Species Status Assessment

Class: Insecta
Family: Coenagrionidae
Scientific Name: Enallagma pictum
Common Name: Scarlet bluet

Species synopsis:

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.

I. Status

a. Current and Legal Protected Status

i. Federal Not listed Candidate? No

ii. New York Threatened; SGCN
b. Natural Heritage Program Rank
   i. Global
      
   ii. New York
      
      Other Rank:
      IUCN Red List—Near threatened

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

II. Abundance and Distribution Trends

a. North America
   i. Abundance
      ___declining  ___increasing  ___stable  X unknown
   ii. Distribution:
      ___declining  ___increasing  ___stable  X unknown

   Time frame considered: ___ Last assessment 1998

b. Regional
   i. Abundance
      ___declining  ___increasing  ___stable  X unknown
   ii. Distribution:
      ___declining  ___increasing  X stable  ___ unknown

Regional Unit Considered: ___ Northeast
Time Frame Considered: ___ Last assessment 1998
c. Adjacent States and Provinces

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<th>State</th>
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<th>Distribution Status</th>
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</table>
Monitoring in New York.

The New York State Dragonfly and Damselfly Survey (NYSDDS) was conducted from 2005-2009.

Trends Discussion:

Trend information for this species is unknown.
Figure 1. Conservation status of the scarlet bluet in North America (NatureServe2012).

Figure 2. Distribution of the scarlet bluet in the United States (Donnelly 2004).
**Figure 3.** Occurrence records of the scarlet bluet in New York (White et al. 2010).

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

<table>
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<th>Historic</th>
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<td>___________</td>
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<tr>
<td>prior to 1990</td>
<td>___________</td>
<td>___________</td>
<td>__________</td>
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</tbody>
</table>

**Details of historic occurrence:**

There are no historical occurrence records for this species.

<table>
<thead>
<tr>
<th>Current</th>
<th># of Animals</th>
<th># of Locations</th>
<th>% of State</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>___________</td>
<td>15</td>
<td>5%</td>
</tr>
</tbody>
</table>

**Details of current occurrence:**


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

**Distribution** (percent of NY where species occurs)  **Abundance** (within NY distribution)

- X 0-5%  __ abundant
- ___ 6-10%  ___ common
- ___ 11-25%  X fairly common
classification of New York Range

___ Core
___ Peripheral
___ Disjunct

Distance to core population:
___ N/A

NY's Contribution to North American range

___ 0-5%
___ 6-10%
___ 11-25%
___ 26-50%
___ >50%

___ uncommon
___ rare
Rarity Discussion:

Population estimates have been made in recent years as part of a special effort during the New York Dragonfly and Damselfly Survey from 2005-2010 (White et al. 2010). Of the ten sites where E. pictum is known to currently occur, eight sites are estimated to have good or excellent viability (New York Natural Heritage Program 2011). Some sites are in close proximity to each other, and the ten sites may be grouped into five pond complexes. Between 10-100 individuals were estimated in at least one pond from each of these complexes since 2005. Three of the complexes contained at least one pond with over 100 individuals, and there was one pond with over 1,000 individuals estimated in recent years (New York Natural Heritage Program 2011). Recent information on the species prior to 2005 is very limited, with records going back to 1989 at three of the sites. New locations in recent years are likely due to increased survey effort rather than a population increase or expansion and may serve as baseline information to look at future trends.

Recent observations since 1989 have been noted at Suffolk County sites and the species had been observed at one additional historical location prior to 1913 (New York Natural Heritage Program 2011). Observations are fairly recent and long-term trends are unclear.

IV. Primary Habitat or Community Type:

1. Estuarine, acidic coastal plain pond, sandy bottom

Habitat or Community Type Trend in New York:

_X_ Declining   ___Stable   ___ Increasing   ___Unknown

Time frame of decline/increase: _________________________________

Habitat Specialist?   _X_ Yes   _____ No

Indicator Species?   _____ Yes   _X_ No

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 militarus) 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. New York Species Demographics and Life History

_X_ Breeder in New York

_X_ Summer Resident

___ Winter Resident

___ Anadromous

___ Non-breeder in New York

___ Summer Resident

___ Winter Resident

___ Catadromous

___ Migratory only

___ Unknown

Species Demographics and Life History Discussion:

_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:

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 plans 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).

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

 ___ No    ___ Unknown

 ___ X ___ Yes

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).

Conservation actions following IUCN taxonomy are categorized in the table.

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<tr>
<th>Conservation Actions</th>
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<tbody>
<tr>
<td><strong>Action Category</strong></td>
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<td>Land/Water Management</td>
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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**


Date last revised: February 4, 2014