

# Pine-tree lappet moth

The pine-tree lappet moth is found throughout Europe and Western Asia. It feeds on the leaves of coniferous trees, in particular Scots pine, over much of its natural range and it can cause significant damage to forests. The moth is not native to the British Isles and until recently records have been limited to occasional sightings of vagrants along the south coast of England. In 2004, a single male moth was discovered near Inverness in Scotland followed by more in the same area in 2007 and 2008. It is possible that the species has established in this area, and forest managers and workers should be aware of the potential threat of a new pest and report all sightings to the Forestry Commission.



© Hannes Lemme, Bugwood.org

Adult moth

## Threat to forests in Britain

With the exception of a single larva found in Essex in 1999 (reported to have been imported from Italy on a pine tree), records of the pine-tree lappet moth in Britain had until 2004 been limited to light trap captures of adult moths taken along the south coast of England and in the Channel Islands.

In 2004 a single male moth was caught in a light trap in the Inverness area. This was assumed to be a migrant until two further individuals were captured in a light trap 18 km away in 2007. In 2008, a further six moths were captured in light traps, and four more in a small-scale pheromone trapping exercise covering six Scots pine sites to the west of Inverness.

The identification of these individuals as pine-tree lappet moths has now been formally confirmed. Although no life stages (see overleaf for more information on this) other than adult male moths have been found it is still possible that the species may have become established in this area.

The pine-tree lappet moth has caused severe defoliation of Scots pine trees on many occasions in Eastern Europe. An initial assessment of the potential impact of the moth in Britain is that it presents a significant threat to the pine forests of northeast Scotland – and further afield if allowed to spread.

## Pest status and controls

Although the pine-tree lappet moth is not subject to regulation under the European Plant Health Directive – as the pest is endemic in its native range in continental Europe – or listed in the Plant Health (Forestry) Order 2005, a containment and eradication programme has been launched using the general powers under the Order to deal with pests not normally present in Britain and which present a risk of causing injury to trees.

Area where moths have been captured



## What to look for

The pine-tree lappet (*Dendrolimus pini*) is a large moth of the family Lasiocampidae, order Lepidoptera, with a wingspan of between 60 mm (males) and 80 mm (females). Its preferred habitat is Scots pine forest although other coniferous trees may be attacked. In Germany, outbreaks tend to occur in mature Scots pine forests that are growing on dry sandy habitats.

### Adult moths

Adult moths emerge from pupae between late June and mid August, and live for 9–10 days. Males and females mate on the lower part of pine trunks after which females crawl to an initial egg-laying position. This may be on needles, twigs or bark of (almost exclusively) Scots pine. Up to 250 eggs are laid in batches of 20–100. Females only fly after they have laid most of their eggs.



Eggs clustered on Scots pine needles

© Hannes Lemme, Bugwood.org

### Larvae (caterpillars)

Eggs hatch after 16–25 days during August and September, and the larvae begin feeding on the edges of pine needles. Autumn feeding lasts for 2–3 moults until the first frost, when larvae migrate down the pine trunks and overwinter beneath the litter at the litter/ mineral soil interface, usually very close to the tree trunk.



Young larvae (~ 5 mm long)

© Hannes Lemme, Bugwood.org



Mature larvae (~ 80 mm long)

© William M. Ciesla, Forest Health Management International, Bugwood.org



Mature larvae feeding on pine

This development stage ends in early spring, when soil temperatures reach 4–5°C. The larvae then return to the pine canopy and feed voraciously on old needles, with occasional buds, shoots and green bark. Fully grown larvae (50–80 mm long) are more active and may crawl several hundreds of metres before settling on a pupation site. It has been found that some populations take two years to complete development, with larvae overwintering twice.

### Pupae (chrysalis)

Pupae are formed in semi-transparent cocoons in the canopy foliage, on tree bark, or on understorey vegetation. Pupation occurs in May–June and lasts 4–5 weeks.



Parchment-like cocoon

© Stanislaw Kineliski, Bugwood.org

### For more information

Plant Health (Forestry) Order 2005  
(Council Directive 2000/29/EC): [www.opsi.gov.uk/stat](http://www.opsi.gov.uk/stat)

Forest Research: [www.forestresearch.gov.uk](http://www.forestresearch.gov.uk)

Pest Risk Assessment: [www.forestry.gov.uk/planthealth](http://www.forestry.gov.uk/planthealth)

### Contacts

If you suspect the presence of this pest or see a moth that you suspect to be a pine tree lappet, trap it if possible and immediately report all findings to:

Forestry Commission Plant Health team:  
T: 0131 314 6414; E: [planthealth@forestry.gsi.gov.uk](mailto:planthealth@forestry.gsi.gov.uk)

Forestry Commission Scotland National Office:  
T: 0131 314 6156; E: [fcscotland@forestry.gsi.gov.uk](mailto:fcscotland@forestry.gsi.gov.uk)