



Insects

## Ringed Boghaunter

*Williamsonia lintneri*

### Priority 1 Species of Greatest Conservation Need (SGCN)

**Class:** Insects (*Insecta*)

**Order:** Dragonflies And Damselflies (*Odonata*)

**Family:** Emeralds (*Corduliidae*)



### General comments:

The Ringed Boghaunter is a small, early-season dragonfly in the Emerald family (Cordulidae). One of Maine's few globally rare dragonflies, this species is only known from a handful of pocket bogs and acidic pools in York and Oxford Counties. Listed as state Threatened, the habitat for this dragonfly is vulnerable to development, intensive forestry, pollution, pesticides, and climate change.

### Species Conservation Range Maps:

Town Map: [Williamsonia lintneri\\_Towns.pdf](#)

Subwatershed Map: [Williamsonia lintneri\\_HUC12.pdf](#)

### SGCN Priority Ranking - Designation Criteria:

|                                             |                                                                                                                                                                                                                          |                                |  |
|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--|
| <b>Risk of Extirpation:</b>                 | <b>Maine Status:</b><br>Threatened                                                                                                                                                                                       | <b>Federal Status:</b><br>None |  |
| <b>Regional Endemic:</b>                    | <i>Williamsonia lintneri</i> 's global geographic range is at least 90% contained within the area defined by USFWS Region 5, the Canadian Maritime Provinces, and southeastern Quebec (south of the St. Lawrence River). |                                |  |
| <b>High Regional Conservation Priority:</b> | <b>Northeast Regional Synthesis (RSGCN):</b><br>Responsibility: High, Concern: Very High<br><br><b>NatureServe:</b><br>Global Rank: G3 State Rank: S1                                                                    |                                |  |

### Habitat Associations:

**Formation:** Freshwater Aquatic

**Macrogroup:** Lentic

★ **Primary Habitat**

**Habitat System:** Vernal Pool  
where submerged *Sphagnum* mats present

**Formation:** Northeastern Wetland Forest

**Macrogroup:** Central Hardwood Swamp Forest

★ **Primary Habitat**

**Habitat System:** North-Central Appalachian Acidic Swamp  
where submerged *Sphagnum* mats present

Ringed Boghaunter *Williamsonia lintneri*

## Priority 1 SGCN



Formation: Peatland

Macrogroup: North American Boreal &amp; Subboreal Bog &amp; Acidic Fen

|                   |                                                                                                                               |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------|
| ★ Primary Habitat | <b>Habitat System:</b> Eastern Boreal-Sub-Boreal Acidic Basin Fen<br><i>where submerged Sphagnum mats present</i>             |
| ★ Primary Habitat | <b>Habitat System:</b> North-Central Interior and Appalachian Acidic Peatland<br><i>where submerged Sphagnum mats present</i> |

## Threats

| Threat Priority Level based on Severity and Actionability |                            | Moderate Severity |             | High Severity |             |
|-----------------------------------------------------------|----------------------------|-------------------|-------------|---------------|-------------|
|                                                           | Highly Actionable          |                   | Medium-High |               | High        |
|                                                           | Moderately Actionable      |                   | Medium      |               | Medium-High |
|                                                           | Actionable with Difficulty |                   | Low         |               | Low         |

## IUCN Level 1 Threat    Other Options

## IUCN Level 2 Threat: Resource Needs

Severity: High Severity

Actionability: Moderately Actionable

**Notes:** MDIFW lacks funding and staff to implement conservation actions for SGCN invertebrates (e.g., surveys and monitoring, research, habitat protection, outreach and education)

