

## Species Status Assessment

**Class:** Insecta  
**Family:** Coenagrionidae  
**Scientific Name:** *Nehalennia integricollis*  
**Common Name:** Southern sprite

### Species synopsis:

The range of the southern sprite (*Nehalennia integricollis*) begins in Texas and Oklahoma and stretches eastward across the southern United States, then northward along the Atlantic Coast to Rhode Island (Donnelly 2004, Abbott 2010). In New York, there are four older Roy Latham records for *N. integricollis*, all from Suffolk County (Donnelly 1999). There are two extant locations in Suffolk County, one from 1995 and one from 2005 (Donnelly 1999, New York Natural Heritage Program 2012).

*N. integricollis* occurs on northeastern coastal plains at grassy ponds, lakes, marshes, and bogs (Lam 2004, Bangma and Barlow 2010). In New York, known habitats are coastal plain ponds on Long Island (New York Natural Heritage Program 2010).

### I. Status

#### a. Current and Legal Protected Status

i. **Federal**      Not listed      **Candidate?** No

ii. **New York**      Special Concern; SGCN

#### b. Natural Heritage Program Rank

i. **Global**      G5

ii. **New York**      S1      **Tracked by NYNHP?** Yes

### Status Discussion:

White *et al.* (2010) suggests that the status remain S1 (5 or fewer occurrences, or few remaining acres or miles of stream, or factors demonstrably making it especially vulnerable to extinction rangewide or in New York State).

**II. Abundance and Distribution Trends**

**a. North America**

**i. Abundance**

declining  increasing  stable  unknown

**ii. Distribution:**

declining  increasing  stable  unknown

**Time frame considered:**     Last assessment 1990    

**b. Regional**

**i. Abundance**

declining  increasing  stable  unknown

**ii. Distribution:**

declining  increasing  stable  unknown

**Regional Unit Considered:**     Northeast    

**Time Frame Considered:**     Last assessment 1990

**c. Adjacent States and Provinces**

<b>CONNECTICUT</b>	<b>Not Present</b> <u>  X  </u>	<b>No data</b> _____
<b>MASSACHUSETTS</b>	<b>Not Present</b> <u>  X  </u>	<b>No data</b> _____
<b>QUEBEC</b>	<b>Not Present</b> <u>  X  </u>	<b>No data</b> _____
<b>VERMONT</b>	<b>Not Present</b> <u>  X  </u>	<b>No data</b> _____
<b>ONTARIO</b>	<b>Not Present</b> <u>  X  </u>	<b>No data</b> _____

**NEW JERSEY**                      **Not Present** \_\_\_\_\_                      **No data**   X  

**i. Abundance**

\_\_\_\_\_ **declining**    \_\_\_\_\_ **increasing**                      \_\_\_\_\_ **stable**                        X   **unknown**

**ii. Distribution:**

\_\_\_\_\_ **declining**    \_\_\_\_\_ **increasing**                      \_\_\_\_\_ **stable**                        X   **unknown**

Time frame considered: \_\_\_\_\_

Listing Status: \_\_\_\_\_ **Not listed** \_\_\_\_\_ SGCN?   No  

**PENNSYLVANIA**                      **Not Present** \_\_\_\_\_                      **No data**   X  

**i. Abundance**

\_\_\_\_\_ **declining**    \_\_\_\_\_ **increasing**                      \_\_\_\_\_ **stable**                        X   **unknown**

**ii. Distribution:**

\_\_\_\_\_ **declining**    \_\_\_\_\_ **increasing**                      \_\_\_\_\_ **stable**                        X   **unknown**

