

Gypsy moths (*Lymantria* spp.)

Gypsy moths are an exotic plant pest **not** present in Australia.

Originating from China and Far East Russia the Asian gypsy moth (*Lymantria dispar asiatica*) has now spread and established in Korea, Japan and Europe. The European gypsy moth (*Lymantria dispar dispar*) which originated from southern Europe and Northern Africa has spread to North America.

Gypsy moths pose a high biosecurity risk to Australia because of their tendency to hitchhike and their high reproductive rate. If gypsy moths established in Australia they would be extremely difficult and expensive to manage, partly because of their broad host range.

European strains of the gypsy moth hold great potential for damage to commercial radiata pine plantations where this species is utilised in plantation forestry, such as in New Zealand or Australia.



Asian gypsy moth female [40-70 mm] (top) male 30-40 mm (bottom)
Photo: USDA APHIS PPQ Archive, USDA APHIS PPQ, Bugwood.org

How will it get here?

There is a high risk of exotic gypsy moths arriving on ships carrying cargo containers. The gypsy moth is attracted to light, so there is the potential for eggs to be deposited on ships, aircraft and vehicles at brightly lit urban parking lots, airports and seaports.

The likelihood of gypsy moth being transported to Australia from any particular country is dependent on a number of factors such as volume of trade, previous ports of call and number of passengers. The four main potential gypsy moth entry pathways identified are imported vehicles and machinery, cargo containers, sea vessels and aircraft, and military equipment.

How will it spread?

Natural dispersal of Gypsy moth occurs either at the first instar larvae stage or as an adult moth (in the case of the AGM): First instar larvae readily spread several hundred metres by ballooning on the wind, and can move as much as several kilometres. To achieve this, they move to an elevated position and spin silk from their head, which catches the wind. Adult female EGM have fully formed wings but do not fly. However, the female AGM will readily fly and can travel up to 40 km before mating. Introduction of this pest into new locations not adjacent to current populations will most likely occur through human aided dispersal. Eggs are the most likely form to be transported on vehicles and commodities, but larvae are also known to attach to travellers and their possessions. The most likely human aided dispersal pathways include:

- Movement on plant parts:
 - Bark – eggs, borne externally.
 - Stems, shoots, trunks & branches – eggs, larvae and pupae, all borne externally.
 - Wood – eggs, borne externally.

- Movement on nursery stock.
- Movement on machinery and equipment, such as shipping containers, trucks, hulls and rigging of ships.

What plants are affected?

Gypsy moths have an extremely wide host range, being able to complete their life cycle on over 650 plant species worldwide. While relatively few Australian species have been tested for susceptibility to Gypsy moth attack, at least 55 Australian host species are known.

Their preferred hosts include oak, alder broadleaf trees, Douglas fir and western hemlock needle trees. Outbreaks usually begin on these preferred hosts and move to other species as the Gypsy moth density increases.

What does it look like?

The appearance of the two main types of Gypsy moth is similar, although the female European gypsy moth is usually flightless. The female moth is a large (40–70 mm wingspan), distinctive moth with wavy, dark-coloured bands across the forewings. Males are smaller (30–40 mm wingspan) and brown with darker brown patterns on the wings. Egg masses contain 100–1000 eggs and are covered with yellowish coloured scales from the female moth. Larvae can grow to 70 mm in length, are dark, hairy and in the later instars have a characteristic double row of dots along the back: five pairs of blue followed by six pairs of red dots.



Hairy larvae showing distinctive blue and red spots

Photo: Evgeny Akulov, Russian Research Institute of Plant Quarantine, Bugwood.org

What should I look for?

The larvae are voracious feeders with each larvae consuming about 1 m² of green leaves in its lifetime. At low levels, the Gypsy moth caterpillars do not impact on the general health of trees, but at outbreak levels, they can completely defoliate trees. The physiological stress associated with the feeding activities of the caterpillar can result in reductions in tree growth, crown dieback and tree mortality. Tree mortality is often associated with other insects and pathogens that attack the stressed trees. Caterpillar feeding on the leaves is the most obvious symptom of Gypsy moth attack.

Adults do not feed and will cause no adverse impacts on host species. However, caterpillar silk strands, droppings, destroyed leaves, egg masses and dead moths would be evident.

If you suspect you have found Gypsy Moths,
Call the Exotic Pest Hotline

