County (at least one location), Richmond County (likely four locations), Westchester County (two additional locations) and has been reliably observed over recent years at the New York Botanical Garden in the Bronx (Abbott 2024, iNaturalist 2024).

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):*

Mixed Hardwood Swamp

NatureServe broad habitat types: Riparian, TEMPORARY POOL, Pool, SPRING/SPRING

**Size/Waterbody Type:** Headwater, Creek

**Geology:** Low buffered, acidic to Moderately buffered

**Temperature:** Transitional Cool, Transitional Warm

**Gradient:** Low-moderate

### Habitat or Community Type Trend in New York

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

*Column options*

### Habitat or Community Type Trend in New York

**Declining:** \_\_\_\_\_ **Stable:**  \_\_\_\_\_ **Increasing:** \_\_\_\_\_ **Unknown:** \_\_\_\_\_

**Time frame of decline/increase:** low gradient small streams are highly vulnerable in the Northeast, but since this species can be found in a variety of ponds and forested wetlands which have moderate vulnerability, overall stable (White et al. 2015).

**Habitat Specialist**    **Yes:** \_\_\_\_\_    **No:**  \_\_\_\_\_

**Indicator Species**    **Yes:** \_\_\_\_\_    **No:**  \_\_\_\_\_

### Habitat Discussion:

Great Spreadwings breed in low gradient small streams, ponds, and ditches (Lam 2003, White et al. 2015). They are tolerant of poor water quality but in their known range in NY are under development pressure.

IUCN habitat description: *Archilestes grandis* occurs at slow streams, usually with wooded banks and may live in degraded situations in urban areas. Larvae may be seen swimming in open in pools; probably restricted to fishless waters (Paulson 2011).

## 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):

Phenology for New York appears to be early July to early October for adults (Abbott 2024, iNaturalist 2024).

**Breeder in New York:**  \_\_\_\_\_

**Summer Resident:**  \_\_\_\_\_

**Winter Resident:**  \_\_\_\_\_

**Anadromous:** \_\_\_\_\_

**Non-Breeder in New York:** \_\_\_\_\_

**Summer Resident:** \_\_\_\_\_

**Winter Resident:** \_\_\_\_\_

**Catadromous:** \_\_\_\_\_

**Migratory Only:** \_\_\_\_\_

**Unknown:** \_\_\_\_\_

## VI. Threats

Threat Level 1	Threat Level 2	Threat Level 3	Spatial Extent	Severity	Immediacy	Trend	Certainty
4. Transportation & Service Corridors	4.1 Roads & Railroads	4.1.1 Roads (runoff)	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
4. Transportation & Service Corridors	4.1 Roads & Railroads	4.1.3 Bridges (construction/maintenance)	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.
7. Natural System Modifications	7.2 Dams & Water Management/Use	7.2.1 Water level management using dams (altered hydrology, sedimentation)	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	-	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
9. Pollution	9.1 Domestic & Urban Wastewater	-	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
9. Pollution	9.2 Industrial & Military Effluents	-	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
9. Pollution	9.3 Agricultural & Forestry Effluents	9.3.1 Nutrient loads (run off, algal blooms)	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.	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	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.

**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:

Article 15 of Environmental Conservation Law provides protection of rivers, streams, lakes and ponds through the Protection of Waters permit program. This is not adequate to protect the habitat/species.

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

Any activity which might lead to water contamination, siltation, warming of waterways, or the alteration of natural hydrology could directly and indirectly impact riparian habitats and [insert species common name] populations. Such threats might include roadway and agricultural runoff, industrial pollution, dams, bridge construction and maintenance, logging activities, and development near riparian habitats (NYS DEC 2005). In addition, siltation decreases the amount of sunlight that reaches aquatic plants (EPA 2005) and lowers the quality of habitats needed for a variety of aquatic species (NYS DEC 2005). Point source pollution, such as effluents from municipal and industrial facilities, contribute to the degradation and pollution of aquatic habitats (EPA 2022, NYS DEC 2005, Mahar and Landry 2013, Strayer et al. 2004).

Altering natural waterflow can degrade habitat and restrict species movement. Dams directly restrict or impede species movement, alter the flow of water, change the water temperature, and contribute to sedimentation (NYS DEC 2005, Zaidel et al. 2021).

While modern day agricultural and silvicultural practices are an important aspect of the New York State economy, it is important to consider the effects on ecosystems and species. As these practices move closer to rivers, the natural riparian buffers are often removed. Riparian buffers maintain stream temperature and slow or prevent runoff of sediments from upland soil disturbances. Furthermore, they slow or reduce runoff from farm fields and pastures, such as contaminants from pesticides, fertilizers, manure, and sludge, into waterways (EPA 2005, NYS DEC 2005, Souza et al. 2020). Excessive fertilizer use can lead to algal blooms that can be deadly to aquatic life and overgrazing of livestock in fields could introduce pathogens, oxygen-demanding organics and solids, and invasive species to aquatic ecosystems (EPA 2005).

Approximately 10% of introduced, non-native species could have an impact on the health of ecosystems (McCormick et al. 2009). Invasive plants tend to outcompete native plants and can change natural processes (NYS DEC 2005). There is an increased risk of runoff and erosion when these plants are along streams and rivers. Aquatic invasive plants and animals can alter the water chemistry, change the nutrient regime, or decrease the dissolved oxygen levels. Introduced fish can alter trophic relationships resulting in a change in native fish populations and decreased water quality (McCormick et al. 2009).

Climate change is another threat that is likely to have lasting effects on riverine systems. Irregular weather patterns can cause extreme drought, flooding, and temperature fluctuations.

Heat waves are expected to be more intense (Frankson et al. 2022). The Northeast Region of the United States is expected to experience an increase in precipitation, more frequent storms, and higher than normal temperatures (EPA 2016, EPA 2022). Precipitation is expected to increase 10% to 15% in southern New York and 15 to 20% in northern New York by 2050 (Frankson et al. 2022). Extreme flooding can cause widespread erosion and runoff with added risk of contamination if flooding occurs at remediation sites, industrial sites, or wastewater treatment facilities (EPA 2016, EPA 2022). Temperature increases can significantly alter ecosystems. As water temperatures rise, the amount of dissolved oxygen decreases and evaporation increases, potentially lowering lake and stream levels (EPA 2022). Any combination of these events could change species distributions (EPA 2022) and those that cannot adapt or migrate may be extirpated from some areas (NYS DEC 2005).

Table 2. Recommended conservation actions for *Archilestes grandis*.

Action Category	Action
Land/water protection	1.1. Site/area protection
Land/water protection	1.2. Resource & habitat protection
Land/water management	2.1. Site/area management
Land/water management	2.2. Invasive/problematic species control
Land/water management	2.3. Habitat & natural process restoration
Education & awareness	4.2. Training
Education & awareness	4.3. Awareness & communications
Law & policy	5.2. Policies and regulations

## 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].

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identification of Odonata. Available at <https://www.odonatacentral.org/>. (Accessed: 7/31/2024).

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