## IUCN Level 1 Threat    Residential and Commercial Development

## IUCN Level 2 Threat: Housing and Urban Areas

Severity: High Severity

Actionability: Moderately Actionable

**Notes:** Habitat loss and riparian zone degradation in an area of the state with relatively rapid development

## IUCN Level 1 Threat    Biological Resource Use

## IUCN Level 2 Threat: Logging and Wood Harvesting

Severity: Moderate Severity

Actionability: Moderately Actionable

**Notes:** intensive forestry in the shoreland zone could affect water quality and riparian habitat

Ringed Boghaunter *Williamsonia lintneri*

## Priority 1 SGCN



## IUCN Level 1 Threat    Other Options

## IUCN Level 2 Threat: Education &amp; Outreach

Severity: Moderate Severity

Actionability: Moderately Actionable

**Notes:** some threats and challenges can be minimized through enhanced public outreach and advocacy (e.g., pesticide use, [spp extra: illegal fish introduction], habitat management, improved stream crossings, awareness and appreciation)

## IUCN Level 2 Threat: Lack of knowledge

Severity: Moderate Severity

Actionability: Moderately Actionable

**Notes:** lack of comprehensive knowledge about distribution, status, habitat, life history

## IUCN Level 2 Threat: Other Threat

Severity: Moderate Severity

Actionability: Moderately Actionable

**Notes:** pesticides (e.g., homeowner, agricultural, forest and water quality management applications of insecticides and herbicides; herbicide spraying along roadsides and shorelines) can directly and indirectly affect nymphs and adults (e.g., decrease aquatic vegetation for egg-laying and emergence, decrease insect prey, direct and indirect toxicity)

## IUCN Level 1 Threat    Pollution

## IUCN Level 2 Threat: Agricultural and Forestry Effluents

Severity: Moderate Severity

Actionability: Moderately Actionable

**Notes:** in riparian buffer or aquatic system where run off/application of pesticides, fertilizers, and other chemicals can degrade water quality and impact nymphs

## IUCN Level 2 Threat: Domestic and Urban Waste Water

Severity: Moderate Severity

Actionability: Moderately Actionable

**Notes:** impacts to water quality from point and non-point sources

Ringed Boghaunter *Williamsonia lintneri*

## Priority 1 SGCN



## IUCN Level 1 Threat Residential and Commercial Development

## IUCN Level 2 Threat: Commercial and Industrial Areas

Severity: Moderate Severity

Actionability: Moderately Actionable

**Notes:** direct impacts of development (e.g., filling or draining) destroys habitat and causes mortality of aquatic larvae; loss of intact forest canopy in riparian habitat can degrade aquatic habitat integrity and water quality

## IUCN Level 1 Threat Climate Change and Severe Weather

## IUCN Level 2 Threat: Changes in Precipitation and Hydrological Regimes

Severity: Moderate Severity

Actionability: Actionable with Difficulty

**Notes:** Increased drought or evapotranspiration could compromise long hydroperiod wetlands

## IUCN Level 2 Threat: Habitat Shifting or Alteration

Severity: Moderate Severity

Actionability: Actionable with Difficulty

**Notes:** Increased drought or evapotranspiration could compromise long hydroperiod wetlands

## IUCN Level 1 Threat Transportation and Service Corridors

## IUCN Level 2 Threat: Roads and Railroads

Severity: Moderate Severity

Actionability: Actionable with Difficulty

**Notes:** Roadkill at certain causeways; in riparian zone where loss of intact forest canopy can degrade aquatic habitat integrity and water quality (e.g., run-off, road salt); in stream channel where construction, and poorly designed stream crossings can cause erosion of stream banks, sedimentation, water quality degradation, and direct mortality

## Species Level Conservation Actions:

None. Only species specific conservation actions that address high (red) or medium-high (orange) priority threats are summarized here.

