

# Priority plant pests of Victoria Guide



JOIN THE GREAT  
BIOSECURITY  
**Quest**

Image 1: Brown Marmorated Stink Bug eggs  
Image 2: Spotted Lantern Fly  
Image 3: Adult Brown Marmorated Stink Bug

AGRICULTURE VICTORIA

# What is Biosecurity?

Biosecurity is a collective effort to protect what we value most by preventing and managing harm caused by pests and diseases. If we all work together to protect our biosecurity, we can continue to spend time in the great outdoors, enjoy clean and safe food, and protect the agricultural industries that provide so much for us all.

## Priority plant pests

This guide includes 25 priority plant pests that we want to keep out of Victoria.

Victoria is lucky to be free from many of the world's most damaging plant pests. Exotic plant pests can damage our natural environment, destroy our food production and agriculture industries, and some could change our way of life.

Outbreaks of plant pests and diseases are increasing due to climate change, and more people and goods coming into the state

## Play your part

The responsibility falls to all of us to protect Victoria's biosecurity, and a strong biosecurity system requires industry, community and government working together.

Early detection and reporting of outbreaks is critical in minimising the impact of biosecurity emergencies.

We can all play our part by keeping an eye out for biosecurity pests when going about our daily lives.

## How to report a pest

If you have found an unusual plant, pest or disease, you should visit [agriculture.vic.gov.au/reportaplantpest](http://agriculture.vic.gov.au/reportaplantpest) to make a report.

The type of information you will need to provide may include:

- What you think the pest might be
- Where and how you found it
- The type of plant you found the pest or disease on
- Photos of the pest or symptoms of the disease

If you believe you have identified a pest, and if it is safe to do so, please secure it.



## Contents page

This toolkit provides you with lots of information about some of the worst biosecurity plant pests that we want to keep out of Victoria. Some of these pests are exotic, which means they are not present in Australia, and others are introduced, which means they are present in other parts of Australia but not Victoria.

In this toolkit you will find all the information you need when you're watching out for these pests, including key features to look for, where you might see them, when you might see them and where they are currently found.

## Priority plant pests to watch out for in Victoria

1. Asian citrus psyllid – *Diaphorina citri*
2. Asian honey bee – *Apis cerana*
3. Asian hornet – *Vespa velutina*
4. Asian longhorn beetle – *Anoplophora glabripennis*;
5. Brown marmorated stink bug (BMSB) – *Halyomorpha halys*
6. Bumble bee – *Bombus terrestris*
7. Citrus longhorn beetle – *Anoplophora chinensis*
8. Colorado Potato beetle – *Leptinotarsa decemlineata*
9. Electric ants – *Wasmannia auropunctata*
10. European house borer – *Hylotrupes bajulus*
11. European hornet – *Vespa crabro*
12. Exotic fruit flies – *Bactrocera dorsalis* as model species
13. Exotic leafminers – *Liriomyza trifolii* as a model species
14. Giant African snail – *Achatina fulica*
15. Glassy winged sharp shooter – *Homolodisca vitripennis*
16. Khapra beetle – *Trogoderma granarium*
17. Polyphagous shot-hole borer – *Euwallacea fornicatus*
18. Red imported fire ant (RIFA) – *Solenopsis invicta*
19. Southern armyworm – *Spodoptera eridania*
20. Spotted lantern fly – *Lycorma delicatula*
21. Spotted wing drosophila – *Drosophila suzukii*
22. Spongy moth – *Lymantria dispar*
23. Turnip moth – *Agrotis segetum*
24. Varroa mite – *Varroa destructor*
25. Yellow spotted stink bug – *Erthesina fullo*



# Asian citrus psyllid

*Diaphorina citri*



## EXOTIC PEST – not present in Australia

Banner image: David Hall USDA Agricultural Research Service, Bugwood.

Asian citrus psyllid (*Diaphorina citri*), adult



David Hall, USDA Agricultural Research Service, Bugwood.org (CC BY-NC 3.0)  
<https://www.insectimages.org/browse/detail.cfm?imgnum=50006088>

Asian citrus psyllid  
(*Diaphorina citri*), eggs



David Hall, USDA Agricultural Research Service, Bugwood.org (CC BY-NC 3.0)  
<https://www.insectimages.org/browse/detail.cfm?imgnum=50006085>

Asian citrus psyllid  
(*Diaphorina citri*), nymphs



UDGS Bee Inventory and Monitoring Lab,  
Flickr Public Domain Mark 1.0

Asian citrus psyllid  
(*Diaphorina citri*), adult

### Why is this pest a concern?

Asian citrus psyllid (*Diaphorina citri*) is an exotic sap-sucking pest of wild and cultivated plants in the Citrus family. They can carry bacterial pathogens that cause the debilitating citrus disease Huanglongbing (HLB) or Citrus Greening. Infection leads to the production of small, lopsided, unevenly coloured fruit that are bitter tasting and unmarketable and eventually kills the host tree.

### How do I identify it?

Adult citrus psyllids are between 2.0–4.0 mm long and have mottled brown bodies with light brown heads. Abdomens vary in colour from yellowish-brown, greenish-brown, or pinkish brown. Forewings have a mottled brown margin around the edge and are broad tipped. The wings are translucent and marked with flecks of white or light brown spots. Antennae tips and two small segments have a black band. Their legs are a light greyish. They feed at a 45° angle to the plant surface. Males are smaller than females.

Nymphs do not resemble adults. They start out as translucent light yellowish orange, turning into a brown green before reaching adulthood. The first-stage nymphs are about 0.3 mm long by 0.17 mm wide and reach about 1.06 mm long, 1.02 mm wide by the fifth stage. Eggs are elongated and almond shaped, tapering at one end, 0.31mm long and 0.14 mm wide. They are light yellow when laid and turn bright orange as they mature. They hatch in 3–10 days.

### Where will I find it?

The eggs, nymphs and adults can be found on young leaves and shoots of citrus plants. Nymphs are most often found on delicate veins of young leaves and soft shoots. Eggs are found in batches of up to 800 eggs on young shoots and unfurled host leaves.





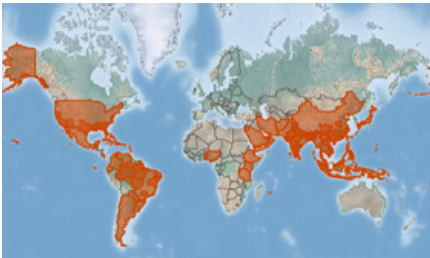
Asian citrus nymphs UDGS Bee Inventory and Monitoring Lab, Flickr Public Domain Mark 1.0

### Asian citrus psyllid (*Diaphorina citri*), nymphs



20170331-APHIS-BB-IYPH\_0015 | Asian citrus psyllid adults, Flickr Public Domain Mark 1.0

### Asian citrus psyllid (*Diaphorina citri*), adults and nymphs, waxy honeydew



© CAB International, PlantwisePlus Knowledge Bank CC BY-NC-ND 4.0

### Current distribution of the Asian citrus psyllid (*Diaphorina citri*)

## Potential hosts in Australia

Asian citrus psyllid occur on all wild and cultivated plants from the Rutaceae family targeting Citrus, especially grapefruit, lemons, and limes.

## What will I see?

Asian citrus psyllid is one of only two known vectors of citrus greening disease. Symptoms from citrus greening include yellow shoots, blotchy mottled deformed leaves, twig dieback, and eventual death of the tree. Tiny clusters of are found on young shoots of citrus trees. Eggs are laid on the tips of growing shoots between the unfolding leaves. Feeding by the Asian citrus psyllid can cause serious damage to budbreak flushes and growing points, leading to dwarfing of fruit. Heavy populations cause blossom and fruitlet drop. Black sooty mould can occur as a result of the honeydew excreted by the psyllid.

## When will I see it?

Asian citrus psyllid search for developing young leaves and shoots to feed on when temperatures are between 13 and 30°C and plants are in vegetative flush, flowering and fruiting stages. Best suited to tropical and sub-tropical climates of 25–28°C, it can complete its life cycle in 14–50 days with an individual lifespan lasting several months. There can be 9–14 overlapping generations per year at 20–25°C, providing the nymphs have enough young shoots to feed on. Nymphs live 15 to 47 days before final moulting into adults. Adults remain overwintering in citrus tree canopies in the cooler months.

## How does it travel?

Strong winds can disperse Asian citrus psyllid over long distances and there is a danger of long distance dispersal across the Torres Strait. The adults, eggs and nymphs can be introduced on imported host budwood, grafted trees, and rootstock from infected areas.

There is a serious risk from infected fruit in tourist luggage brought into Australia. Sharing of orchard machinery and equipment can spread Asian citrus psyllid and the bacteria throughout a growing district. Infested nursery stock can be sold to unsuspecting farmers and home gardeners.

## Where is it now?

It is widely spread throughout Asia and New Guinea, Africa, Oceania, and throughout the United States and the Caribbean.



**Report a suspected sighting of a Asian citrus psyllid by calling the Exotic Plant Pest Hotline 1800 084 881 or at [agriculture.vic.gov.au/reportaplantpest](http://agriculture.vic.gov.au/reportaplantpest) or using the QR Code**



It is important to report any unusual plant pest or disease immediately to increase the chance of effective control and eradication. Please take quality photos of the pests or damage to include in your report where possible. Information on how to take a quality photo for identification can be found on our reporting page.

Disclaimer: This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. Information is correct as of December 2023.

# Asian honey bee

*Apis cerana*



## INTRODUCED PEST – not present in Victoria

Banner image: © CSIRO



Tevan Brady, Utah State University,  
Bugwood.org (CC BY-NC 3.0 US)

**Asian honey bee (*Apis cerana*),  
adult drone.**



Tevan Brady, Utah State University,  
Bugwood.org (CC BY-NC 3.0 US)

**Asian honey bee (*Apis cerana*),  
adult worker.**



Allan Smith-Pardo, USDA APHIS PPG,  
Bugwood.org (CC BY-NC 3.0 US)

**Asian honey bee (*Apis cerana*),  
adult female worker.**

### Why is this pest a concern?

Asian honey bees (*Apis cerana*) are an introduced pest, currently established in Northern Queensland. They can spread unwanted mites and diseases, compete with European honey bees and native bees for food and nesting sites and displace them. Asian honey bees can nest in urban areas, increasing the risk of being stung.

### How do I identify it?

Asian honey bees (AHB) are 10–13 mm long (much smaller than European honey bees, EHB), have pronounced black/brown and yellow stripes on their abdomens; two antennae bent forward at the elbow, and less hair on their thorax and abdomen than the EHB.

AHB have two pairs of transparent wings, the forewings 7.4–9.0mm long and the hindwings smaller. Wing venation is different from EHB and the base of the wings is also shinier and darker than EHB. Worker bees display evenly spaced yellow/dark brown and black stripes along the entire length of the abdomen, in contrast to the uneven abdominal striping of EHB.

The base of the wings is also shinier and darker than EHB. Worker bees display evenly spaced yellow/dark brown and black stripes along the entire length of the abdomen, unlike EHB.

AHB tend to have healthy, strong colonies due to vigorous hygiene behaviours, reducing the susceptibility to American foulbrood and other infections. AHB are a relatively resistant, natural host for Varroa mites. They are also carriers of diseases of other species of bees, including the EHB.

The behaviour of AHB differs from EHB as they frequently abandon their nests looking for resources and have faster erratic flight patterns. They are better pollinators than EHB, due to more extended foraging times being more active earlier and later in the day. AHB can be aggressive in protecting their nest and sting if provoked but are more docile than EHB and would rather hide than attack.





Heikindai\_87- inaturalist.org no rights reserved (CC0)

**Asian honey bee (*Apis cerana* ssp. *japonica*), swarming**



John Gibson 139, inaturalist.org no rights reserved (CC0)

**Asian honey bee (*Apis cerana*), nest entrance**

## Where will I find them?

AHB are cavity nesters, building their three to four comb nests in tree hollows, compost bins, under eaves, in walls, under floorboards, letterboxes and in any open disturbed areas.

