

Species Status Assessment

Common Name: Scarlet bluet

Date Updated: March 2025

Scientific Name: *Enallagma pictum* **Minor Edits By:** NYSDEC Wildlife Section

Class: Insecta

Family: Coenagrionidae

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

The scarlet bluet (*Enallagma pictum*) has a small range which extends only from New Jersey, New York, Connecticut, Rhode Island, Massachusetts, New Hampshire, and southern Maine. In New York, there are 10 known locations in Suffolk County (New York Natural Heritage Program 2010). These locations were investigated as part of a special NYSDDS effort but due to the species' Threatened status in the state, the locations were not listed in the final report (New York Natural Heritage Program 2010).

E. pictum is found at acidic, sandy, coastal plain ponds with water lillies (Nikula *et al.* 2003, Lam 2004). Preferred habitat also typically has bayonet rush (*Juncus militaris*) along the shoreline (Gibbons *et al.* 2002, New York Natural Heritage Program 2010). In Cape Cod, Gibbons *et al.* (2002) found that *E. pictum* occurs mainly in habitats with white water lily (*Nymphaea odorata*). Most known habitats in New York include water lillies, pickerelweed, shorelines of emergent grasses, rushes, or sedges, or boggy margins (New York Natural Heritage Program 2010).

In New York, *E. pictum* has been confirmed in ten locations in Suffolk County (New York Natural Heritage Program 2011). In addition to a restricted range, there are a number of threats to these locations. New locations in recent years are likely due to increased survey effort rather than a population increase or expansion.

DEC is not aware of any additional data or new information on population trends or threats to this species since the last SWAP revision in 2015 to indicate a need for change in SGCN status.

I. Status

a. Current legal protected Status

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

ii. **New York:** Threatened

b. Natural Heritage Program

i. **Global:** G3

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

Other Ranks:

-NYS 2025 SGCN: HPSGCN

-IUCN Red List:

-Northeast Regional Rank (White et al.2015):

Status Discussion:

White *et al.* (2010) calculated a revised draft S-rank of S2 from S1.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Unknown	Unknown			-
Northeastern US	Yes	Unknown	Stable			-
New York	Yes	Unknown	Stable	2005-2009		Yes
Connecticut	Yes	Unknown	Unknown		SC	Yes
Massachusetts	Yes	Unknown	Unknown		T	Yes
New Jersey	Yes	Unknown	Unknown			Yes
Pennsylvania	No	-	-			-
Vermont	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 New York State Dragonfly and Damselfly Survey (NYSDDS) was conducted from 2005-2009.

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

Trend information for this species is unknown.

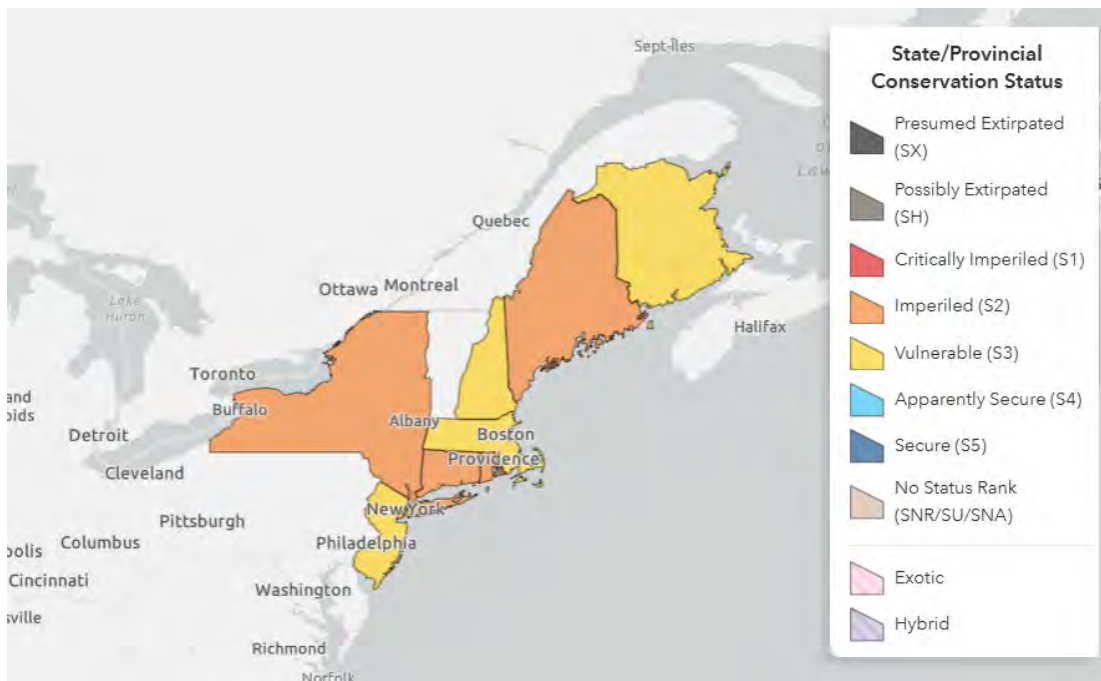


Figure 1. Conservation status of *Enallagma pictum* in North America (NatureServe 2025).

