

Asian Defoliator Moth Survey



Figure 1. Loaded trap in Southeast Alaska. No target species detected. (Juneau, AK 2022)

Survey History

The Alaska Department of Natural Resources, Division of Agriculture, in cooperation with USDA Animal and Plant Health Inspection Service, Plant Protection and Quarantine (APHIS-PPQ), conducts detection surveys for Spongy Moth (*Lymantria dispar*), Flighted Spongy Moth Complex (*Lymantria dispar asiatica*), Rosy Moth (*L. mathura*), Nun Moth (*L. monacha*), and the Siberian Silk Moth (*Dendrolimus sibiricus*). Survey participants throughout the state representing the Cooperative Extension Service (CES), Customs and Border Protection (CBP), and various volunteers deploy monitoring traps statewide.

Trapping efforts focus primarily on the likely pathways for introduction, targeting port communities, international borders, shipping and container facilities, and high use recreational sites. The Flighted Spongy Moth, for example, has been documented numerous times on the superstructures of ships and cargo originating from infested



Figure 2. Offloaded containers in ports are potential pathways for AGM egg mass vectoring

ports and locations in Asia where the species occurs natively. In the summer of 2014, CBP intercepted FSMC egg masses on a bulk carrier vessel in Juneau, Alaska. In previous years, interceptions by CBP Agriculture Officers have been made near Ketchikan on ships originating from Asia. The Division of Agriculture continues to work with appropriate cooperators to carry out the survey. This trapping survey provides a second line of defense to CBP detection efforts in the event the targeted species are not initially detected at the source of transport.

Spongy Moth monitoring began in Alaska in 1983 and positive identifications of Spongy Moth have been confirmed in several locations. All the trap detections were singletons. The most recent positive trap detection for Spongy Moth in Alaska was in 2006, in Fairbanks near an RV park where a single male was captured.

Although targeted exotic defoliating moths have been detected in traps deployed in Alaska, there have only been isolated individuals and reproducing populations are not known to be established. Recent offshore vessel detections warrant a concern for the possibility of overwintering egg masses in or near Alaska's port communities. Interagency cooperation and support in these survey efforts is essential to maintaining an early detection, rapid response network throughout the state.



Figure 3. Male European Spongy Moth caught in a sticky trap. Fairbanks, AK 2006

Surveyed Moths

- **Common Name / Scientific Name:**
 - Spongy Moth / *Lymantria dispar*
 - Flighted Spongy Moth / *Lymantria dispar asiatica*
 - Nun Moth / *Lymantria monacha*
 - Rosy Moth / *Lymantria mathura*
 - Siberian Silk Moth / *Dendrolimus sibiricus*
- **Survey Regions:**
 - Anchorage
 - Fairbanks North Star
 - Ketchikan Gateway
 - Kenai Peninsula
 - Juneau
 - Matanuska Susitna
 - Southeast Fairbanks

Spongy Moth (*Lymantria dispar*) Characteristics

Identification

Adult male moths are light brown with a darker brown pattern on their wings. Their wingspan is just under 2 inches (3.5–4.0 cm). Females are slightly larger and have a wingspan of about 2.5 inches (~6.5 cm). Females are also almost entirely white in color with only a few dark markings on their wings. Newly hatched larvae are black and hairy, but they later develop a mottled yellow-gray pattern with tufts of stiff hairs and two rows of blue and red spots along the back. Mature larvae are about 2–2.5 inches long (4.0 – 6.5 cm).



Figure 4. A spongy moth caterpillar, adult female and adult male respectively.

Biology

Spongy moths reproduce once a year. Females tend to be flightless. They lay an egg mass containing between 500-1,500 eggs on tree trunks. The eggs overwinter and hatch in late spring or early summer. Larvae go through up to seven instars (developmental stages of insects between molts) and then pupate in late summer. Larvae feed voraciously on tree leaves. In Alaska, they feed on leaves from alder, birch, aspen, poplar, willow, hemlock, larch and fir trees. Larvae are nocturnal feeders and congregate in shady areas during the day. Pupation in the late summer lasts from 7-14 days before emergence as an adult. The males will emerge first and search for females. The females, generally being flightless, will lay their eggs near their pupation site. After mating, both adults die.

Pathways

Late instar larvae can crawl up to 100 meters, and newly hatched caterpillars climb to the tops of trees and are carried long distances by wind. Larvae can also attach to animals, people, vehicles, construction materials, and other objects and be accidentally spread.

Impacts

At low densities, this species causes no discernible damage. However, during outbreaks, larval feeding may completely defoliate host trees and cause the host trees to die. Outbreaks can last between 1-5 years. The species diversity of native animals (mammals, birds, and insects) can be altered during outbreaks due to a reduction in shelter and food from changes to the forest. Mammals and birds can prey on adult moths but generally do not control larvae populations because the larvae have thick, protective hairs on their bodies for defense.

Distribution

Range

Spongy Moths are native to Southern Europe, northern Africa, and central and southern Asia and Japan. The European strain has been introduced to eastern North America and is spreading south and west. The Asian strain has been discovered in the U.S. and Canada recently, and a single male moth was found in a Fairbanks campground in 2006.

Habitat

Spongy moths are found in temperate forests.

Resources

Get Involved

Please notify the Cooperative Agricultural Pest Survey State Survey Coordinator at dnr.ag.ssc@alaska.gov immediately if you suspect that you have seen a Spongy Moth or a Spongy Moth caterpillar. It is always helpful if you can provide a photograph, location, date, and time with your report. When traveling to and from Alaska, take special care to inspect your vehicle and luggage to make sure you are not accidentally transporting a stow away. Also, never transfer firewood across state lines.

Do not disturb traps. If you see downed or damaged traps notify the SSC at the email above.

Learn More

- [Spongy Moth | Animal and Plant Health Inspection Service](#)