The AHB is very adaptable to a range of habitats, including anywhere from tropical to sub-tropical, high to low altitudes, and dry to humid conditions. They will also forage and build nests in mangrove and eucalyptus woodlands.

## Potential hosts in Australia

AHB can forage on many plant species.

## What will I see?

Averaging 1700 bees in a swarm, they often settle 2–3 m up on branches and tree trunks but can create nests at any height from the ground to 40 m up in tree hollows, crevices, caves and man-made cavities in urban and native settings. Nests in compost bins, under eaves, in walls and letterboxes are also seen.

## When will I see it?

Spring and summer are the busiest times of year for AHB as they are pollinating flowering plants and collecting nectar and pollen. They are most active during mid-morning and late afternoons.

---

## What can it be confused with?

### Native bee species of Victoria include:

Masked bees, Leafcutter bees, Resin Bees, Blue Banded bees, Teddy Bear bees, Cuckoo bees, Reed bees, Carpenter bees, Blue banded bee, Common spring bee, Green and gold *Nomia*, Fierce megachile, Two banded chilalichus, Yellow banded chilalictus, Harlequin bee

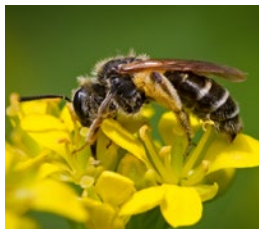
### Introduced species:

European wasp and European honey bee



Whitney Cranshaw, Colorado State University, Bugwood.org (CC BY 3.0 US)

**Hoverfly, family, (*Syrphidae*)**



David Cappaert, Bugwood.org (CC BY-NC 3.0 US)

**Leafcutter bee, genus, (*Megachile*) spp.**



David Cappaert, Bugwood.org (CC BY-NC 3.0 US)

**Western honey bee (*Apis mellifera*)**



M. Batley (2008) Native *venustus* collertid (*Trichocolletes venustus*) PaDIL <https://www.padil.gov.au> (CC BY-NC 4.0)

***Trichocolletes venustus***



Pest and Disease Image Library, Bugwood.org (CC BY-NC 3.0 US)

**European wasp (*Vespula germanica*)**



© CSIRO

Asian honey bee (*Apis cerana*),  
collection specimen



© CSIRO

Asian honey bee (*Apis cerana*),  
Collection specimen

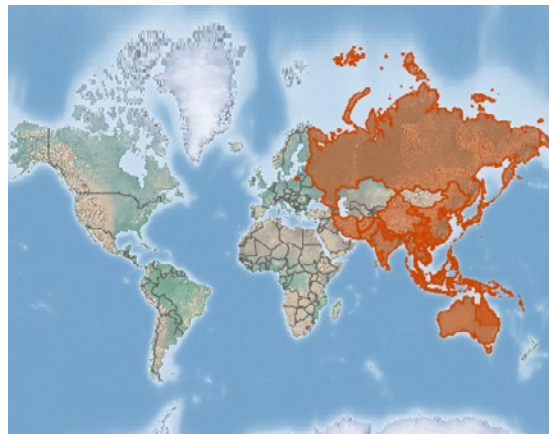
## How does it travel?

AHB spread naturally by swarming and abandoning from their nests. They can travel 10 kms from the original nest, though more commonly no more than 1 km and leave their nest up to ten times a year.

Ships and boats harbor ideal conditions for bees to create nests to sustain a journey of some distance. Seaports are a risk pathway for continued incursions of AHB into Australia.

## Where is it now?

AHB currently extend from Afghanistan and Russia to South East Asia, China, Indonesia, Malaysia, Papua New Guinea, the Solomon Islands, Vanuatu and far Northern Queensland, Australia.



© CAB International, PlantwisePlus  
Knowledge Bank CC BY-NC-ND 4.0

### Current distribution of the Asian honey bee (*Apis cerana*)

Asian honey bee is present in Australia but is confined to Northern Queensland.



**Report a suspected sighting of a Asian honey bee  
by calling the Exotic Plant Pest Hotline 1800 084 881 or at  
[agriculture.vic.gov.au/reportaplantpest](http://agriculture.vic.gov.au/reportaplantpest) or using the QR Code**



It is important to report any unusual plant pest or disease immediately to increase the chance of effective control and eradication. Please take quality photos of the pests or damage to include in your report where possible. Information on how to take a quality photo for identification can be found on our reporting page.

Disclaimer: This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. Information is correct as of December 2023.



# Asian hornet

*Vespa velutina*



## EXOTIC PEST – not present in Australia

Banner image: © Allan Smith-Pardo



Gilles San Martin, iNaturalist.org  
(CC BY-SA 2.0)

**Asian hornet (*Vespa velutina*),  
adult**



Gilles San Martin, iNaturalist.org  
(CC BY-SA 2.0)

**Asian hornet (*Vespa velutina*),  
pupae**



Gilles San Martin, iNaturalist.org  
(CC BY-SA 2.0)

**Asian hornet (*Vespa velutina*),  
larva**

### Why is this pest a concern?

The invasive Asian hornet (*Vespa velutina*) is a highly aggressive and effective predator of other insects, specialising in preying on honeybee colonies often with devastating losses. Out-competing other predatory insects, it significantly impacts ecosystems, altering the biodiversity in regions where it is present.

### How do I identify it?

The Asian hornet has a distinctive dark brown-black velvety thorax. The first three abdominal segments are dark brown, with a yellow or yellow-brown backside margin with a fine yellow stripe prominent. The fourth segment is orange-brown creating a distinctive band on the abdomen. The front part of the head is yellow-orange and antennae are black at the ends and brown at the bottom. The Asian hornet has brown legs with yellow tips. Queens are 30–35 mm long and workers and foragers are approximately 25 mm.

Males and females are similar in size and colour; although males have longer antennae and no stingers.

The Asian hornet is slightly larger than a honeybee but can be differentiated by the abdominal designs, leg and head colour.

### Where will I find it?

The Asian hornet builds primary and secondary nests; primary nests have basal entrances and are usually found on man-made structures. Secondary nests mainly have side entrances and are more likely to be built on natural organic structures. Nests are made of paper, roughly round in shape and built up to 90 cm in height. Nests are often built high on walls and in tree canopies.

Adult hornets are found near greengrocers, feeding on fruit scraps and spoiled fruit in orchards. They are attracted to rotting meat from fishmongers, butchers, and decaying carcasses; they regurgitate liquified meat including from insects to their larvae. During the colder months, the queen will overwinter under the bark of trees, shrubs, or stones. The hornet will occupy positions around a honey bee colony catching and eating 25–50 honey bees daily.



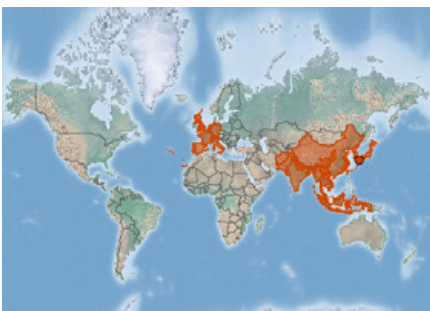
Gilles San Martin, Flickr.com (CC BY-SA 2.0)

**Asian hornet (*Vespa velutina*), nest with larvae in cells**



Vespa-watch iNaturalist.org Public Domain Mark 1.0

**Asian Hornet (*Vespa velutina*), nest**



© CAB International, PlantwisePlus Knowledge Bank CC BY-NC-ND 4.0

**Current distribution of the Asian Hornet (*Vespa velutina*)**

## Potential hosts in Australia

The Asian hornet catches a wide range of native and introduced insects, including honeybees, flies, paper wasps, caterpillars, butterflies, dragonflies, grasshoppers and spiders.

## What will I see?

The biodiversity of native and introduced species of insects is severely affected as predatory hornets compete for food and habitats. This will negatively impact agriculture and the honey industries. An increased load of pathogens can be transmitted to honey bees when wasps are visiting hives. There will be signs of gnawed branches caused by hornets extracting a paper-like substance to create the nests. Flowers, trees, and fruits can be heavily damaged by hornets feeding. Female hornets can be aggressive if they think their nest is under attack; their natural behaviour to protect is by stinging multiple times. If allergic, anaphylactic shock can result in human death.

## When will I see it?

Nests in temperate climates are usually built in spring; in sub-tropical and tropical regions, they can be made all year round. By the end of summer, the colonies can reach a thousand adult workers. Asian hornets will be at peak predatory stage at the end of the honey season in autumn.

## How does it travel?

The Queen hornet is a powerful flyer and can hibernate and survive for extended periods, making her invasive over long distances. She can travel via shipping and air freight, wooden packing materials and pallets, farm equipment and machinery, cars and trucks as well as in imported in soil and plant material.

## Where is it now?

Initially from Asia, there are now ten subspecies of Asian hornet worldwide. Introduced to France 2005, it spread to Spain 2010, Belgium and Portugal 2011, Japan 2012 Italy 2013, England 2016, Netherlands 2017 and Germany in 2018.



**Report a suspected sighting of a Asian Hornet by calling the Exotic Plant Pest Hotline 1800 084 881 or at [agriculture.vic.gov.au/reportaplantpest](https://agriculture.vic.gov.au/reportaplantpest) or using the QR Code**



It is important to report any unusual plant pest or disease immediately to increase the chance of effective control and eradication. Please take quality photos of the pests or damage to include in your report where possible. Information on how to take a quality photo for identification can be found on our reporting page.

Disclaimer: This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. Information is correct as of December 2023.



# Asian long-horned beetle

*Anoplophora glabripennis*



## EXOTIC PEST – not present in Australia

Banner image: Kenneth R. Law, USDA APHIS PPQ, Bugwood.org (CC BY 3.0 US)

Asian long-horned beetle (*Anoplophora glabripennis*), adult on log with exit hole.



Steven Valley, Oregon Department of Agriculture, Bugwood.org (CC BY-NC 3.0 US)

Asian long-horned beetle (*Anoplophora glabripennis*), adult female



Steven Valley, Oregon Department of Agriculture, Bugwood.org (CC BY-NC 3.0 US)

Asian long-horned beetle (*Anoplophora glabripennis*), adult male

### Why is this pest a concern?

The Asian long-horned beetle (*Anoplophora glabripennis*) is an exotic pest and serious threat to Australian industries. Larvae bore into deciduous hardwood and fruit trees, causing extensive internal damage and eventually killing the host tree.

### How do I identify it?

Both adult male and female Asian long-horned adult beetles have long antennae with characteristic whitish-blue banding connecting eleven black segments. Antennae of males are about two and a half times longer than their body length, females one and a third times longer.

Both sexes have hard black shiny forewings covered with whiteish-yellow irregular spots. The upper sections of the legs and the bodies lower portion have a grey-to-blue tinge. Adult beetles vary from 17–39 mm long and 7–12 mm wide, depending on the sex. Females are longest, growing to the upper end of the size range, while the males are significantly smaller, up to 25 mm. Eggs are off-white, oblong shaped with slightly concaved ends and 5–7 mm long. Female Asian long-horned beetles will chew through the bark of a host tree and lay eggs under the bark. Before the eggs hatch into larvae, they turn from off-white to a light yellowish colour.

The legless, segmented larvae are creamy yellowish white, up to 50 mm long and can weigh 1 gm when fully grown. Their heads can be up to 5mm wide, sclerotised, and partially retracted, with their mouth parts facing forward, supported by dark-coloured strong mandibles.

Larvae feed on the outer part of the tree. As they develop, they continue to tunnel and feed through to the centre (heart) of the tree.

The larvae turn light brown when entering the pupal stage which looks like an immature adult with legs and antennae compressed together. Larvae do not feed for two months before emerging as pupae.