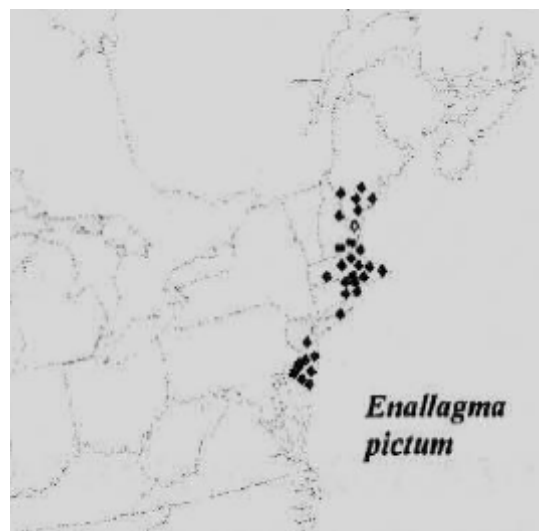


Figure 2. Distribution of the scarlet bluet in the United States (Donnelly 2004).

III. New York Rarity (provide map, numbers, and percent of state occupied)



Figure 3. Occurrence records of the scarlet bluet in New York (White *et al.* 2010).

Details of historic and current occurrence:

From The New York Dragonfly and Damselfly Survey 2005-2009. Number of occurrences obtained from map by White *et al.* 2010.

New York’s Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Core	

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):

- a. Estuarine, acidic coastal plain pond, sandy bottom
- b.

Habitat or Community Type Trend in New York

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

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:

E. pictum is found at acidic, sandy, coastal plain ponds with water lillies (Nikula *et al.* 2003, Lam 2004). Preferred habitat also typically has bayonet rush (*Juncus militaris*) along the shoreline (Gibbons *et al.* 2002, New York Natural Heritage Program 2010). In Cape Cod, Gibbons *et al.* (2002) found that *E. pictum* occurs mainly in habitats with white water lily (*Nymphaea odorata*). Most known habitats in New York include water lillies, pickerelweed, shorelines of emergent grasses, rushes, or sedges, or boggy margins (New York Natural Heritage Program 2010).

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/Catadromous?
Yes	-	-	Yes	-	-

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):

E. pictum is active throughout the day. Males are often found in the shade of leaning sedge stems during hot midday. Most perch on sedge stems but also on lily pads. They often form tandem pairs in the afternoon. Nymphs feed on aquatic invertebrate; adults feed on flying insects (Paulson 2011).

The species has a flight season from mid-May through mid-September. Most records were documented in New York in mid-July before and during the NYDDS and it is known to fly in the state from 17 June through 27 July (Donnelly 1999, NYNHP 2010). Flight dates in New Jersey are longer, from mid-May to mid-September and at their northern range extent in Maine, scarlet bluets are known to fly from early July to late August (Brunelle and Maynadier 2005, Bangma and Barlow 2010).

VI. Threats (from NY 2015 SWAP or newly described):

Threats to *E. pictum* at Long Island sites include residential development and the resulting groundwater withdrawal, as well as invasive species such as *Phragmites* on pond shores which crowd out native emergent rushes and floating plants that are required for successful reproduction (New York Natural Heritage Program 2010). According to the Massachusetts NHESP (2003), maintaining natural habitats in the upland areas surrounding the ponds is essential to this species' conservation, as newly emerged adults use these areas as refuge for maturing, roosting, and feeding.

Any activity which might lead to water contamination or the alteration of natural hydrology could impact *E. pictum* populations (NYS DEC 2005). Such threats might include roadway and agricultural run-off, ditching and filling, eutrophication and nutrient loading from fertilizers, herbicides, and septic systems, changes in dissolved oxygen content, and development near their habitats (NYS DEC 2005). Groundwater withdrawal is a potential threat in lentic habitats on Long Island, as are invasive plant species replacing native plants like white water lily, which are essential to *E. pictum* for oviposition (New York Natural Heritage Program 2011). The introduction of grass carp is also a threat to coastal plain ponds on Long Island. In addition, both emergence rates and/or species ranges may shift for odonate species as a result of climate change (Kalkman *et al.* 2008).

