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Spongy moth caterpillar with its distinctive pattern of blue and red spots. Fully-grown caterpillars may be up to 5 cm in length.

Spongy moth

Spongy moth *Lymantria dispar* Linnaeus (Lepidoptera: Erebidae: Lymantriinae) is an invasive tree-defoliating pest. It is not present in New Zealand. Help us keep spongy moth from establishing here by learning what to look for.



Image: Alexander Sviridov, Canada.

Adult male spongy moth.

Spongy moth, formerly known as gypsy moth, is a major defoliating pest of a wide range of trees, with a preference for broad-leaved species, but also occasionally attacking conifers. Spongy moth caterpillar feeding stunts tree growth, and repeated defoliation in successive years can cause tree death. Consecutive spongy moth outbreaks on *Pinus radiata* in Spain (in 2012 and 2013) resulted in the death of nearly all trees in severely defoliated stands. Spongy moth outbreaks tend to occur in “boom and bust” cycles over a number of years. In addition, the urticating hairs of the caterpillars may cause allergic reactions in humans and other animals.

Three subspecies of spongy moth are currently recognised: *Lymantria dispar asiatica* (Asian spongy moth), *L. dispar dispar* (European spongy moth) and *L. dispar japonica* (Japanese spongy moth). Asian spongy moth is considered to be the main threat to New Zealand due to the existence of numerous potential import pathways, and frequent border interceptions. Any establishment here would have a very adverse impact on international trade.

Symptoms to look for

Egg masses, caterpillars and adult male moths are all quite distinctive, with no similar-looking equivalents currently known in New Zealand:

- Yellow-, tan- or brown-coloured egg masses with a ‘spongy’ appearance.
- Hairy caterpillars with a distinctive pattern of blue and red spots; caterpillars are messy feeders, leaving partially chewed leaves on the ground beneath infested trees.
- Large adult moths; males with fluffy antennae.



Image: Chris Hoess.

Image: Karla Salp, Washington State Department of Agriculture, Bugwood.org. Licensed under CC BY 3.0 US DEED.

Left: Adult female spongy moth with egg mass. **Right:** *Pinus sp.* defoliated by European spongy moth in eastern USA.

Hosts

Spongy moth attacks many broad-leaved and conifer tree species. The Asian spongy moth has the greatest host range, feeding on more than 600 species. In New Zealand, exotic amenity trees which are favoured spongy moth hosts such as oak (*Quercus spp.*), apple (*Malus spp.*), poplar (*Populus spp.*), and willow (*Salix spp.*) would be at highest risk. European spongy moth damage to *Pinus radiata* in Spain suggests that *P. radiata* growing in New Zealand would also be at risk.

Moth life cycle

Caterpillars hatch from overwintered egg masses in early spring and feed intensively for about six weeks (each consuming around 1m² area of foliage) before pupating early- to mid-summer. Adults emerge mid- to late summer, with each female producing between 500 to 1000 eggs. These are deposited in a fuzzy mass on any nearby surface, either a potential host tree or an inanimate object such as a building, vehicle or vessel, and are resilient to environmental extremes. There is one generation of spongy moth per year.

Spongy moth can naturally disperse as adults (usually up to several kilometres). The female Asian spongy moth is a particularly strong flier, capable of travelling distances of up to 30 kilometres. Natural dispersal can also occur when newly-hatched caterpillars release silken threads and ‘balloon’ on the wind. Unintentional dispersal of spongy moth primarily occurs via transport of egg masses laid on inanimate objects, though all life stages may potentially be dispersed as hitchhikers.

Identification and testing

Identification of adult specimens can be confirmed by microscopic examination of certain characters by skilled personnel. All life stages can be identified using molecular sequencing techniques.

As required by the Biosecurity Act (1993), if you encounter any insects or tree damage which you suspect could be spongy moth, call the Biosecurity New Zealand Pest and Disease hotline – 0800 80 99 66. The Ministry for Primary Industries will coordinate how best to proceed with sampling and identification.

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