Kenneth R. Law, USDA APHIS PPQ, Bugwood.org (CC BY 3.0 US)

**Asian long-horned beetle**  
*(Anoplophora glabripennis)*,  
larva



Thomas B. Denholm, New Jersey Department of Agriculture, Bugwood.org (CC BY 3.0 US)

**Asian long-horned beetle**  
*(Anoplophora glabripennis)*,  
larva



© CAB International, PlantwisePlus Knowledge Bank CC BY-NC-ND 4.0

**Current distribution of the Asian long-horned beetle**  
*(Anoplophora glabripennis)*

## Where will I find it?

Eggs are laid along main branches and the lower crown of host trees. If a potential host tree has branches at the base of tree, check the lower branches and trunk for egg deposits. Larvae and pupae may be found in tunnels in host trees or fallen timber, firewood, timber pallets, logs, lumber, or other imported wood from countries where the beetle is established. Adult beetles inhabit tree canopies or may be found in exit holes in trunks and large branches.

## Potential hosts in Australia

Maple, Horse chestnut, Birch, Hornbeam, Beech, Ash, Apple, Plane, Poplar, Stone fruit, Willow, Mountain-ash and Elm are all susceptible to Asian long-horned beetle larvae.

## What will I see?

Hole damage on larger branches and the main trunk of tree made by exiting adult beetles, oozing sap, twigs with stripped bark, and frass accumulation on the ground beneath a tree. Symptoms seen in the canopy and trunk of a host tree may mean an infestation which is already one or two years old depending on season and environmental conditions.

## When will I see it?

Adults are mostly found during early mornings and late afternoons or when they are most active in the evenings. Temperatures between 15–30°C are ideal for adult beetles to reproduce and feed off leaf stalks. The beetle has a one-to-two-year life cycle depending on temperature and the availability of suitable hosts for feeding and reproduction. Adults live for about a month.

## How does it travel?

The Asian long-horned beetle can fly long distances (up to 14 kms), but rarely do, preferring shorter distances (30–225 m) in a single flight when looking for a new host or mate. Long distance transport occurs when eggs or larvae are imported in wooden materials or timber packaging.

## Where is it now?

Asian long-horned beetle is originally from Asia, and is known from throughout China, Japan, and Korea. Canada and five U.S. states have restricted areas of distribution. It occurs in eleven countries in Europe, where it is under attempted eradication.



**Report a suspected sighting of a Asian long-horned beetle by calling the Exotic Plant Pest Hotline 1800 084 881 or at [agriculture.vic.gov.au/reportaplantpest](http://agriculture.vic.gov.au/reportaplantpest) or using the QR Code**



It is important to report any unusual plant pest or disease immediately to increase the chance of effective control and eradication. Please take quality photos of the pests or damage to include in your report where possible. Information on how to take a quality photo for identification can be found on our reporting page.

Disclaimer: This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. Information is correct as of December 2023.



# Brown marmorated stink bug

*Halyomorpha halys*



## EXOTIC PEST – not present in Australia

Banner image: © CSIRO



© CSIRO

**Brown marmorated stink bug (*Halyomorpha halys*), adult – dorsal view.**



© CSIRO

**Brown marmorated stink bug (*Halyomorpha halys*), adult – ventral view.**



© Susan Ellis, Bugwood.org

**Brown marmorated stink bug (*Halyomorpha halys*), eggs.**

### Why is this pest a concern?

Brown marmorated stink bug (*Halyomorpha halys* or BMSB) could cause significant damage to Australian agricultural and horticultural industries through reduced yields and marketability of high-quality produce. It is a voracious feeder on over 300 host species with a high reproductive potential that could lead to significant economic damage. It also has an ability to travel long distances and is well known to stow away in cargo coming from the Northern Hemisphere between September and April each year. It also seeks shelter in the cooler months and can aggregate in huge numbers becoming a significant nuisance.

### How do I identify it?

Distinctive characteristics of BMSB are the black and white banded markings around the edge of the brown-coloured abdomen and the white banding on the outermost two segments of the antennae. These characteristics occur in all stages. (Note that there are several similar bugs already in Australia including Victoria, with some but not all of these characteristics—see “What could it be confused with” below.)

The adults grow to 12–17 mm long, are shield-like in shape, with marbled brown colourings on the body and the banded abdominal edge. The legs are marbled brown with faint white bands and the membranous forewings have dark striped tips. When crushed, BMSB produce a pungent smell (hence the name “stink bug”).

Nymphs hatch an orangish-brown colour changing to reddish-brown to almost black. At first, they are about 3 mm long and grow to about 12 mm after five larval stages with gradually developing wings. The abdomen often has distinct lighter stripes towards the lateral edges.

Eggs are 1 mm in diameter, barrel-shaped, cream to pale yellow orange to green. They are laid in clusters of 20–28 eggs on the underside of leaves.



© Gary Bernon, USDA APHIS, Bugwood.org

**Brown marmorated stink bug (*Halyomorpha halys*), early instar nymphs and eggs.**

## Where will I find it?

Nymphs and adult BMSB often feed on the reproductive structures of plants (flowers, fruiting bodies, buds, and pods). They also feed on leaves and stems, including bark, branches and trunks of young trees. BMSB eggs are typically found on the underside of leaves. Overwintering adults often seek shelter in crevices in and around homes, sheds and in machinery in the cooler months.

BMSB adults and nymphs pierce plant tissue by inserting their feeding tube and sucking out the juice. This creates symptoms of damage and creates a wound allowing for secondary infections. General signs of BMSB damage on fruit are dimpling on the outer surface and sunken corky spots and early fruit drop.

Symptoms of feeding differ depending on the host. For example, hazelnuts produce more blanks, and corky tissue develops later in the growing season. Beans are scarred with sunken depressions, causing deformed bean pods. BMSB pierces through corn husks, causing collapse and discolouration of kernels. Apples and pears can sustain internal necrosis and corking. Bruising on grapes caused by fruit piercing, allows secondary pathogens to enter.

In cereal crops, BMSB can prevent seed development, causing significant damage.

BMSB is a nuisance to people in the cooler months when large numbers of stink bugs congregate inside buildings and machinery; they also produce an unpleasant odour when crushed.

## Potential hosts in Australia

Approximately three hundred species of vegetable crops, fruit, and ornamental trees are susceptible, including apple, bean, cotton, citrus, fig, grape, peach, pear, nectarines, raspberry, blueberry, almonds, hazelnuts, pecans, cucumbers, soybean, tomato, and corn.

BMSB favours *Paulownia*, Maple and Ash species.

The wide host range of the species means that it may occur on a considerable number of native plant species, but the extent of this is currently unknown.

## When will I see it?

Overwintering adult stink bugs seek shelter in the cooler months and can infest buildings and machinery. In spring, adults emerge from overwintering and become active feeders. September through to April is their most active and damaging time, though they can be active all year round if climatic conditions suit and there are host plants available.

Adults fly in the evenings looking for mates and possibly new food sources; they are also attracted to residential lighting.

## What could it be confused with?



Jean and Fred Hort, Flickr (CC BY2.0)

### Acacia shield stink bug (*Alcaeus varicornis*)

Present in Australia: VIC, ACT, NSW, NT, QLD, SA, WA



Graham wise from Brisbane Australia (CC BY 2.0) Wikimedia Common

### Golden brown shield bug (*Anchises parvulus*)

Present in Australia: VIC, ACT, NSW, NT, QLD, SA, WA



Gary ALA.org.au (CC BY NC 4.0)

### Brown long-headed shield bug (*Austromalaya reticulata*)

Present in Australia: NSW, QLD, NT WA (Papua New Guinea)



© CSIRO

### Zebra shield bug (*Bathrus variegatus*)

Present in Australia: NSW, QLD



Brisbane Insects.com

### Small brown stink bug (*Caystrus pallidolimbatus*)

Present in Australia: QLD, NT (Papua New Guinea, Vanuatu)



© CSIRO

### Glossy shield bug (*Cermatulus nasalis*)

Present in Australia: VIC, ACT, NSW, NT, QLD, SA, WA (New Zealand)



© CSIRO

### Brown shield bug (*Dictyotus caenosus*)

Present in Australia: VIC, ACT, NSW, NT, QLD, SA, WA (New Zealand, New Caledonia)



© CSIRO

### Gum tree shield bug (*Omyta centrolineata*)

Present in Australia: VIC, NSW, QLD, SA, TAS



© CSIRO

### Brown stink bug (*Oncocoris apicalis*)

Present in Australia: VIC, ACT, NSW, NT, QLD, SA, WA



Carol Page iNaturalist.org (CC BY NC 4.0)

### No common name (*Oncocoris geniculatus*)

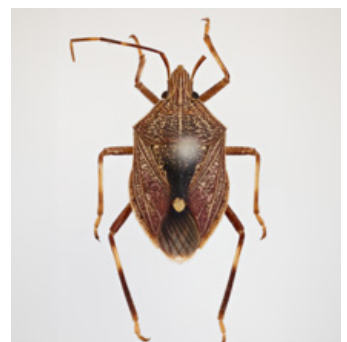
Present in Australia: VIC, ACT, NSW, QLD, SA, TAS



© CSIRO

### Gum tree shield bug (*Poecilometis strigatus*)

Present in Australia: VIC, ACT, NSW, QLD, SA



© CSIRO

### Gum tree shield bug (*Theseus modestus*)

Present in Australia: VIC, ACT, NSW, NT, QLD, SA, WA





Gary Bernon, USDA APHIS Bugwood.org  
(CC BY 3.0 US)

**Brown marmorated stink bug  
(*Halyomorpha halys*), adults  
on peach (*Prunus persica* (L)  
Batsch)**

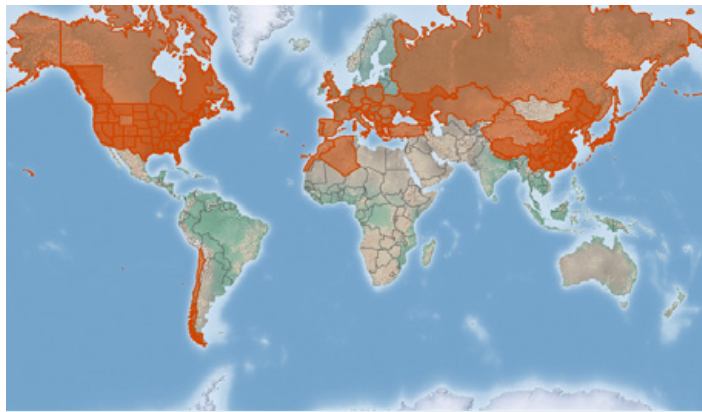
## How does it travel?

The BMSB is likely to travel as a hitchhiker. Egg masses and nymphs may be found on imported fruit and vegetables, nursery stock, and on shipping containers, vehicles, boats, caravans, or machinery. Adults can survive prolonged travel periods especially when goods are imported from places where BMSB is overwintering. Imported goods stored outside pose a significant risk, such as car dealerships, building and nursery supplies.

BMSB is attracted to light and flies mainly during the evening; it can spread locally by flying.

## Where it is now?

BMSB is native to East Asia, China, Japan, Korea, and Taiwan. It has now spread to the United States (1990), Canada, parts of Europe (2007), and Uzbekistan (2023).



© CAB International, PlantwisePlus Knowledge Bank CC BY-NC-ND 4.0

**Current distribution of the Brown marmorated  
stink bug (*Halyomorpha halys*)**



**Report a suspected sighting of a Brown marmorated stink bug  
by calling the Exotic Plant Pest Hotline 1800 084 881 or at  
[agriculture.vic.gov.au/reportaplantpest](https://agriculture.vic.gov.au/reportaplantpest) or using the QR Code**



It is important to report any unusual plant pest or disease immediately to increase the chance of effective control and eradication. Please take quality photos of the pests or damage to include in your report where possible. Information on how to take a quality photo for identification can be found on our reporting page.

Disclaimer: This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. Information is correct as of December 2023.