Time frame considered: \_\_\_\_\_

Listing Status: \_\_\_\_\_ **Not listed** \_\_\_\_\_ SGCN?   No

**d. NEW YORK**

No data \_\_\_\_\_

**i. Abundance**

\_\_\_\_ declining \_\_\_\_ increasing \_\_\_\_ stable  X  unknown

**ii. Distribution:**

\_\_\_\_ declining \_\_\_\_ increasing \_\_\_\_ stable  X  unknown

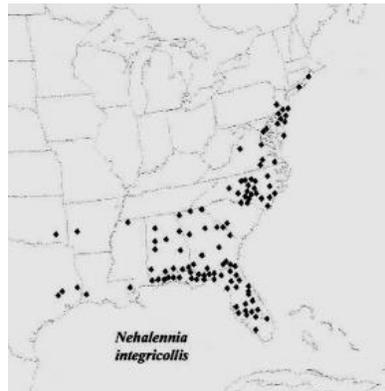
Time frame considered:  1990-present

**Monitoring in New York.**

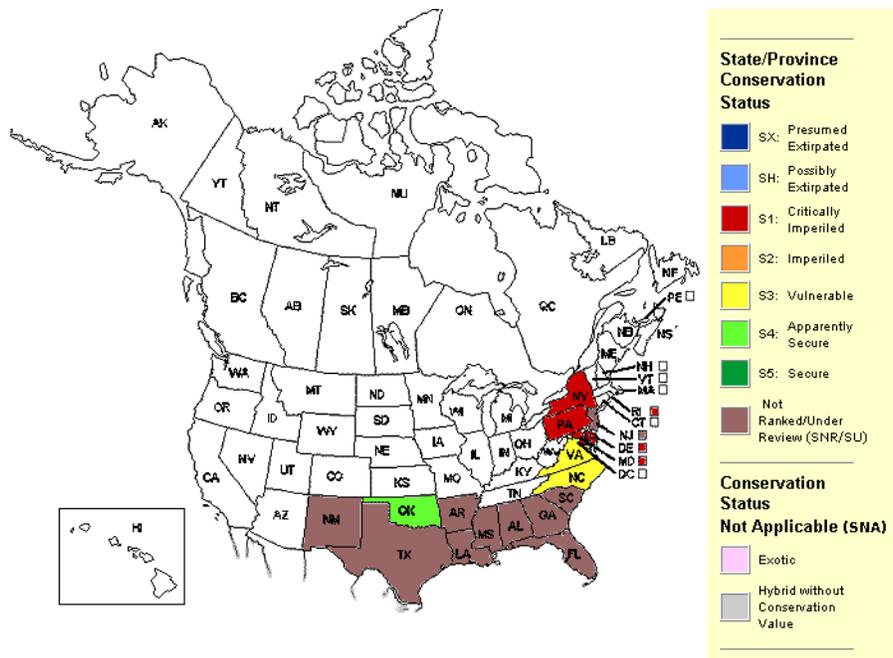
The New York State Dragonfly and Damselfly Survey was conducted from 2005-2009, but there are no organized, regular monitoring or survey activities directed toward this species or to sites where it has been documented.

**Trends Discussion:**

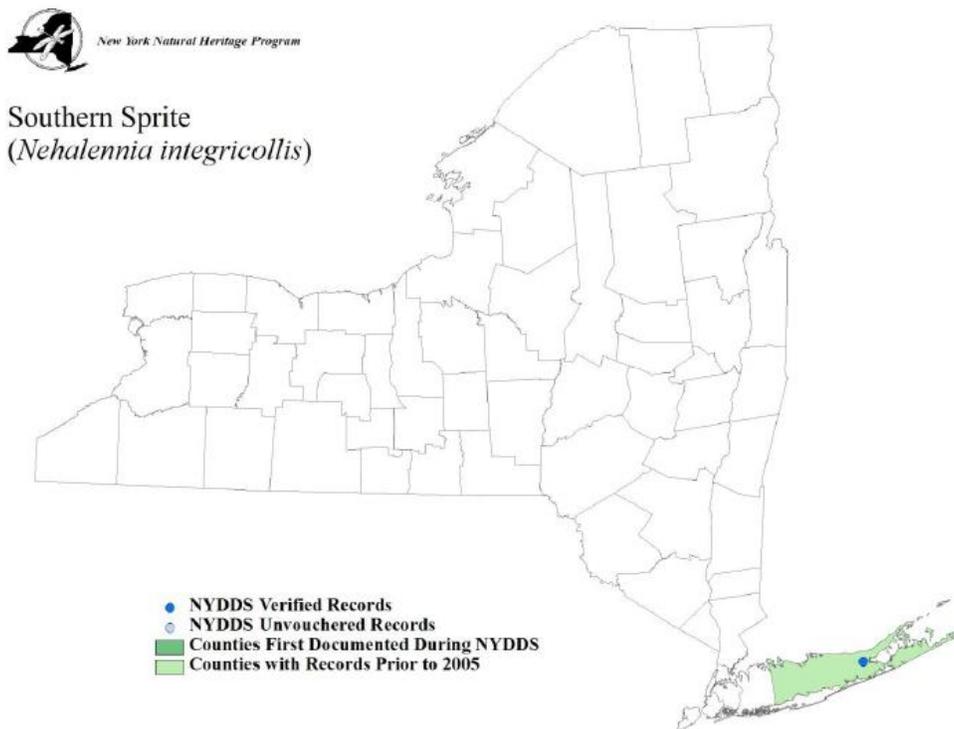
Records for this species are too few and infrequent and lacking repeated surveys at extant sites, such that detecting a population trend is not possible (Paul Novak, pers. comm.)