Threat Level 1	Threat Level 2	Threat Level 3	Spatial Extent	Severity	Immediacy	Trend	Certainty
1. Residential and Commercial	1.1 Housing & Urban Areas	(habitat loss from lakeside development)	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
6. Human Intrusions & Disturbance	6.1 Recreational Activities	6.1.1 Motor vehicles					
2. Agriculture & Aquaculture	7.2 Dams & Water Management/Use	(alteration of natural hydrology)	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
9. Pollution	9.1 Domestic & Urban Wastewater	9.1.1 Domestic wastewater (lawn care)	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	8.1.3 Aquatic animals (grass carp)	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	8.1.4 Aquatic plants (Phragmites)	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.

Table 1. Threats to *Enallagma pictum*.

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

Yes: **X** No: _____ Unknown: _____

If yes, describe mechanism and whether adequate to protect species/habitat:

The scarlet bluet is listed as a threatened species in New York and is protected by Environmental Conservation Law (ECL) section 11-0535 and the New York Code of Rules and Regulations (6 NYCRR Part 182). A permit is required for any proposed project that may result in a take of a species listed as Threatened or Endangered, including, but not limited to, actions that may kill or harm individual animals or result in the adverse modification, degradation or destruction of habitat occupied by the listed species.

Article 15 of Environmental Conservation Law provides protection of rivers, streams, lakes and ponds through the Protection of Waters Program. The Tidal Wetlands Act provides protection for all tidal wetlands under Article 25 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 to ponds and resulting increased groundwater withdrawal, invasive plant and animal species, trampling of vegetation from recreation, and ditching and filling activities should be considered when managing for this species (NYS DEC 2005, White *et al.* 2010). Maintenance or restoration of native shoreline vegetation and surrounding upland habitat will benefit this species, as females require native emergent vegetation for successful reproduction and spend much of their time in upland habitats away from the breeding pond (Gibbons *et al.* 2002, White *et al.* 2010). Many of the known sites on Long Island are located within or on preserves or protected lands, but the above listed threats might be present on adjacent lands.

Further monitoring is needed to define the extent of populations of *E. pictum* in New York. In addition, research is required to understand the habitat requirements and threats to this species. A recovery plan for the species should be developed and appropriate management guidelines should be adopted for its persistence in known locations (NYS DEC 2005).

Action Category	Action	Description
A.1 Direct Habitat Management	A.1.0.0.0 Direct habitat management	Site/Area management

Action Category	Action	Description
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

Table 2. Recommended conservation actions for *Enallagma pictum*.

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for odonates of coastal lakes and ponds, and in particular for the scarlet bluet.

Educational signs:

- _____ Educate the public not to introduce fish into historically fishless coastal plain ponds or new species of fish into coastal plain ponds where the species did not historically occur.

Habitat management:

- _____ Reduce or eliminate detrimental ATV use in and around coastal plain ponds supporting state threatened damselflies.
- _____ Where possible, remove introduced fish or other aquatic animals that may be detrimental to odonate populations through excessive predation on larvae.
- _____ Where possible, remove invasive, non-native plants from ponds and adjacent uplands that may significantly impact larval and adult odonate survival and reproduction.

Habitat monitoring:

- _____ Identify existing and potential locations of public water supply wells and ensure that present and future water withdrawals will not alter the normal range of variation of ground and pond water elevation.
- _____ Support and encourage habitat monitoring efforts that would complete the baseline assessment of habitat quality and threats.
- _____ Identify existing and potential sources of invasive species (including fish).
- _____ Compile existing baseline data on habitat quality and threats. Include pond water quality (pH, conductivity, nutrients, toxins), pond hydrographs (fluctuations in water level with time), presence of fish, presence of characteristic native plants and invasive species, history of ATV use, history of pesticide spraying for mosquito control, extent of upland habitat around each pond.

Habitat research:

- _____ Support and encourage research that would increase knowledge of the impact of poorly known threats to odonates (e.g. water quality degradation, atmospheric deposition, invasive species, pesticide spraying).
- _____ Support and encourage research projects that will help define preferred habitat in order to guide future monitoring, restoration and habitat protection efforts. Include both pond and adjacent upland habitats.

Habitat restoration:

- _____ Wherever possible, fill in non-natural , deep water-retaining holes in coastal plain ponds.
- _____ Identify existing and potential sources of nutrients, toxins, and other chemicals originating from human activities and reduce/eliminate/prevent these where possible.

Modify regulation:

- _____ Ensure that aerial pesticide spraying does not occur over or in close proximity to ponds and adjacent uplands that support these state listed damselflies during the period of adult emergence and flight.
- _____ Modify regulations to provide expanded protection for uplands adjacent to coastal plain ponds that support state threatened damselflies.

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).

Statewide baseline survey:

- _____ Conduct surveys for these species at potential sites throughout the state (expected range for these species is Long Island and Lower New England ecoregion, possibly Westchester County only). These species are known from fewer than 10 locations in the state, but new populations probably remain to be discovered for all of the species. 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 these surveys.

VII. References

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