# Large Earth Bumblebee

*Bombus terrestris*



## INTRODUCED PEST – not present in Victoria

Banner image: © CSIRO



© CSIRO

Bumblebee (*Bombus terrestris*), collection specimen



© CSIRO

Bumblebee (*Bombus terrestris*), dorsal view, collection specimen



© CSIRO

Bumblebee (*Bombus terrestris*), lateral view, collection specimen

### Why is this pest a concern?

The Large Earth Bumblebee (*Bombus terrestris* or Bumblebee), is an invasive pest currently established in Tasmania but is not on mainland Australia. It destroys flowers while foraging on both native and introduced plant species, including noxious weeds, and competing with other pollen and nectar-gathering species.

### How do I identify it?

The Bumblebee is an efficient pollinator of flowering plants and easily adapts to various climatic conditions. Its fat, heavy body is covered densely with fine hairs which maximises its ability to forage longer (up to 4 km) in colder conditions.

It breeds a range of different size worker bees to collect nectar and pollen from a large variety of flowering plants. They have a long proboscis (feeding tube) that enables the bee to collect nectar from deeper within tubular flowers than other bee species. Bumblebees make a distinctive loud buzz when flying generated from vibrating thoracic muscles. This can aid with the release the pollen from flowers.

Bumblebees have yellow bands on their thorax and abdomens. The tip of their abdomen is either buff coloured or white. Queen bees are 30–35 mm long, daughter worker bees are smaller, 8–22 mm long. Drones (males) are similar in size to large workers, and are the fluffier, fattest looking bees in the colony.

### Where will I find it?

The Bumblebee is a ground nester; they build waxy nests about 10 cm underground in abandoned burrows. Nests can be found in urban landscapes, agricultural, native, and managed pasture and grassland environments.

Tasmania introduced the Bumble bee in 1992 to help pollinate tomatoes grown in glasshouses. They have spread right across Tasmania but are not known from elsewhere in Australia.



© CSIRO



© CAB International, PlantwisePlus  
Knowledge Bank CC BY-NC-ND 4.0

### Current distribution of the Bumblebee (*Bombus terrestris*)

Bumblebees are present in Australia but confined to the island of Tasmania.

## Potential hosts in Australia

The Bumblebee prefers pollen and nectar from over a hundred species of flowering plants and is a most effective pollinator in greenhouses, food production and agricultural fields.

### What will I see?

You will see very large, slow-moving bees foraging and buzzing when collecting nectar.

The environmental effects of Bumblebees may also be obvious: flowers damaged by buzzing heavy bodies when collecting nectar and pollen; native bee species and honey-feeding birds displaced from nesting habitats and food sources by competition with the bees; the spread of bee pathogens, parasites and mites; for example, deformed wing virus and American foulbrood; a reduction in honey production from European honey bees through competition for food and reduced health and accelerated spread of weeds such as foxgloves, Patterson's' curse, scotch broom, gorse, and blackberry through increased pollination by the Bumblebee.

### When will I see it?

Bumblebees forage for all types of flowers, preferring blue, purple or yellow colours. New worker bees will build new nests at the beginning of spring and peak activity starts in spring and lasts to the end of summer.

### How does it travel?

The risk of bumblebees entering mainland Australia is very high through hitchhiking over large distances on many modes of transport, including boats, trains, cars and trucks, imported shipping cargo and packing materials. Queen bees have a lifespan of up to about 12 months, workers and drones about 1 month.

Bumblebees can travel up to 90 kms per year. When swarming, bumblebees fly up to 4 kms away from their nests. Once introduced, bumblebees can establish easily and quickly in appropriate conditions.

### Where is it now?

The Bumblebee is found in Europe, the Middle East, Mediterranean Islands, Northern Africa, Japan, Chile, and Argentina. They were discovered in Tasmania in 1992 and are now established on the island. They are not present on mainland Australia.



**Report a suspected sighting of a Bumble bee by calling the Exotic Plant Pest Hotline 1800 084 881 or at [agriculture.vic.gov.au/reportaplantpest](https://agriculture.vic.gov.au/reportaplantpest) or using the QR Code**



It is important to report any unusual plant pest or disease immediately to increase the chance of effective control and eradication. Please take quality photos of the pests or damage to include in your report where possible. Information on how to take a quality photo for identification can be found on our reporting page.

Disclaimer: This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. Information is correct as of December 2023.



# Citrus longhorn beetle

*Anoplophora chinensis*  
(synonym *A. malasiaca*)



## EXOTIC PEST – not present in Australia

Banner image: Pest and Diseases Image Library, Bugwood.org CC BY-NC 3.0 U



Pest and Diseases Image Library,  
Bugwood.org CC BY-NC 3.0 US

**Citrus longhorn beetle**  
*(Anoplophora chinensis)* adult  
– dorsal view.



Pest and Diseases Image Library,  
Bugwood.org CC BY-NC 3.0 US

**Citrus longhorn beetle**  
*(Anoplophora chinensis)* adult  
– lateral view.



National Plant Protection Organisation, the  
Netherlands, Bugwood.org CC BY-NC 3.0 US

**Citrus longhorn beetle**  
*(Anoplophora chinensis)*, larva.

### Why is this pest a concern?

Citrus longhorn beetle (*Anoplophora chinensis*) is an exotic large wood boring beetle, which is extremely damaging to a wide range of broadleaved and coniferous trees and shrubs.

### How do I identify it?

Citrus longhorn beetles are shiny, black, with 10–12 irregular spots on the outer granulated forewings. Males grow to 21 mm long, and females up to 37 mm. Both have black and bluish banded antennae, males 1.7–2.0 times their body length, females 1.2 times. On the scutellum (in the middle of the back) is a small white to bluish irregular spot, which is absent from the Asian longhorn beetle.

Eggs are creamy white, elongated, 6 mm long by 2 mm wide, tapering at both ends. The female lays a single egg under the bark of a host tree.

Larvae are up to 56 mm long and up to 10 mm at the widest point, a pale-yellow colour, with a black head held vertically downward.

Pupae are light yellowish, between 24–38 mm, with legs and antennae coiled together.

### Where will I find it?

Adult beetles feed on petioles of young leaves, tender bark, and twigs and fly in the canopies of the trees looking for a mate. The eggs, larvae and pupae are hidden behind bark and tunnelled away inside the host tree trunk and main branches. Females exit the trunk through 1 cm round exit holes.

### Potential hosts in Australia

Citrus longhorn beetles and larvae are polyphagous, feeding on over 100 host trees from 30 plant families.

Common host plants include maple, apple, pear, birch, beech, alder, hornbeam, dogwood, hazelnut, crepe myrtle, poplar, sycamore, rose, elm, willow, white-flowered horse chestnut, hawthorn, citrus, dwarf loquat, plum and cherry.

The wide host range of the species means that it may occur on a considerable number of native plant species, but the full extent of this is currently unknown.



Art Wagner, USDA – APHIS, Bugwood.org  
(CC BY 3.0 US)

**Citrus longhorn beetle**  
*(Anoplophora chinensis)*,  
exit hole damage.



Art Wagner, USDA – APHIS, Bugwood.org  
(CC BY 3.0 US)

**Citrus longhorn beetle**  
*(Anoplophora chinensis)*,  
damage in trunk of  
bonsai. maple



Art Wagner, USDA – APHIS, Bugwood.org  
(CC BY 3.0 US)

**Citrus longhorn beetle**  
*(Anoplophora chinensis)*,  
feeding marks on twig.

## What will I see?

You may see 1cm holes on trunks and main branches of trees (from the exit of tunneling females), bleeding sap (from egg-laying sites) and swellings on a tree trunk (from pupal tunnelling). Sawdust and wood chips at the base of trees and roots and feeding marks on twigs and small branches are all signs of Citrus longhorn beetle damage. Boreholes may also be seen in firewood, lumber, pallets, and wooden packing materials.

## When will I see it?

Citrus longhorn beetle is most active during the spring and summer months. Beetles feed during the day in the canopies of host trees. Mating occurs in the morning and late afternoon on trunks and main branches at least 0.6m from the ground.

## How does it travel?

Citrus longhorn beetle can be transferred long distances via infected host plant material. Imported wooden shipping crates, containers and pallets can also harbour eggs, larvae, and pupae. Unfavourable climatic conditions, and the need for a new host or mate will influence the beetle to fly short distances.

## Where is it now?

Originally from Eastern Asia, China, and Japan, Citrus longhorn beetle has now spread to Malaysia, Myanmar, Philippines, Sumatra, Taiwan, and Vietnam. It has been found in numerous countries in Europe, where it has been eradicated or is undergoing an eradication program. Isolated populations have recently been found in Italy.



© CAB International,  
PlantwisePlus  
Knowledge Bank  
CC BY-NC-ND 4.0

**Current  
distribution  
of the Citrus  
longhorn beetle**  
*(Anoplophora  
chinensis)*



**Report a suspected sighting of a Citrus longhorn beetle  
by calling the Exotic Plant Pest Hotline 1800 084 881 or at  
[agriculture.vic.gov.au/reportaplantpest](http://agriculture.vic.gov.au/reportaplantpest) or using the QR Code**



It is important to report any unusual plant pest or disease immediately to increase the chance of effective control and eradication. Please take quality photos of the pests or damage to include in your report where possible. Information on how to take a quality photo for identification can be found on our reporting page.

Disclaimer: This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. Information is correct as of December 2023.

# Colorado potato beetle

*Leptinotarsa decemlineata*



## EXOTIC PEST – not present in Australia

Banner image: © CSIRO



Jessica Louque, Smithers Viscient, Bugwood.org

**Colorado potato beetle**  
*(Leptinotarsa decemlineata)*  
larva on tomato plant



David Cappaert, Bugwood.org

**Colorado potato beetle**  
*(Leptinotarsa decemlineata)*,  
adults



David Cappaert, Bugwood.org

**Colorado potato beetle**  
*(Leptinotarsa decemlineata)*,  
eggs

### Why is this pest a concern?

The Colorado potato beetle (*Leptinotarsa decemlineata*) is a serious exotic insecticide-resistant pest in temperate regions. It is one of the most economically damaging pests affecting crops in the Solanaceae family of plants (potato, tomato, eggplant, pepper). When introduced, it can readily spread and once established, it is difficult and expensive to control.

### How do I identify it?

The Colorado potato beetle is 8.5 to 11.5 mm long. The main body is shiny, oval, convex-shaped, creamy-yellow and with five longitudinal stripes on each wing casing. The head and area behind it are orange with black markings. Legs are pale yellow with joints and divergent claws brown to black.

Eggs are pale orange, elongated-oval-shaped and 1.2 mm long, laid in masses of 10 to 30 eggs on the underside of leaves.

First-stage larvae are 15 mm long and have acutely convex pink, red or orange bodies with two rows of equal-sized black spots along each side and a smooth, shiny back. The head is black and has six tiny eye spots behind the antennae. The clawed legs are also black. Later stage instars become carrot-coloured and then pale orange in the final larval stage.

Pupae are a yellowish orange colour.

### Where will I find it?

Colorado potato beetle can be found in field crops of solaneaceous plants.

Eggs can be found on the underside of leaves, stalks, and stems. First-stage larvae feed mainly on leaf surfaces. Second-stage larvae move to the growing tips of the plant. The third and fourth stages feed on the edges of leaves, petioles and stems, then migrate into the soil to transition into pupae. Adults of both sexes are found mainly on foliage. Adult females overwinter in the soil.





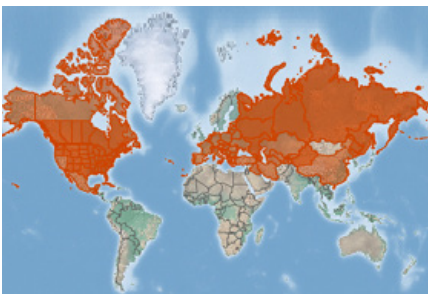
Pest and Diseases Image Library,  
Bugwood.org

**Colorado potato beetle**  
*(Leptinotarsa decemlineata)*,  
adult – dorsal view



Gerald Holmes, Strawberry Centre,  
Cal Poly San Luis Obispo, Bugwood.org

**Colorado potato beetle**  
*(Leptinotarsa decemlineata)*,  
larva feeding on potato plant



© CAB International, PlantwisePlus  
Knowledge Bank CC BY-NC-ND 4.0

**Current distribution of the**  
**Colorado potato beetle**  
*(Leptinotarsa decemlineata)*

## Potential hosts in Australia

Crops impacted by the Colorado potato beetle include eggplant, capsicum, chilli, tomatoes, potatoes. Larvae and beetles feed on tubers, leaves, stems and growing points of the host plant. Wild solanaceous volunteer weeds act as a secondary hosts for the beetle. Native hosts are unknown.

