NatureServe

HAWK MOTHS

In decline?

White-lined Sphinx
(*Hyles lineata*)
NatureServe Global Status:
Secure (G5)

Few studies have examined population trends in insect pollinators because they are difficult to monitor

Hawk moths are important pollinators of native plants, but we know little about their conservation status

A recent NatureServe study was the most comprehensive analysis to date of long-term population changes in a regional hawk moth fauna

The Importance of Pollinators

Bedstraw hawk moth
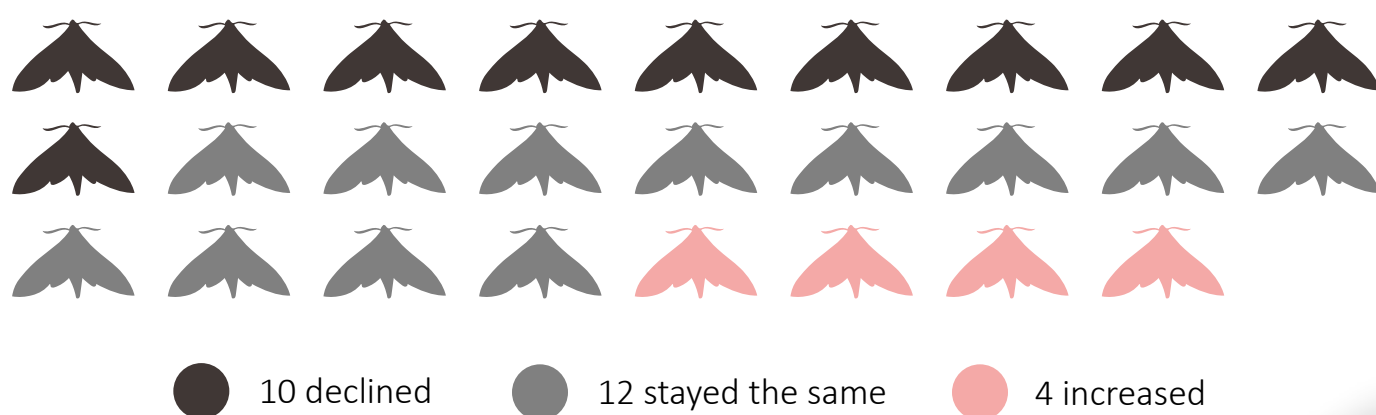(*Hyles gallii*)
NatureServe Global Status:
Secure (G5)

- Declines in many pollinator species have led to increased attention to the protection of these species that play critical roles in their ecosystems

- In many cases, there are no reasonable alternative pollination methods for crops. In 2009, native pollinators pollinated crops worth $3.44 billion in the US.
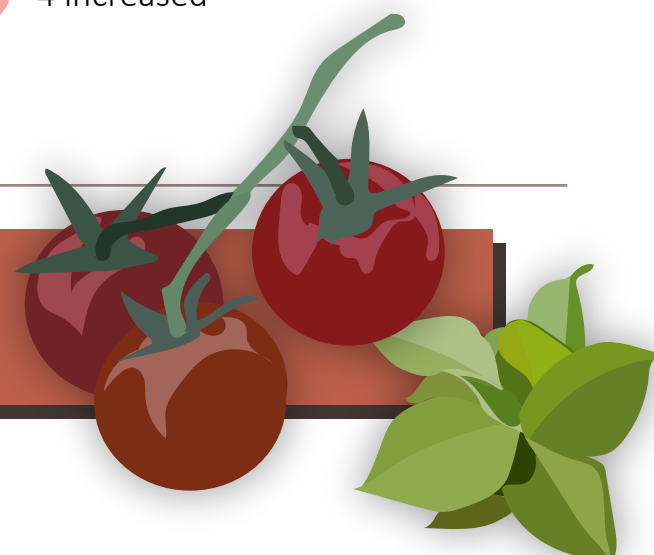
Hawk Moth Species in Decline

- Researchers used 112 years of records from museum and private collections to examine long-term trends in northeastern US populations of 26 species of hawk moths

Of the 26 species examined:

- 10 declined
- 12 stayed the same
- 4 increased

Reasons for Decline

- Two species reliant on tobacco and tomato farms declined, consistent with a 7-fold drop in the area planted in these crops

- Parasitoidism by the introduced fly, *Compsilura concinnata*, was linked to declines in several species

- Light pollution and changes in forest cover can also contribute to hawk moth declines, but were not addressed in this study

Hummingbird Clearwing
(*Hemaris thysbe*)
NatureServe Global Status:
Secure (G5)

What's Next

These results are cause for concern about the ecological integrity of the habitats where declining hawk moths once were plentiful: plants that depend on these species for pollination may decline, as may predators of the moths such as the Eastern Whip-poor-will. This study is just a first step in understanding the threats that face hawk moths. Determining how to manage those threats to reverse declines is the next challenge for researchers.

Young BE, Auer S, Ormes M, Rapacciuolo G, Schweitzer D, Sears N (2017) Are pollinating hawk moths declining in the Northeastern United States? An analysis of collection records. PLoS ONE 12(10): e0185683. https://doi.org/10.1371/journal.pone.0185683