



Natural Heritage & Endangered Species Program

Massachusetts Division of Fisheries & Wildlife
Route 135, Westborough, MA 01581
Telephone: (508) 389-6360/Fax: (508) 389-7891
www.nhesp.org

Ringed Boghaunter

Williamsonia lintneri

State Status: **Endangered**

Federal Status: **None**

DESCRIPTION: The Ringed Boghaunter (*Williamsonia lintneri*) is a small, delicately built dragonfly (order Odonata, suborder Anisoptera) in the family Corduliidae (the emeralds). It has a dark brown body, smoky blue-grey eyes, and pale orange-brown face and mouth parts. The most distinctive feature is a series of dull orange rings encircling all but the first and last of the ten abdominal segments. Females are similar to males, but have thicker abdomens and much shorter terminal appendages at the tip of the abdomen.

Ringed Boghaunters are about 1.5 inches (3.4 cm) in length, of which almost two thirds is abdomen. The wings are about one inch (2.2 cm) long and hyaline (transparent and colorless), except for a very small patch of amber at the base of the wings. Adults are most often seen along woodland trails near breeding sites on warm, sunny days, from late April to early June. However, their dark coloration and low flight habit makes them very inconspicuous, even in flight, and they are easily overlooked.

The nymphs, which were undescribed until 1970 (White and Raff 1970), are about 0.7 inch in length (17-18mm) when fully developed.

SIMILAR SPECIES: The genus *Williamsonia* comprises just two species, both found only in northeastern North America. The Ebony Boghaunter (*W. fletcheri*), is very similar in appearance, occupies similar habitats, and shares many of the same behavioral traits. However, the Ebony Boghaunter flies slightly later in the season (mid-May through mid-June), the male has bright green eyes when mature (the female has grey eyes), and the Ebony Boghaunter has only one or two obvious rings at the base of the abdomen; the rest of the abdomen in dark. The male Frosted Whiteface (*Leucorrhinia frigida*) is also very dark and similar in size, but has a white face and a frosty white area at the base of the abdomen. The Hudsonian Whiteface (*Leucorrhinia hudsonica*) also flies early in the season, occupies the same habitat, shares the tendency to alight on roads and paths near wooded areas, and is much more abundant. It is similar in size, but is more colorful



with red, orange, or yellow on the thorax, and abdominal markings which are triangular as opposed to ring-like in the Ringed Boghaunter. Additionally, the face of the Hudsonian Whiteface is white instead of orange-brown. Two other dragonflies, the Common Baskettail (*Epitheca cynosura*) and Uhler's Sundragon (*Helocordulia uhleri*), both have flight seasons that overlap the Ringed Boghaunter's and have yellow-orange abdominal markings, but they are larger than Ringed Boghaunters, do not have ringed abdominal markings, usually have dark markings at the base of the wings, and rarely perch on the ground or tree trunks.

HABITAT: The Ringed Boghaunter is found primarily in acidic sedge fens and sphagnum bogs, with soupy sphagnum pools or troughs, surrounded by woodlands. However, the specific habitat requirements of the Ringed Boghaunter are not well understood, as it seems to be absent from many apparently appropriate sites. The

RINGED BOGHAUNTER FLIGHT PERIOD

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Please allow the Natural Heritage & Endangered Species Program to continue to conserve the biodiversity of Massachusetts with a contribution for 'endangered wildlife conservation' on your state income tax form as these donations comprise a significant portion of our operating budget.

females oviposit and the larvae develop in shallow pools, 6 to 12 inches (15 to 30 cm) in depth, among sphagnum pools or sedge tussocks. These bog mats are suitable as habitat only if they possess open pools and are not choked with heaths. An important requirement for suitable habitat is the presence of surrounding woodlands, which are used as resting places and often as mating sites. All known breeding sites have at least some sphagnum (*Sphagnum* spp.). Other plants often associated with Ringed Boghaunter habitats include three-way sedge (*Dulichium arundinaceum*), highbush blueberry (*Vaccinium corymbosum*), sheep laurel (*Kalmia angustifolia*), leatherleaf (*Chamaedaphne calyculata*), and Atlantic white cedar (*Chamaecyparis thyoides*). Many sites inhabited by Ringed Boghaunters are quite small (< 1 hectare).

LIFE HISTORY/BEHAVIOR: The nymphal stage of the Ringed Boghaunter is completely aquatic; the nymphs emerge from the water in April to transform into winged adults, which have a brief flight season extending only from late April or early May to early June. Because Ringed Boghaunters emerge from the water so early in the year (they are among the first dragonflies to appear), they spend much of their time basking in the warm sun. Adult Ringed Boghaunters are not believed to be territorial and spend most of their time in the woodlands, seeking out sunny openings through the forest canopy, where they alight on tree trunks, rocks, trails, and roads. They are not very wary, and will even land on light colored clothing. Their tendency to stay in the forest may reduce harassment and predation by birds and larger, more aggressive dragonfly species. Like all dragonflies, the Ringed Boghaunter is entirely predatory. The adults feed on small insects; the nymphs feed mostly on aquatic invertebrates.

RANGE: The Ringed Boghaunter is very local in distribution. The range extends from southwestern Maine west through southern New England into New York and New Jersey. Recently, the species has been discovered at sites in Wisconsin and Michigan – a significant westward extension of the known range. Most known sites for the species occur in a band from southern New Hampshire south through eastern Massachusetts into Rhode Island.

POPULATION STATUS IN MASSACHUSETTS: The Ringed Boghaunter is listed as an Endangered Species in Massachusetts. Ringed Boghaunters have been recorded from boggy habitats in several towns in central and eastern Massachusetts. Populations at most extant sites appear to be quite small.

MANAGEMENT RECOMMENDATIONS: The primary threat to the Ringed Boghaunter is habitat destruction through physical alteration or pollution. Much of its former habitat has been destroyed by urbanization; several historically documented populations in Massachusetts now appear to be extirpated. Artificial changes in water level and various forms of pollution, such as agricultural and road runoff, septic system failure, and insecticides are all potential dangers. The effects of pesticides on dragonflies are not well known, but spraying may be a significant threat to the Ringed Boghaunter. It is important to protect surrounding uplands, as they provide roosting, hunting, and breeding habitat.

REFERENCES:

- Biber, E. 2002. Habitat analysis of a rare dragonfly (*Williamsonia lintneri*) in Rhode Island. *Northeastern Naturalist* 9(3): 341-352.
- Carpenter, G. 1993. *Williamsonia lintneri*, a phantom of eastern bogs. *Argia* 5(3):2-4.
- Dunkle, S. W. 2000. *Dragonflies Through Binoculars*. Oxford University Press.
- Howe, R. Heber, Jr. 1923. *Williamsonia lintneri* (Hagen), its history and distribution. *Psyche* 30:222-225.
- Needham, J. G., M. J. Westfall, Jr., and M. L. May. 2000. *Dragonflies of North America*. Scientific Publishers.
- Nikula, B., J. L. Ryan, and M. R. Burne. 2007. *A Field Guide to the Dragonflies and Damselflies of Massachusetts*. Massachusetts Natural Heritage and Endangered Species Program.
- Soltesz, K. 1996. *Identification Keys to Northeastern Anisoptera Larvae*. Center for Conservation and Biodiversity, University of Connecticut.
- Walker, E. M. 1958. *The Odonata of Canada and Alaska*, Vol.II. University of Toronto Press.
- White, H. B., and R. A. Raff. 1970. The nymph of *Williamsonia lintneri* (Hagen) (Odonata: Corduliidae). *Psyche* 77:252-257.