## What will I see?

Eggs laid in rows or masses are found on the underside of leaves, stalks, and stems. Leaves are eaten by larvae, creating a skeletonised effect. Larvae also target the host plants' growing tips, buds and petioles. Adults and larvae can strip and defoliate plants, leaving deposits of black sticky excrement. Exposed tubers/potatoes will occasionally be damaged by the adult beetles.

## How does it travel?

Naturally spread by wind, the beetle can be transported up to 160 km. Other long-distance pathways include the importation of soil, sand and gravel, plants, tubers, leaves and stems. Beetles and larvae can hitchhike on imported produce, such as potato plants, tubers, and non-host plants or in soil as overwintering adult beetles. The beetle can also be spread via plant or farm machinery and all forms of packaging.

## When will I see it?

In early spring, when conditions are favourable, adult beetles will emerge from the soil in mass where they had been overwintering during the cooler months.

## Where is it now?

Found throughout most of the Northern Hemisphere, including parts of Europe, Russia, parts of Asia and Central and North America. It was eradicated from the UK at least twice.



**Report a suspected sighting of a Colorado Potato Beetle by calling the Exotic Plant Pest Hotline 1800 084 881 or at [agriculture.vic.gov.au/reportaplantpest](https://agriculture.vic.gov.au/reportaplantpest) or using the QR Code**



It is important to report any unusual plant pest or disease immediately to increase the chance of effective control and eradication. Please take quality photos of the pests or damage to include in your report where possible. Information on how to take a quality photo for identification can be found on our reporting page.

Disclaimer: This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. Information is correct as of December 2023.

# Electric ant (Little fire ant)

*Wasmannia auropunctata*

**INTRODUCED PEST – not present in Victoria**

Banner image: © Phillip Hoenle, iNaturalist.org



Pest and Disease Library, Bugwood.org  
(CC BY-NC 3.0 US) Modified

**Electric ant (*Wasmannia auropunctata*)**



Philipp Hoenle, iNaturalist.org Public  
Domain (CC0 1.0)

**Electric ant (*Wasmannia auropunctata*)**

## Why is this pest a concern?

Electric ants (*Wasmannia auropunctata*) are a highly invasive exotic species to Australia, and has been described as the greatest ant threat in the Pacific region. Found near Cairns, in Northern Queensland in 2006, it is now distributed throughout Cairns and surrounding areas. It dominates, displaces, and reduces diversity, causing a decline in populations of invertebrates, small vertebrates and reptiles. Electric ants can negatively impact primary producers by increasing the numbers of sap-sucking insects, which cause sooty mould, creating a reduction in plant vigour and potential dieback. The electric ant impacts peoples' lifestyles and health, and is known for its painful sting. It can be difficult for agricultural workers harvesting crops as painful stings are a major concern.

Managing electric ants causes economic and environmental stress with increased use of herbicides and pesticides.

## How do I identify it?

Worker electric ants are 1-2 mm long, light to golden-brown and not easily detected. The abdomen is often darker than the rest of the body. They have clubbed antenna which are attached to a characteristic groove that extends to the back of the head. The thorax has two large backward pointing spines and is separated from the bulge of the abdomen by a narrow waist, with two small segments. The body is sparsely covered with erect hairs, and a venomous stinger is attached at the rear of the abdomen. The stinger produces a painful long-lasting sensation and can cause severe anaphylactic reactions in some individuals.

Behaviourally, the electric ant moves slower and in distinctive lines, than other similar ant species. It does not create a typical ants nest or mound, but rather establishes colonies in suitable environments.

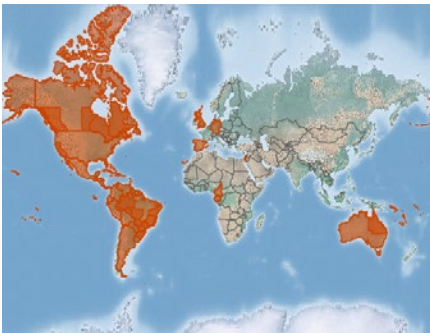
## Potential hosts in Australia

Electric ants consume food from a variety sources, including seeds, decaying vegetation, plants and nectar from flowers. They feed on honeydew produced by sap-sucking insects, and then predate on those insects. They are scavengers, and prey on small and large insects, including small reptiles.



Eli Sarnat, PIAkey: Invasive Ants of the Pacific Islands, USDA APHIS PPQ, Bugwood.org (CC BY-NC3.0 US)

### **Electric ant (*Wasmannia auropunctata*)**



© CAB International, PlantwisePlus Knowledge Bank CC BY-NC-ND 4.0

### **Current distribution of the Electric ants (Little fire ant) (*Wasmannia auropunctata*)**

Electric ants are currently found in Australia, but confined to Queensland.

## **Where will I find it?**

Small nests can be found in or under a variety of places, including trees, bark, soil, compost, leaf litter, rocks and wood piles. Electric ants can invade urban homes, swimming pools, rubbish piles, road margins, building sites, drains and culverts and electrical equipment. They favour moist undisturbed sites, with shade and an established food source. Electric ants are common in mature wet tropical rainforests but can adapt to dry arid environments.

## **What will I see?**

Electric ants are often found in slow moving trails when foraging or moving to drier ground in times of rain. They can be associated with outbreaks of sap-sucking insects, and sooty mould in crops. Livestock and pets may acquire corneal clouding from their caustic sting, causing blindness if not treated.

## **How does it travel?**

Human activity enables electric ants to travel long distances along transport pathways with the movement of potted plants, plant cuttings, garden waste and mulch, turf, soil, bales of hay and straw, furniture, industrial waste, imported materials, Once the ant is established, depending on the conditions, it can spread up to 500 metres per year.

## **When will I see it?**

You are more likely to come into contact with Electric ants outdoors; in the garden, harvesting crops or in swimming pools. The ants are most active when they are foraging for food when the ground temperature is above 30°C.

## **Where is it now?**

Native to Central and South America, it is now established in the West Indies, West Africa, Galapagos Islands, French Polynesia, New Caledonia, the Solomon Islands, Spain, Israel, Hawaii, and it is currently in Northern Queensland, Cairns and surrounding areas.



**Report a suspected sighting of Electric ant by calling the Exotic Plant Pest Hotline 1800 084 881 or at [agriculture.vic.gov.au/reportaplantpest](https://agriculture.vic.gov.au/reportaplantpest) or using the QR Code**



It is important to report any unusual plant pest or disease immediately to increase the chance of effective control and eradication. Please take quality photos of the pests or damage to include in your report where possible. Information on how to take a quality photo for identification can be found on our reporting page.

Disclaimer: This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. Information is correct as of December 2023.



# European hornet

*Vespa crabro*



## EXOTIC PEST – not present in Australia

Banner image: Vespa-watch, iNaturalist.org



iNaturalist.org Public Domain Public Domain Mark 1.0

European hornet (*Vespa crabro*)



Allan Smith-Pardo, Invasive Hornets, USDA APHIS PPQ, Bugwood.org (CC BY-NC 3.0 US)

European hornet (*Vespa crabro*), anterior view of head

### Why is this pest a concern?

The invasive European hornet (*Vespa crabro*), is a predatory pest directly impacting honey bee colonies and other native insects. They can damage plants and are a threat to humans because they can be aggressive when threatened. Their sting can be highly dangerous to individuals who are allergic.

### How do I identify it?

The adult European hornet has a red-brown and yellow head with deeply indented eyes that are C-shaped. Their thorax is black and reddish brown with a narrow waisted-abdomen and reddish-orange wings. The abdomen is predominantly yellow with black stripes adorned by black teardrops. Both the thorax and abdomen are hairy, somewhat less than other species of hornets.

The queen is 35 mm long with a six-segmented abdomen and an antenna with 12 segments. Worker bees are around 25 mm long, Males have a seven-segmented abdomen, and an antenna with thirteen segments. Only the females possess stingers.

### Where will I find it?

Hornets gnaw on the bark of certain bushes and trees, producing a chewed wood pulp mixed with saliva to build their nests. Their nests are built in urban and farming regions and deciduous woodlands, usually in protected aerial areas, such as hollows in trees or high up on walls. They're attracted to fallen sweet fruit in orchards and large insects.

### Potential hosts in Australia

European hornets are carnivorous feeders, preying on large insects such as beetles, grasshoppers, wasps, large moths, dragonflies, mantises, and honey bees. Adults mainly feed on sap and nectar. Sap-feeding behaviour may girdle twigs and branches, particularly lilac, birch, ash, chestnut, dogwood, dahlia, rhododendrons and boxwood.



Hanna Royals, Museum Collections, Hymenoptera, USDA APHIS PPQ, Bugwood.org (CC BY-NC 3.0 US)

**European hornet (*Vespa crabro*), dorsal view**



Louis-Michel Nageleisen, Département de la Santé des Forêts, Bugwood.org (CC BY 3.0 US)

**European hornet (*Vespa crabro*), eating bark of Ash**



Professor Nico Blüthgen, iNaturalist.org Public Domain(CC1.0)

**European hornet (*Vespa crabro*), adult**

## What will I see?

European hornets will ring bark trees to collect fibrous wooden materials which they mix with saliva and soil to use as a building material for their nests. Nests are typically large and paper-like found in hollow trees or human structures such as attics but are occasionally subterranean. The hornets will feed on tree sap, ripe fruits, and flowers in the field, scavenge from other insects in autumn and attack honeybee hives depending on the health of the honeybees and the phase of the hornets' population expansion. European hornet displays a behavioural dance which is buzzing and darting in and around the nest, communicating to one another to be on alert.

## When will I see it?

Fertilised queens overwinter and wake up in spring to create a new nest. Mid spring to summer is their peak time of year, reaching up to 1000 workers, in large hives.

## How does it travel?

Nests and hornets can be imported through international cargo via sea and air, on untreated timber and plant material including imported fruits and through soil.

## Where is it now?

Originating in Eurasia, they now in habitat Japan, the United Kingdom, North America, and Guatemala.



**Report a suspected sighting of a European hornet by calling the Exotic Plant Pest Hotline 1800 084 881 or at [agriculture.vic.gov.au/reportaplantpest](https://agriculture.vic.gov.au/reportaplantpest) or using the QR Code**



It is important to report any unusual plant pest or disease immediately to increase the chance of effective control and eradication. Please take quality photos of the pests or damage to include in your report where possible. Information on how to take a quality photo for identification can be found on our reporting page.

Disclaimer: This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. Information is correct as of December 2023.

# European house borer

*Hylotrupes bajulus*

**INTRODUCED PEST – not present in Victoria**

Banner image: © CSIRO



© CSIRO

European house borer (*Hylotrupes bajulus*), adult



© CSIRO

The larvae of the European house borer feed on softwood timber and the mature adults bore holes to exit the timber.

## Why is this pest a concern?

The European house borer (*Hylotrupes bajulus*) is a highly destructive quarantine pest of untreated, seasoned, softwood timber which has economic and environmental impacts including damaging structural timber used to construct buildings, joinery and wooden products including furniture.

## How do I identify it?

European house borer (EHB) adults are 18 to 26 mm long. Females are larger than males. Both are brown to black with a grey fine furriness and a slightly flattened appearance. Adults usually have two slight whitish-grey spots on their outer wings. Antennae are approximately one third the length of the body, with two black, shiny knobs on the segment closest the head.

