

EXECUTIVE SUMMARY – Recovery Strategy for the Bogbean Buckmoth (*Hemileuca* sp.) in Ontario

Prepared by Angela Gradish and Melissa Tonge

The Bogbean Buckmoth (*Hemileuca* sp.) is a rare moth known to occur only in North America in New York State and near Ottawa in Ontario. In Ontario, it is classified as endangered by the Committee on the Status of Species at Risk in Ontario (COSSARO) due to its habitat specificity and extremely limited geographic range. It is currently found at two sites in southeast Ontario: Richmond Fen Wetland and White Lake Fen Wetland Complex. The actual area occupied by the species in Ontario is less than 3 square kilometers and is thought to support approximately 3,000 adult Bogbean Buckmoths.

Adults are medium to large black moths, with wide, white wing bands with wavy or scalloped outer edges, each containing a small discal (circular) spot. There is marked sexual dimorphism with females being larger than males. The species is restricted to open, calcareous, low shrub fens containing large amounts of Bogbean (*Menyanthes trifoliata*). This habitat requirement is unique to this species as most buckmoths are found in very dry habitats (Legge et al. 1996).

Ontario populations of Bogbean Buckmoth may be threatened by habitat changes including water level fluctuations, land development, invasive plant species, insecticide applications and long-term loss of wetland habitat from climate change. Plant species, such as European Common Reed (*Phragmites australis* spp. *australis*), Glossy Buckthorn (*Frangula alnus*) and Narrow-leaved Cattail (*Typha angustifolia*) can invade and crowd open fens and outcompete Bogbean Buckmoth host plants. Human induced water level fluctuations may threaten populations at White Lake. In addition, insecticide applications for Gypsy Moth (*Lymantria dispar*) are considered a potential threat depending on spray timing and concentration (NatureServe 2010).

The recovery goal is to sustain current populations and distributions of Bogbean Buckmoth at extant locations and to expand populations into suitable, but currently unoccupied habitat within its current range in Ontario. To accomplish this, several recovery objectives have been identified.

1. Conduct a quantitative assessment to determine what constitutes a sustainable and secure population in Ontario.
2. Fill knowledge gaps on taxonomy, ecology, distribution, behaviour, population dynamics, mortality factors and habitat use in the species' Ontario range.
3. Reduce or mitigate threats on Bogbean Buckmoth populations.
4. Increase public awareness and understanding of Bogbean Buckmoth populations.

5. If it is determined that the species was historically widespread, then consider the introduction of Bogbean Buckmoth populations into areas of continuous, unoccupied but otherwise suitable habitat, where feasible.

Considering the Bogbean Buckmoth's limited geographic range, it is recommended that the area prescribed as regulated habitat for this species include all occupied sites. In Ontario, this includes the Richmond Fen Wetland and White Lake Fen Wetland Complex. Both of these sites are calcareous fens that support large populations of the Bogbean (*Menyanthes trifoliata*).

The area prescribed as habitat at each of these sites should include the extent of the fen vegetation, adjoining wetland complexes and 120 metres beyond them to protect the structure and function of the fen. The 120-metre distance is a historically used set-back for resource protection in Ontario (Ontario 1992) and was chosen because developments within 120 metres of a wetland have a reasonable probability of affecting the ecological functions of the wetlands which they surround (OMNR 2010). In addition, if new locations for the Bogbean Buckmoth are discovered or the species is re-introduced, then these areas should also be prescribed as habitat in the regulation.