

## Appendix A: Insects

### Ringed Emerald

*Somatochlora albicincta*

Federal Listing	N/A
State Listing	
Global Rank	G5
State Rank	S2
Regional Status	
Moderate	



Photo by Pamela Hunt

#### Justification (Reason for Concern in NH)

In New Hampshire, the Ringed Emerald occurs only at small coldwater ponds above 1500'. Although this distribution remains stable, it is at the extreme southern of the species range in the Northeast, and may be vulnerable to both climate change and non-native species. Considered "moderate" vulnerability in White et al. 2013.

#### Distribution

Found across the boreal regions of North America from Alaska to Newfoundland, and south in western mountains to northern California and western Montana. In the northeastern U.S. known from a single (historical) site in NY, a handful of sites in northern Vermont and northwest Maine, and 10-12 sites in the White Mountains of NH.

#### Habitat

All NH sites are small high-elevation ponds ranging from 1750' to 5000', with an average of 3000'. All ponds are located in rock basins and are surrounded by high elevation coniferous forest or alpine tundra, depending on elevation. Ponds may have a limited peat margin, but this is not usually a significant component of this species' habitat.

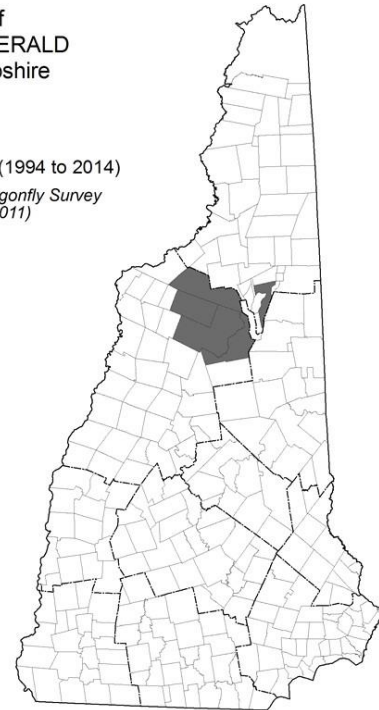
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### NH Wildlife Action Plan Habitats

- Lakes and Ponds with Coldwater Habitat
- High Elevation Spruce-Fir Forest
- Alpine
- Northern Hardwood-Conifer Forest

### Distribution of RINGED EMERALD in New Hampshire

■ Current (1994 to 2014)  
*Includes NH Dragonfly Survey records (1987-2011)*



**Distribution Map**

### Current Species and Habitat Condition in New Hampshire

Population sizes for Ringed Emerald among known sites are highly variable, although the species can be abundant at higher elevations (e.g., Presidential Range). There is limited information on changes in abundance and/or distribution in NH or for most of its larger range. As in NH, it appears relatively widespread and secure in the highlands of northern and western Maine (Brunelle and DeMaynadier 2005). Surveys in NY failed to locate the species 2005-2009 (White et al. 2010), although coverage was limited at the known historic site in the Adirondacks.

### Population Management Status

Not managed

### Regulatory Protection (for explanations, see Appendix I)

- Fill and Dredge in Wetlands - NHDES
- Comprehensive Shoreland Protection Act - NHDES

### Quality of Habitat

Unknown

### Habitat Protection Status

Most of the NH sites where the species occurs are within the White Mountain National Forest.

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### Habitat Management Status

Habitat management has not been implemented for this species.

### Threats to this Species or Habitat in NH

*Threat rankings were calculated by groups of taxonomic or habitat experts using a multistep process (details in Chapter 4). Each threat was ranked for these factors: Spatial Extent, Severity, Immediacy, Certainty, and Reversibility (ability to address the threat). These combined scores produced one overall threat score. Only threats that received a "medium" or "high" score have accompanying text in this profile. Threats that have a low spatial extent, are unlikely to occur in the next ten years, or there is uncertainty in the data will be ranked lower due to these factors.*

There were no threats ranked high or medium for this species.

### List of Lower Ranking Threats:

Habitat degradation and disturbance from acid deposition  
Habitat impacts from stocking fish in formerly "fishless" ponds  
Habitat impacts from invasive or introduced species  
Species disturbance from thermal stress

### Actions to benefit this Species or Habitat in NH

#### Ringed Emerald Surveys

**Objective:**

Maintain up-to-date information on the distribution and abundance of this species in NH

**General Strategy:**

Experienced observers should be aware of the possibility of this species when in appropriate habitat, and report it if detected.

**Political Location:**

Carroll County, Coos County, Grafton County

**Watershed Location:**

#### Ringed Emerald threat research

**Objective:**

Research on specific habitat needs and response to introduced predators or competitors would provide better information with which to assess those threats. Sensitivity to climate change (primarily warming temperatures) may also be of value.

**General Strategy:**

**Political Location:**

**Watershed Location:**

## References, Data Sources and Authors

### Data Sources

NH Dragonfly Survey (Hunt 2012); Hunt unpublished data

### Data Quality

Because the habitats preferred by this species are often difficult to access, it is not frequently reported except by people actually looking for it. And even at such sites, its behavior makes it difficult to capture. The more common and very similar *S. cingulata* occurs in the same habitat, and may be mistaken for this species at a distance. As a result, the Ringed Emerald is probably more widely distributed than current data indicate.

### 2015 Authors:

Pamela Hunt, NHA

### 2005 Authors:

## Literature

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