Identifying characteristic of larvae are three tiny black eyespots in a row on both sides of the mouth area. Bodies of larvae are creamy-white, elongated and cylindrical, and up to 40 mm in length with a slightly flatter, larger head. Developing larvae remain inside the host tree.

## Where will I find it?

EHB is found in susceptible dead trees and live trees with dead limbs.

Larvae are in deep tunnels in the outer layers of tree trunks and branches.

Untreated host timber that is exposed, like studs, joists, roofing timbers, doors and architraves, firewood and wood piles are all susceptible to EHB damage.

## Potential hosts in Australia

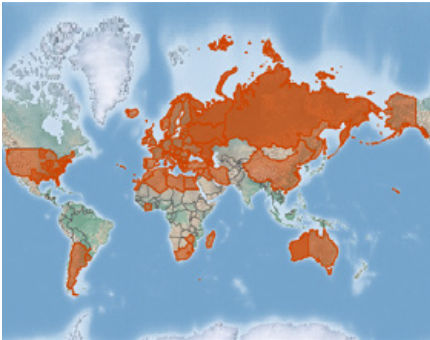
EHB larvae damage coniferous softwoods such as pine, fir, and spruce. The trees can be alive or dead, with a moisture content of more than 10 %. Native hosts are unknown.





© CSIRO

**European house borer (*Hylotrupes bajulus*), larvae – anterior view.**



© CAB International, PlantwisePlus Knowledge Bank CC BY-NC-ND 4.0

**Current distribution of the European house borer (*Hylotrupes bajulus*)**

The European house beetle is found in Australia, but confined to Western Australia.

## What will I see?

Oval to round shaped exit holes created by the emerging beetle are 5 to 10 mm in diameter, running in line with the grain of host trees. Frass found below exit holes consists of tightly packed, coarse powder and small pellets.

It is difficult to detect early borer damage, as trees may have been infested for years before showing any signs or symptoms. Chewing sounds made by the larvae can be heard during the active months.

Larvae are rarely seen as they develop inside the host tree. It is not until timber is cut, for firewood or building materials that larvae are seen.

Eggs are sometimes evident in cracks and crevices.

## When will I see it?

EHB beetles emerge from September through to April and can live up to 21 days. The beetles prefer to stay close to their host tree and reinfest again. They also prefer temperate habitats, and hence are found in many coastal regions.

Eggs are present for a couple of weeks before hatching. Larvae can be found in trees for up to 12 years depending on the trees moisture content, species, age of the host wood and temperature. (In Perth, W.A., larvae mature between 2 and 5 years).

## How does it travel?

EHB are strong fliers but prefer to stay near the original host tree, providing the food source is still available.

EHB travel long distances in shipments of infested logs and lumber from host countries. Infestations can occur when wood is processed and stored outside in ideal conditions. This gives the beetles a greater chance to lay eggs, and due to long larval development stages, timber can harbour developing larvae for up to 12 years.

## Where it is now?

Found in Europe, Middle East (Turkey), north Africa, South Africa, South America, USA, and China. Endemic in Perth Western Australia since first detected in 2004.



**Report a suspected sighting of a European house borer by calling the Exotic Plant Pest Hotline 1800 084 881 or at [agriculture.vic.gov.au/reportaplantpest](https://agriculture.vic.gov.au/reportaplantpest) or using the QR Code**



It is important to report any unusual plant pest or disease immediately to increase the chance of effective control and eradication. Please take quality photos of the pests or damage to include in your report where possible. Information on how to take a quality photo for identification can be found on our reporting page.

Disclaimer: This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. Information is correct as of December 2023.

# Oriental fruit fly

*Bactrocera dorsalis*



## INTRODUCED PEST – not present in Victoria

Banner image: © CSRIO



Pest and Diseases Image Library,  
Bugwood.org (CC BY-NC 3.0 US)

Oriental fruit fly (*Bactrocera dorsalis*) lateral view,  
Collection specimen



Pest and Diseases Image Library,  
Bugwood.org (CC BY-NC 3.0 US)

Oriental fruit fly (*Bactrocera dorsalis*), dorsal view,  
Collection specimen

### Why is this pest a concern?

Oriental fruit fly (*Bactrocera dorsalis*) is one of the most damaging horticultural pests globally, impacting over 400 varieties of fruits and vegetables. Female fruit flies inject eggs into the fruit, and after hatching larvae tunnel through the fruit feeding. Considerable damage can be caused before an infestation is observed, and entire crops can be lost if unprotected. This species is not present in Australia but is established in many nations in Oceania and Asia. Thus, the risk of incursions into Australia are high and would result in significant economic impact. Eradication of the 1995 Oriental fruit fly incursion in Cairns cost \$33 million and took 4 years.

### How do I identify it?

Adults are small, 6–8 mm in length, and have clear wings with a narrow, brown band extending along the anterior margin. The head has large facial spots, and the thorax is red brown to black and has two longitudinal yellow stripes dorsally. The abdomen is yellow to golden-brown with a dark 'T' shape present on the last three segments. The fourth segment (tibia) of the fore and hind-legs are dark, whereas they are yellow on the mid-legs. Eggs are white to yellow, 1 mm long by 0.2 mm wide. Larvae resemble standard maggots, are white and up to 10 mm in length. Larvae drop to the soil to pupate. Pupae range in colour from white to brown, are cylindrical in shape and around 5 mm in length.

### Where will I find it?

Adults feed on nectar and decaying fruit and will travel relatively large distances to find new egg laying sites. Eggs and larvae are found within fruit and pupae in the soil under fruit. Unlike most fruit flies, including the local Queensland fruit fly, Oriental fruit fly can also infest immature, green and hard fruit.



Caleb O'Reilly iNaturalist.org (CC0 1.0)  
Public Domain

**Fruit fly (*Bactrocera dorsalis*), introduced to Oahu, Honolulu the United States, arrived in the region via anthropogenic means.**

## Potential hosts in Australia

Oriental fruit fly has been recorded from over 490 varieties of fruit and vegetables, including apricot, avocado, banana, citrus, fig, guava, loquat, mango, papaya, passionfruit, peach, pear, persimmons, pineapple, and tomato. The wide host range of the species means that it may occur on a considerable number of native plant species as well.

## What will I see?

Typical signs include necrosis around oviposition puncture marks, rotting of fruit and/or premature fruit drop. Larvae drill exit holes to drop into the soil for pupation.

## When will I see it?

Oriental fruit fly prefers tropical conditions but is active between 6 and 35°C. Its occurrence is related to seasonal suitability of overwintering conditions and an increase of populations can be related to monsoonal weather patterns.

---

## What could it be confused with?

Oriental fruit fly can be easily confused with the exotic *Bactrocera carambolae* (Carambola fruit fly), and the native species, *Bactrocera musae* (Banana fruit fly) and *Bactrocera endiandrae* (no common name). Variations in the shape of structures on the thorax and wing and abdominal patterns can distinguish one species from the other. More detail can be found at [www.fruitflyidentification.org.au/](http://www.fruitflyidentification.org.au/)



Natasha Wright, Braman Termite & Pest Elimination, Bugwood.org (CC BY-NY 3.0 US)

***Bactrocera carambolae***



Pest and Diseases Image Library, Bugwood.org (CC BY-NC 3.0 US)

***Bactrocera musae***



© Valryr iNaturalist.org (CC BY-NC 4.0)

***Bactrocera endiandrae***





iNaturalist.org (Taiwan) (CC0 1.0)  
Public Domain

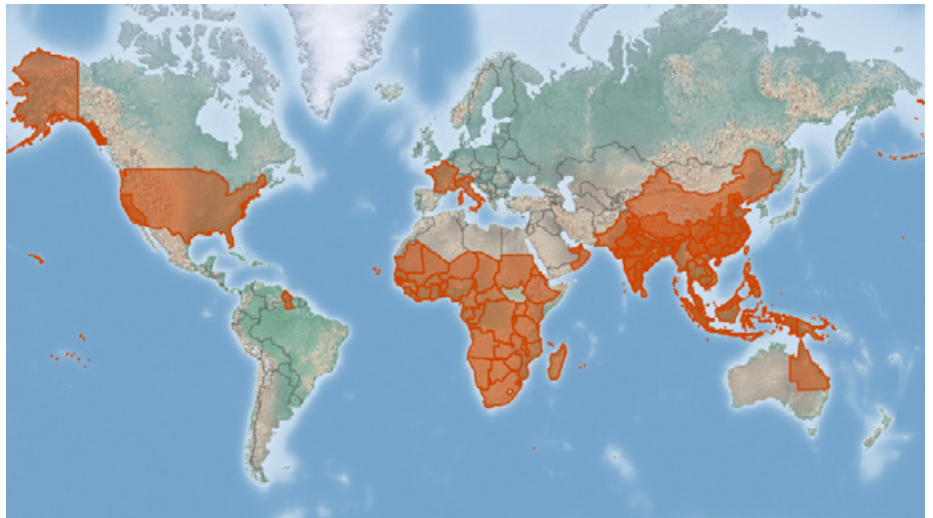
**Fruit fly (*Bactrocera dorsalis*),  
on fruit, taken in Taiwan**

## How does it travel?

Oriental fruit fly is capable of long-distance flight and can be spread by weather systems like storms and monsoonal winds, which are the cause of incursions onto the Torres Strait Islands and/or Far North Queensland most years. Illegal importation of infested produce is also a likely source of an incursion.

## Where is it now?

Presently widespread in Africa and Asia, Papua New Guinea, Palau, French Polynesian and Hawaii.



© CAB International, PlantwisePlus Knowledge Bank CC BY-NC-ND 4.0

### Current distribution of the Oriental fruit fly (*Bactrocera dorsalis*)

Oriental fruit fly is found on the Australian territory of Christmas Island. Transient seasonal populations occur in the Torres Strait Islands and Far North Queensland but are promptly eradicated. The species is considered not present on the Australian mainland.



**Report a suspected sighting of a Oriental fruit fly by  
calling the Exotic Plant Pest Hotline 1800 084 881 or at  
[agriculture.vic.gov.au/reportaplantpest](https://agriculture.vic.gov.au/reportaplantpest) or using the QR Code**



It is important to report any unusual plant pest or disease immediately to increase the chance of effective control and eradication. Please take quality photos of the pests or damage to include in your report where possible. Information on how to take a quality photo for identification can be found on our reporting page.

Disclaimer: This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. Information is correct as of December 2023.

# American serpentine leafminer

*Liriomyza trifolii*

**INTRODUCED PEST – not present in Victoria**

Banner image: © CSIRO



Central Science Laboratory, Harpenden,  
British Crown, Bugwood.org (CC BY-NC  
3.0 US)

**American serpentine leaf  
miner (*Liriomyza trifolii*) adult**

## How do I identify it?

Adults of American serpentine leafminer are small flies less than 2 mm in total body length, with transparent wings 1.3–1.9 mm in length. The adult body is greyish-black, with a yellow ventral surface, legs, and head. Eyes are reddish-brown. Eggs are clear to white, laid on the underside of leaves, and are unlikely to be noticed by the naked eye. Larvae lack legs, range from colourless to yellow-orange and reach up to 3 mm in length. Larvae usually leave the leaf and pupate in the soil. Pupae are 1.2–2.3 mm long, 0.5–0.75 mm wide, oval with a slight ventral compression, and range from yellow to dark brown in colour.

## Where will I find it?

Mainly in the leaf tissue of young host plants, although plants of any age are susceptible.

## Why is this pest a concern?

Exotic leafminers pose a significant threat to multiple Australian horticultural industries through damage to leaves from larvae tunnelling through. Photosynthesis is inhibited and opportunities for bacterial and fungal diseases to infect plants are increased. Many damaging species of leafminer are widespread overseas, including multiple near-neighbour nations and trading partners, which means the risk of these species becoming established in Australia is high. The American serpentine leafminer (*Liriomyza trifolii*) has been detected in Qld, WA and the NT and is one of the species of highest concern for Victoria.

