

SFI Biodiversity Species Fact Sheet

Flypoison Borer Moth (*Papaipema* sp. 1)

Pennsylvania Animal Species; State Rank: S2S3 ((imperiled, vulnerable) Global Rank: G2G3 (imperiled, vulnerable)

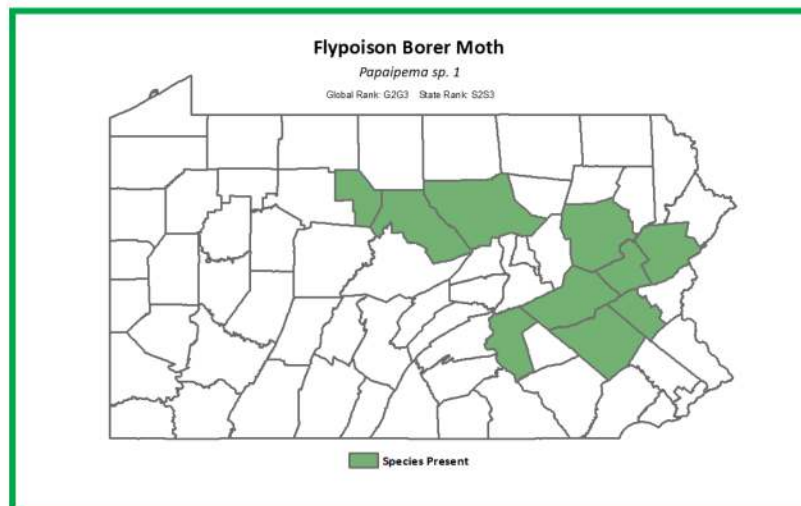
Identification

Flypoison borer moths have rusty brown forewings with white splotches. The hindwings are whitish-brown. The wingspan is about 1.35 – 1.75 inches, with a body that is about half that in length. These species are very similar in appearance to the chain fern borer moth. The most noticeable difference is that the wings have small vertical white stripes rather than white blotches. Also, the flypoison borer moth is limited to the widely spread larval food source the fly-poison plant, whereas the chain fern borer moth is found in wetlands where there are large patches of Virginia chain fern.



Biology-Natural History

This moth is limited to a single host plant for larval development, with larvae likely hatching in May and fully developed by end of July. Pupation occurs in August, and adults emerge in mid-September to lay eggs before dying. If the fly-poison plant is present, this species can use a range forest and woodland habitats. Although they are limited by the availability of their larval food plant, these moths are relatively good dispersers within their habitats. Deer do not feed on the fly-poison plant, at times, this leaves large populations of fly-poison plant intact, while other herbaceous plants or seedlings have been browsed. Subsequently, the moth has been able to maintain a stable, though range-limited population. A similar response to deer brows is seen in the chain fern borer moth.



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Distribution and Habitat

This moth is limited to nine Pennsylvania counties in the Pocono Plateau and is not currently found outside the state. Historically, there were populations in New Jersey and Virginia, but these are now locally extinct—although surveys are needed in Virginia as the host plant is common. There are 10 – 15 known populations in total, these are found in oak dominated forests but sometimes in pitch pine-scrub oak barrens and northern hardwoods. These populations are found on acidic soils which is favored by the host plant. Although geographically limited, these moths and their larvae can be abundant within a given location of occurrence.



Conservation Concerns

Spraying to control spongy moth during April-May when instars (young caterpillars) are emerging is a primary concern. Spongy moth sprays are often targeted in oak forests, the same type of forests that are inhabited by flypoison borer moths. These sprays often use diflubenzuron which is a broad-spectrum biocide that is toxic to several species of arthropods. This chemical control often remains on the foliage until leaf drop in the fall. *Bacillus thuringiensis* var *kurstaki* (Btk) is an organic insecticide that is also used to control spongy moth and other caterpillars, while this biological control doesn't persist in the environment as long as chemical controls it is also toxic to caterpillars of flypoison borer moth. Fire, whether natural or prescribed, is especially an issue from September through May when eggs are attached to the host plant. Habitat loss and fragmentation are also important threats.

Management Practices

Given the limited range, avoiding the use of chemical or biological controls on known flypoison borer moth habitat can be particularly effective. Connecting known populations through conservation corridors where the flypoison plant is found would improve genetic diversity and health. Avoiding the use of fire at known locations is also effective. If you find this moth, call DCNR at 717-787-3444.