

Species: Fingered Lemmeria Moth (*Lemmeria digitalis*)

Global Rank: G4

State Rank: S2S4

State Wildlife Action Plan: High-level Concern Species - Responsibility Species

Climate Change Vulnerability: Not Vulnerable/Presumed Stable

Confidence: Very High

Habitat:

The fingered lemmeria moth is encountered in wetland habitats in northwest Pennsylvania. The caterpillar food plant is unrecorded. The only species in the genus, fingered lemmeria moth is related to other noctuid genera that bore in the stems and rootstocks of various herbaceous plants, grasses, and sedges.

This species is currently known from the Allegheny National Forest and two additional counties in northwestern Pennsylvania. This moth appears to be very rare throughout its range. A number of recent records in Pennsylvania wetlands suggest that Pennsylvania may be a stronghold for fingered lemmeria moth and it was accordingly designated as a Pennsylvania Responsibility Species (Rawlins 2007).

Current Threats:

Threats cannot be fully assessed until more is known about the life history of this species. Typical threats for lepidoptera are habitat loss and fragmentation, fires, high deer populations and herbivory, and gypsy moth control.

Main factors Contributing to Vulnerability:

The main factors contributing to climate change vulnerability are large scale changes in the amount and seasonality of soil moisture, association with cooler and more northern localities in the commonwealth, and its likely dependence on one or a few host plants during the larval stage. Mitigating factors include the ability of adults to disperse relatively easily through suitable habitat; the species is not restricted to particularly specialized habitats, and it may be able to shift its range in response to climate change.

The regions of Pennsylvania where fingered lemmeria moth occurs have experienced lower than average precipitation variation in the past 50 years, making populations somewhat more vulnerable to future changes in precipitation.

The impacts of development of alternative energy sources are expected to be important especially as it relates to population dynamics and the health of populations of its food plant. Right-of-way infrastructure supporting alternate energy sources such as wind energy and natural gas are expected to further fragment many acres of land in forested habitats. There may be other factors that affect the distribution of this moth, and metapopulation dynamics are likely a component.

Dispersal and movements: NatureServe assigned fingered lemming moth to the 'Papaipema and related borers' moth group. Typically these are sedentary moths that are usually found within 10 m of food plant patches. Females appear to be more dispersive than males and tend to disperse after laying some eggs at the natal site. Female Papaipema and some related genera have been found to disperse at least several kilometers (NatureServe 2008).

References:

NatureServe. 2008. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.0. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: July 17, 2008).

Rawlins, J.E. 2007. Pennsylvania Comprehensive Wildlife Conservation Strategy Version 1.1, Appendix 5, Invertebrates. *In* Pennsylvania Game Commission. 2005. Pennsylvania Comprehensive Wildlife Conservation Strategy Version 1.0.