## Potential hosts in Australia

American serpentine leafminer is a polyphagous species reported from over 170 plant hosts across 29 families. Major crop hosts include beans and peas, cabbage, capsicum, chilis, tomatoes and potatoes, celery, cucumbers, eggplants, lettuce, and onions. Many common weeds, especially in the Aster and Nightshade families, are also hosts.



UGA0660019

© Central Science Laboratory, Harpenden, British Crown, Bugwood.org

**American serpentine leafminer (*Liriomyza trifolii*), damage on florist's daisy (*Chrysanthemum x morifolium*)**



© Ericlopresti, iNaturalist.org, (CC BY-NC 4.0)

**American serpentine leafminer (*Liriomyza trifolii*), damage**

## When will I see it?

Most commonly in warmer months as reproduction is less successful in cooler regions, but also year-round in greenhouses.

## What will I see?

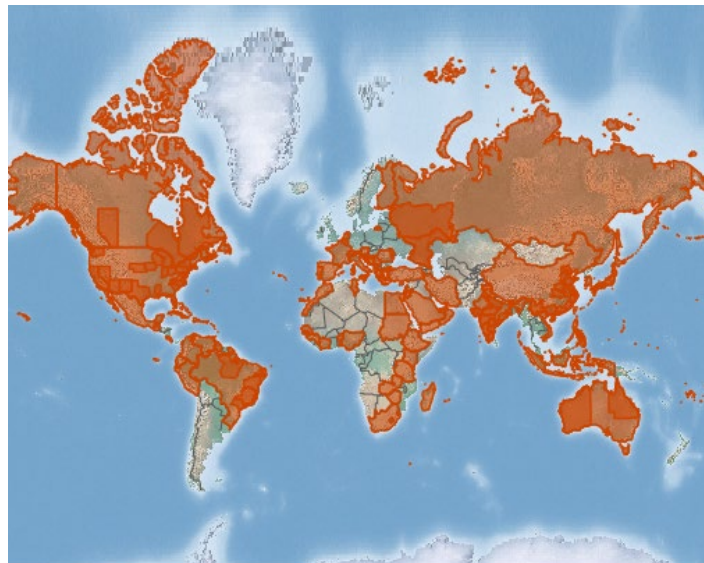
The most obvious symptom of leafminer infestation is the presence of tracks of eaten tissue (mines) under the surface of leaf tissues which commonly appear white, with black and brown patches. The pattern of these tracks is irregular to serpentine and the size of the mine trail increases in size as the larva making them matures. Feeding and oviposition activity by adult females can also lead to stippling of leaves, most commonly along leaf margins and tips. Heavy infestation may lead to premature leaf drop, wilting, and defoliation.

## How does it travel?

The small size of adults means that they have a limited ability to disperse over long distances themselves. Rather, dispersal over long distances is by hitchhiking on planting and nursery material, soil and cut flowers.

## Where is it now?

The American serpentine leafminer is endemic to North America but has become established in multiple countries on all inhabited continents. In Australia it has been found on the Torres Strait islands, the northern peninsula area of Queensland and northern Western Australia.



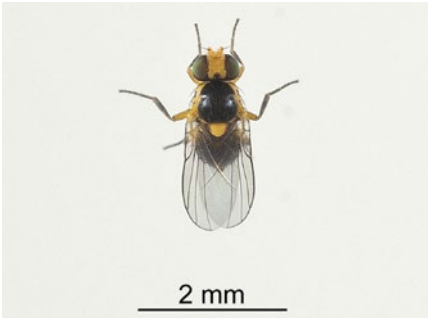
© CAB International, PlantwisePlus Knowledge Bank CC BY-NC-ND 4.0

### **Current distribution of the American serpentine leaf miner (*Liriomyza trifolii*)**

The American serpentine leafminer is present but not widely established in Australia, being confined to Far North Queensland (tip of Cape York Peninsula) and northern Western Australia.



## What could it be confused with?



© Plant and Food Research: N A Martin (2007) Cabbage Leafminer - *Liriomyza brassicae*. New Zealand <https://interestinginsects.landcaserecherche.co.nz>

**Cabbage leafminer**  
*(Liriomyza brassicae)*  
Detected in Victoria, New South Wales, Queensland, and South Australia.



Central Science Laboratory, Harpenden. British Crown, Bugwood.au (CC BY-NC 3.0 US)

**Pea leafminer** (*Liriomyza huidobrensis*)  
An exotic species established in Victoria, New South Wales, and Queensland since 2020.



Dr Elia Pirtle, Cesar Australia

**Vegetable leafminer**  
*(Liriomyza sativae)*  
Detected in Torres Strait and Northern Peninsula Area of Queensland in 2015, under official control.



© Koppert 2023

**Vegetable leafminer**  
*(Liriomyza bryoniae)*  
Not present in Australia



Chickpea leafminer (*Liriomyza cicerina*), Alice Ames, DPI Victoria, PaDIL.gov.au (CC BY-NC 4.0)

**Chickpea leafminer**  
*(Liriomyza cicerina)*  
Not present in Australia



**Report a suspected sighting of a American serpentine leafminer by calling the Exotic Plant Pest Hotline 1800 084 881 or at [agriculture.vic.gov.au/reportaplantpest](http://agriculture.vic.gov.au/reportaplantpest) or using the QR Code**



It is important to report any unusual plant pest or disease immediately to increase the chance of effective control and eradication. Please take quality photos of the pests or damage to include in your report where possible. Information on how to take a quality photo for identification can be found on our reporting page.

Disclaimer: This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. Information is correct as of December 2023.

# Giant African snail

*Lissachatina fulica*,  
(synonym *Achatina fuliica*)



## EXOTIC PEST – not present in Australia

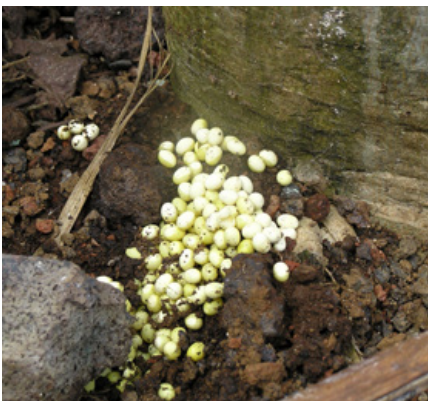
Banner image: Scot Nelson Flickr 2016 Public Domain (CC0 1.0)

Giant African snail (*Achatina fulica*)



Scot Nelson Flickr 2011 Public Domain  
(CC0 1.0)

Giant African snails  
(*Lissachatina fulica*)  
on papaya



Scot Nelson Flickr 2011 Public Domain  
(CC0 1.0)

Giant African snail  
(*Lissachatina fulica*) eggs  
at the base of a papaya stem.

### Why is this pest a concern?

The exotic Giant African snail (*Lissachatina fulica*) is one of the world's largest and most damaging land snails, causing serious economic and environmental impacts. It is known to feed on over 500 species of plants, causing serious biodiversity loss within its native and introduced ranges. It poses significant health risk to humans and animals by carrying rat lung worm, a parasite that can cause meningitis. It can spread bacteria, fungal and parasitic pathogens that impact plants and humans. Do not pick these snails up without wearing gloves.

### How do I identify it?

The adults are big, with shells usually between 50–100 mm long, but can be up to 200 mm, weighing up to 1 kg.

The shell is long and conical-shaped, half as wide as long, generally light brown with alternating brown and cream bands with faint yellowish vertical markings on the upper ridges or whorls. Diet and environment influence shell colour variations. All fully grown snails have 7 to 9 whorls on their shells.

Eggs are spherical to oval shaped and measure 4.5–5.5 mm in diameter. Their colour ranges from cream to yellow. Eggs hatch at temperatures above 15°C. Snails can lay between 100–400 eggs in batches, potentially laying 1200 eggs in a year.

### Where will I find it?

Giant African snails need to protect themselves from the sun, therefore you will find them hiding under timber piles, roofing iron and between rocks. The snails burrow into the soil, where they feed on plant material, nursery stock, decomposing leaf litter, compost and other forms of rotting organic matter. Imported goods, cars and machinery, shipping containers and crates are all places snails will hide to escape from the sun.



Andrew Derksen, USDA-APHIS,  
Bugwood.org (CC BY-NC 3.0 US)

### **Giant African snail (*Lissachatina fulica*), adult.**



© CAB International, PlantwisePlus  
Knowledge Bank CC BY-NC-ND 4.0

### **Current distribution of the Giant African snail (*Lissachatina fulica*)**

## **Potential hosts in Australia**

Giant African snails are ferocious eaters, feeding on more than 500 plant species. Potential hosts range from Australian native and naturalised plants to agricultural crops across multiple ecosystems.

Many important crops are hosts of the Giant African snail including banana, bean, breadfruit, cabbage, cacao, carrot, cauliflower, cassava, cotton, cucumber, eggplant, marigold, melons, noni, okra, papaya, peas, pumpkin, sponge gourd and taro.

## **What will I see?**

Look for large snail trails, live snails, or large empty cone-shaped shells. Egg masses may be found on imported produce and any cargo from shipping containers or crates. You will see unusually high levels of damaged plant material within agricultural crops, fruit and vegetables, native and ornamental plants, forests, and non-agricultural environments.

## **When will I see it?**

Giant African snails are nocturnal feeders; you will see them travelling along fences and walls after dusk to find food. They also travel on overcast, rainy days.

## **How does it travel?**

Giant African snails can hitch hike on shipping containers, crates, machinery, motor vehicles and imported plant material or in soil, including as eggs. Illegal importation as pets may be an issue. Adult snails are hermaphrodites, with both male and female sexual organs, but reproduction cannot occur without a mate.

## **Where is it now?**

Originally from the East coast of Africa, it has now spread to South and Southeast Asia, Oceania, the U.S.A and Canada.



**Report a suspected sighting of a Giant African snail  
by calling the Exotic Plant Pest Hotline 1800 084 881 or at  
[agriculture.vic.gov.au/reportaplantpest](https://agriculture.vic.gov.au/reportaplantpest) or using the QR Code**



It is important to report any unusual plant pest or disease immediately to increase the chance of effective control and eradication. Please take quality photos of the pests or damage to include in your report where possible. Information on how to take a quality photo for identification can be found on our reporting page.

Disclaimer: This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. Information is correct as of December 2023.



# Glassy-winged sharpshooter

*Homolodisca vitripennis*



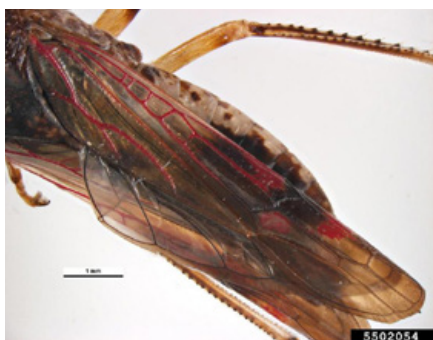
## EXOTIC PEST – not present in Australia

Banner image: © CSIRO



© Russ Ottens, University of Georgia, Bugwood.org

**Glassy-winged sharpshooter (*Homolodisca vitripennis*), adult on sunflower.**



© Pest and Diseases Image Library, Bugwood.org

**Glassy-winged sharpshooter (*Homolodisca vitripennis*), wing close-up.**

### Why is this pest a concern?

Glassy-winged sharpshooter (*Homolodisca vitripennis*) is an invasive insect which is a major threat to crops and ornamental plants. In addition to direct damage through sap sucking, the sharpshooter is a vector for *Xylella fastidiosa*, a bacterium which is a serious threat to Australia's viticulture, citrus, stonefruit, tree nut and nursery production industries.

### How do I identify it?

Glassy-winged sharpshooter adults are 13–14 mm long. The thorax is dark brown with stippled ivory yellow spots on the head and back. The transparent wings have prominent red-marked veins. The under belly is a lighter white colour, flecked with dark spots.