**Figure 1.** Distribution of the southern sprite in the United States (Donnelly 2004).



**Figure 2.** Conservation status of the southern sprite in North America (NatureServe 2012).



**Figure 3.** Occurrences of the southern sprite in New York (White *et al.* 2010).

**III. New York Rarity, if known:**

<b>Historic</b>	<b><u># of Animals</u></b>	<b><u># of Locations</u></b>	<b><u>% of State</u></b>
<b>prior to 1970</b>	_____	<u>  4  </u>	<u>  1%  </u>
<b>prior to 1980</b>	_____	_____	_____
<b>prior to 1990</b>	_____	_____	_____

**Details of historic occurrence:**

Historically, the species was taken repeatedly by Roy Latham in Suffolk County in 1953 and 1954 and identified by T. Donnelly. Historic locations include: Greenport, Cutchogue, Mattituck, and Sag Harbor (Donnelly 1999).

<b>Current</b>	<b><u># of Animals</u></b>	<b><u># of Locations</u></b>	<b><u>% of State</u></b>
	_____	<u>  1  </u>	_____

**Details of current occurrence:**

There are two extant locations for this species, both from Suffolk County. One is from Manorville from 1995 reported in Donnelly 1999 and repeated in White *et al.* 2010, while the second is from Riverhead (White *et al.* 2010, New York Natural Heritage Program 2012).

**New York’s Contribution to Species North American Range:**

**Distribution** (percent of NY where species occurs)

**Abundance** (within NY distribution)

<u>  X  </u> 0-5%	___ abundant
___ 6-10%	___ common
___ 11-25%	___ fairly common
___ 26-50%	___ uncommon
___ >50%	<u>  X  </u> rare

**NY’s Contribution to North American range**

<u>  X  </u> 0-5%
___ 6-10%
___ 11-25%
___ 26-50%
___ >50%

**Classification of New York Range**

Core

Peripheral

Disjunct

**Distance to core population:**

~1,400 mi to core stable pop.

**Rarity Discussion:**

No estimation of population size for this species has been made based on observations from 1995 and 2005 in Suffolk county (New York Natural Heritage 2010). There are observations made prior to this at four other locations in Suffolk county (Donnelly 1999), but information prior to the late 1990s is limited (Donnelly 2004). Therefore, any new location information on *N. integricollis* in New York may reflect heightened interest in surveying for this species rather than a population increase or a range expansion (NYS DEC 2005).

Long-term information regarding population size is not available prior to the late 1990s (New York Natural Heritage Program 2010). Since observations are fairly recent, and the full extent and size of the populations have not been determined, long-term trends are unclear.

Despite increased survey efforts on Long Island in recent years for the New York Dragonfly and Damselfly Survey (2005-2009), one new location has been documented during those years (White *et al.* 2010).