## Conservation Actions Associated with the Palustrine Odonates Guild:

Ringed Boghaunter *Williamsonia lintneri*

## Priority 1 SGCN



| Conservation Action                                       | Category              | Biological Priority | Type      |
|-----------------------------------------------------------|-----------------------|---------------------|-----------|
| Conduct a statewide dragonfly/damselfly atlasing project. | Survey and Monitoring | high                | completed |

**Threat(s) Addressed By This Conservation Action**

- Education & Outreach
- Lack of knowledge

| Conservation Action                                                                         | Category | Biological Priority | Type |
|---------------------------------------------------------------------------------------------|----------|---------------------|------|
| Increase MDIFW staff capacity for survey, research, and conservation of SGCN invertebrates. | Policy   | critical            | new  |

**Threat(s) Addressed By This Conservation Action**

- Education & Outreach
- Lack of knowledge
- Resource Needs

| Conservation Action                                                                                                                                    | Category        | Biological Priority | Type     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------------------|----------|
| Develop/distribute outreach materials to raise public awareness and appreciation of freshwater aquatic insect ecology, threats and conservation needs. | Public Outreach | moderate            | on-going |

**Threat(s) Addressed By This Conservation Action**

- Education & Outreach

| Conservation Action                                                                               | Category              | Biological Priority | Type     |
|---------------------------------------------------------------------------------------------------|-----------------------|---------------------|----------|
| Conduct comprehensive statewide surveys to inform status, distribution, threats, and habitat use. | Survey and Monitoring | high                | on-going |

**Threat(s) Addressed By This Conservation Action**

- Lack of knowledge

| Conservation Action                                                                                                                                                                                                                                | Category           | Biological Priority | Type     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------------|----------|
| Develop/distribute Best Management Practices for landowners, land managers and conservation partners to avoid and minimize impacts of intensive land use activities (e.g., forestry, stream crossings, agriculture, development, hydro facilities) | Habitat Management | high                | on-going |

**Threat(s) Addressed By This Conservation Action**

- Roads and Railroads
- Housing and Urban Areas
- Commercial and Industrial Areas
- Domestic and Urban Waste Water
- Agricultural and Forestry Effluents
- Education & Outreach
- Logging and Wood Harvesting
- Annual and Perennial Non-timber crops

Ringed Boghaunter *Williamsonia lintneri*

## Priority 1 SGCN



| Conservation Action                                                                                                                                                                                                                                           | Category        | Biological Priority | Type     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------------------|----------|
| Develop/distribute guidelines and outreach materials to inform conservation partners, land use managers, and the general public about the impacts of pesticides on native insects and to promote the alternative use of Integrated Pest Management practices. | Public Outreach | moderate            | on-going |

**Threat(s) Addressed By This Conservation Action**

- Education & Outreach
- Other Threat

| Conservation Action                                                                                                                                                                             | Category | Biological Priority | Type     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------------------|----------|
| Analyze results of the Maine Dragonfly & Damselfly Survey, research and incorporate external Maine records (historical and modern), and produce a summary document and conservation assessment. | Research | high                | on-going |

**Threat(s) Addressed By This Conservation Action**

- Lack of knowledge

| Conservation Action                                                                                            | Category | Biological Priority | Type      |
|----------------------------------------------------------------------------------------------------------------|----------|---------------------|-----------|
| Update NatureServe S-ranks for all Maine Odonata based on results of the Maine Damselfly and Dragonfly Survey. | Research | high                | completed |

**Threat(s) Addressed By This Conservation Action**

- Lack of knowledge

**Broad Taxonomic Group Conservation Actions:**

Additional relevant conservation actions for this species are assigned within broader taxonomic groups in Maine's Wildlife Action Plan: Element 4.

**Habitat Based Conservation Actions:**

Additional conservation actions that may benefit habitat(s) associated with this species can be found in Maine's Wildlife Action Plan: Element 4. Click on the Habitat Grouping of interest to launch a habitat based report summarizing relevant conservation actions and associated SGCN.

*The Wildlife Action Plan was developed through a lengthy participatory process with state agencies, targeted conservation partners, and the general public. The Plan is non-regulatory. The species, threats, and voluntary conservation actions identified in the Plan complement, but do not replace, existing work*