**IV. Primary Habitat or Community Type:**

- 1. Coastal Plain Pond
- 2. Lacustrine, lake

**Habitat or Community Type Trend in New York:**

Declining       Stable       Increasing       Unknown

Time frame of decline/increase: \_\_\_\_\_

Habitat Specialist?                       Yes       No

Indicator Species?                       Yes       No

**Habitat Discussion:**

*N. integricollis* inhabit ponds and lakes with dense vegetation, usually sedges or grasses, at the shore or throughout the water body (Paulson 2011). The two recent records for New York are from the vicinity of coastal plain ponds while habitat information is not available for the historical records (Paul Novak, pers. comm.).

**V. New York Species Demographics and Life History**

- Breeder in New York**
  - Summer Resident**
  - Winter Resident**
  - Anadromous**
- Non-breeder in New York**
  - Summer Resident**
  - Winter Resident**
  - Catadromous**
- Migratory only**
- Unknown**

## **Species Demographics and Life History Discussion:**

*Nehalennia integricollis* measure about an inch long and are one of the tiniest odonates in New York (Lam 2004). They spend most of their time in dense vegetation. Pairs fly in tandem for oviposition in floating vegetation and grass and sedge stems at water level. While egg-laying, the female holds her abdomen between wings.

NYSDDS and pre-NYSDDS records indicate a flight season on Long Island between 27 June and 27 July (Donnelly 1999, New York Natural Heritage Program 2010), but this is from a very small number of records. The flight season appears longer in other states for which more records are available. In New Jersey, individuals have been documented from 8 June through 11 August (Bangma and Barlow 2010).

## **VI. Threats:**

Any activity which might lead to water contamination or the alteration of natural hydrology could impact *N. integricollis* populations (Novak 2006). Such threats might include roadway and agricultural run-off, peat mining, ditching and filling, eutrophication, changes in dissolved oxygen content, and development near their habitats (Novak 2006). Groundwater withdrawal is a potential threat in lentic habitats, as are invasive plant species replacing native plants required for oviposition (New York Natural Heritage Program 2010). Both emergence rates and/or species ranges may shift for odonate species as a result of climate change (Kalkman *et al.* 2008).

### **Are there regulatory mechanisms that protect the species or its habitat in New York?**

**No**       **Unknown**

**Yes**

Article 15 of Environmental Conservation Law provides protection of rivers, streams, lakes and ponds through the Protection of Waters Program. The Freshwater Wetlands Act provides protection for wetlands greater than 12.4 acres in size under Article 24 of the NYS Conservation Law.

### **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 reduce roadway and agricultural run-off, eutrophication, development of upland borders and resulting increased groundwater withdrawal, and ditching and filling activities should be considered when managing for this species (NYS DEC 2005).

Further research is needed to define the distribution and population size of *N. integricollis*. In addition, research is required to understand the habitat requirements and threats to this species, and to create appropriate management guidelines for its persistence in known locations (NYS DEC 2005). Suitable habitat should be checked on Long Island during the known flight season and threats should be assessed at known sites (White *et al.* 2010).

Conservation actions following IUCN taxonomy are categorized in the table.

Conservation Actions	
Action Category	Action
Education and Awareness	Training
Education and Awareness	Awareness & Communications

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for odonates of bogs, fens, and ponds, and for the southern sprite in particular.

**Habitat monitoring:**

— Support and encourage habitat monitoring efforts that would complete the baseline assessment of habitat quality and threats.

**Habitat research:**

— Support and encourage research projects that will help define preferred habitat in order to guide future monitoring, restoration and habitat protection efforts.

**New regulation:**

— Recommendations for official state endangered, threatened, and special concern listing are an anticipated result of the statewide inventory. It is expected that at least a few species will be recommended for listing and officially adding these species to the list would constitute a specific action.

**Population monitoring:**

— Conduct surveys to obtain repeatable, relative abundance estimates for these species at known sites and newly discovered sites where access permission to conduct surveys is obtained (as indicated in the State Wildlife Grant Odonate Inventory Project).

**Other action:**

— Most of these species are known from fewer than 10 locations in the state, but new populations undoubtedly remain to be discovered. A currently approved, but not yet begun State Wildlife Grant Statewide Odonate Inventory Project will utilize volunteers, Natural Heritage Program and other staff to conduct surveys for these species at potential sites throughout the state.

**VII. References**