Nymphs are smaller versions of the adult but lacking fully developed wings and are dark grey in colour.

Clusters of 10–12 elongated eggs are laid side-by-side on the underside of leaves.

### Where will I find it?

Glassy-winged sharpshooter are sap suckers and often found feeding on woody plant tissues such as stems, trunks, branches and leaf petioles.

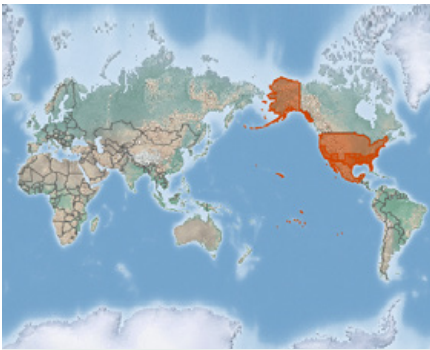
### Potential hosts in Australia

Glassy-winged sharpshooter is a stem feeder on approximately 300 species of ornamental and crop plants. Examples include blueberries, almonds, cherries, citrus, coffee, grapes, peaches, plums, Bougainvillea, Camellia, Acacias, crepe myrtles, Chrysanthemum, lemons, macadamia, and pistachios. Susceptible natives include kangaroo paw, walking stick palm, bottle tree, flax lilies, native frangipani, grevilleas, tea-tree, macadamias and the endangered Wollemi pines.



John Hartman, University of Kentucky, bugwood.org (CC BY-ND 3.0 US)

**Brown, irregular 'islands' of necrosis on young grape vines infected with *Xylella fastidiosa* (Pierce's disease) on grape (*Vitis* spp.)**



© CAB International, PlantwisePlus Knowledge Bank CC BY-NC-ND 4.0

**Current distribution of the Glassy-winged sharpshooter (*Homolodisca vitripennis*)**

## What will I see?

Glassy-winged sharpshooter excrete droplets of clear liquid in copious quantities as a result of feeding. Known as "leafhopper rain", this can leave powdery white residue on plant surfaces where feeding has occurred. Leaves can have a white-washed appearance as a result. Older foliage will be scarred tan or brownish-grey where eggs have hatched.

Symptoms vary on host but typically include, drying, scorching, chlorosis, dwarfing, wilting of foliage, defoliation, dieback and potential death of the plant.

If *X. fastidiosa* is introduced by the sharpshooter, 600 plant species could be affected. Symptoms include withering and desiccation of branches, leaf yellowing, dwarfing or lack of plant growth and a drooping appearance of the plant. Fruit may shrivel or harden and leaves and fruit may drop. Eventually the plant will die. (NOTE *X. fastidiosa* is itself a notifiable biosecurity disease.)

## When will I see it?

Eggs are laid in late winter or early spring and nymphs appear about two weeks later. In summer a second batch of eggs may be laid.

## How does it travel?

Glassy winged sharpshooter adults are strong fliers and can move readily from plant to plant. Nymphs can walk to new hosts and both nymphs and eggs can hitch-hike on nursery stock, crops, ornamental plants, in fruit and leaves.

## Where it is now?

Native to south-eastern United States, it has spread to western USA, Mexico, Chile, Tahiti, French Polynesia, Hawaii, Easter Island, and the Cook Islands.



**Report a suspected sighting of a Glassy winged sharp by calling the Exotic Plant Pest Hotline 1800 084 881 or at [agriculture.vic.gov.au/reportaplantpest](https://agriculture.vic.gov.au/reportaplantpest) or using the QR Code**



It is important to report any unusual plant pest or disease immediately to increase the chance of effective control and eradication. Please take quality photos of the pests or damage to include in your report where possible. Information on how to take a quality photo for identification can be found on our reporting page.

Disclaimer: This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. Information is correct as of December 2023.

# Khapra beetle

*Trogoderma granarium*



## EXOTIC PEST – not present in Australia

Banner image: © CSIRO



© James D. Young, USDA APHIS PPG, Bugwood.org

**Khapra beetle (*Trogoderma granarium*), larva**



© Pest and Diseases Image Library, Bugwood.org

**Khapra beetle (*Trogoderma granarium*), adult – lateral view**



© Pest and Diseases Image Library, Bugwood.org

**Khapra beetle (*Trogoderma granarium*), adult – dorsal view**

### Why is this pest a concern?

Khapra beetle (*Trogoderma granarium*) is a devastating pest of stored grains and other dried food products. If Khapra beetle were to become established in Australia it would have a significant negative impact on Australia's grain industries through damage to domestic stockpiles and disruption of international trade.

### How do I identify it?

Adult beetles are 1.6–3 mm long, 1–2 mm wide, with an oval-shaped body. They range from light yellow to dark brown in colour. The head is darker in colour than the wing covers (elytra). Elytra are covered with fine hairs and often include indistinct transverse markings. The underside of the body is typically red-brown, and the legs are usually yellow-brown. Antennae are short and clubbed.

Eggs are less than 1 mm long and white to pale yellow. Larvae are elongate, up to 7 mm long, segmented and very hairy, especially at the tail end. Early instar larvae are white to pale yellow, but the larvae darken to a red or golden brown as they grow. Pupae look similar to late-stage larvae.

### Where will I find it?

Most likely in imported stored food products such as grains, legumes, rice, and nuts. Khapra beetle can also be found in containers used for storage and transport of food (e.g., refrigerators, cartons, shipping containers). Beetles can hide in cracks, gaps, under floors, and in packing materials. Notably, larvae can survive for long periods without food. The larval hairs can be an irritant and even cause allergic reactions in some people.

### Potential hosts in Australia

Khapra beetle is primarily a pest of grains and cereal products like rice, corn, wheat, soybean, and barley but can also feed on many other food products such as dried nuts, legumes, coconut, spices and condiments.

### What will I see?

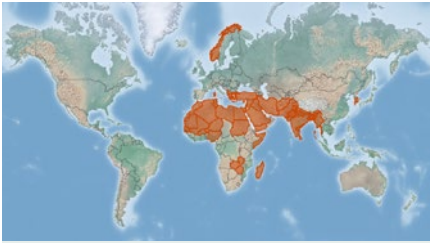
Typical signs of Khapra beetle infestation are the presence of large numbers of hairy larvae, cast larval skins from moulting, and dusty masses of insect waste (frass). Stored food products may show obvious signs of damage. In shipping containers there may be larval skin casts, contaminants and signs of chewed packaging.





© Central Science Laboratory, Harpenden, British Crown, Bugwood.org

**Khapra beetle (*Trogoderma granarium*), adult and larvae.**



© CAB International, PlantwisePlus Knowledge Bank CC BY-NC-ND 4.0

**Current distribution of the Khapra beetle (*Trogoderma granarium*)**

## When will I see it?

Year-round, but reproduction is likely to accelerate during the warmer weather.

## How does it travel?

Khapra beetle is commonly spread through trade, primarily in infested stored and dried food products. As the larvae can live for a long time without food they are spread long distances in shipping containers, appliances, furniture, and packaging material.

## Where is it now?

Khapra beetle is endemic to South Asia, but has become established in several southeast Asian countries, throughout the Middle East, North Africa, and some southern African nations.

## What could it be confused with?

The Khapra beetle is very difficult to differentiate from a number of other introduced and native beetles in the same family (*Dermestidae*). Definitive diagnosis requires microscopic examination or molecular confirmation by an expert. The most likely species that may be confused with Khapra beetle in Victoria are the common varied carpet beetle (*Anthrenus verbasci*), *Attagenus pellio* and *Attagenus unicolor*, *Orphinus woodvillensis*, and many native species of the genus *Eurhopalus* (see images below).



© CSIRO

***Anthrenus verbasci***  
(carpet beetle)



© CSIRO

***Attagenus pellio***  
(two-spotted carpet beetle)



© Carnifex iNaturalist.org (CC BY 4.0)

***Attagenus unicolor***  
(black carpet beetle)



© CSIRO

***Orphinus woodvillensis***



© CSIRO

***Eurhopalus froggatti***



© CSIRO

***Eurhopalus apicipennis***



**Report a suspected sighting of a Khapra beetle by calling the Exotic Plant Pest Hotline 1800 084 881 or at [agriculture.vic.gov.au/reportaplantpest](http://agriculture.vic.gov.au/reportaplantpest) or using the QR Code**



It is important to report any unusual plant pest or disease immediately to increase the chance of effective control and eradication. Please take quality photos of the pests or damage to include in your report where possible. Information on how to take a quality photo for identification can be found on our reporting page.

Disclaimer: This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. Information is correct as of December 2023.

# Polyphagous shot-hole borer

*Euwallacea fornicatus*

**INTRODUCED PEST – not present in Victoria**

Banner image: © CSRIO



© CSRIO

**Polyphagous shot-hole borer (*Euwallacea fornicatus*) adult female – lateral view**



© CSRIO

**Polyphagous shot-hole borer (*Euwallacea fornicatus*) adult male – lateral view**



©Isaacnewt iNaturalist.org

**Polyphagous shot-hole borer (*Euwallacea fornicatus*), larvae**

## Why is this pest a concern?

Polyphagous shot-hole borer (*Euwallacea fornicatus*) is an exotic beetle which lives within stems and branches of trees. The beetle excavates tunnels which damage vascular tissue, stopping the flow of water and nutrients through the tree causing dieback and eventual death. It can infest and economically impact over 500 species of trees and woody shrubs within the horticultural and agricultural industries, as well as being an environmental pest with ecological impacts. The beetle lives in symbiosis with the fungus *Fusarium euwallacea* which it farms and carries inside the woody host as food. It was detected in East Fremantle Western Australia in August 2021.

## How do I identify it?

Both sexes of the polyphagous shot-hole borer have plump, convex, oval-shaped bodies. The front edge of the dorsal thorax plate (pronotum) has a row of saw-like projections, and the protective hard wing casings are studded with rows of tiny puncture marks with fine hairs. Females are dark brown to black, 2.0 mm–2.8 mm long. Males are dark brown, 1.5–1.7 mm long (smaller than females) and rarely seen because they do not fly. Larvae are white, C-shaped, legless, and with a toughened reddish-orange head. Larvae metamorphise into white pupae (the same size as adults). Eggs are found singularly or in small groups within the tree.

## Where will I find it?

Box elder maple is a highly susceptible reproductive host and currently considered the primary indicator species for the beetle in Australia. Females are often found on host trees within the heart wood but also on secondary branches and stems with a diameter of at least 2 cm. Exit or shot holes, less than 1 mm in diameter, are made by the females when leaving the tree to colonise a new host.



© CSIRO

**Polyphagous shot-hole borer (*Euwallacea fornicatus*) adult female – dorsal view**



© CSIRO

**Polyphagous shot-hole borer (*Euwallacea fornicatus*) adult male – dorsal view**



©Kate\_tomato iNaturalist.org (CC BY-NC 4.0) cropped image

**Polyphagous shot-hole borer, initial symptoms of dieback in canopy *Fusarium euwallaceae* Box elder maple (*Acer negundo*)**

## Potential Hosts in Australia

Polyphagous shot-hole borers have reproductive hosts and non-reproductive hosts which are used for feeding and habitat only. Preferred reproductive hosts in WA include Box elder maple, Black Locust, Coral trees, Poinciana, Moreton Bay and Port Jackson figs, mulberry and London plane trees. Host trees which don't support reproduction include Candlenut, golden shower tree, Meyer and Eureka lemons, Dracaena, weeping fig, ash tree, cherry, callery pear, weeping saphora, and lilly pilly.

A comprehensive list of host species can be found at: <https://agriculture.vic.gov.au/biosecurity/moving-plants-and-plant-products/plant-quarantine-manual>

The wide host range of the species means that it may occur on a considerable number of native plant species, but the extent of this is currently unknown.

## What will I see?

Beetle entry and exit holes are less than 1 mm in diameter, sometimes displaying a dark discolouration caused by the associated fungus *Fusarium euwallaceae*, staining the wood.

Thick resins or sap sometimes ooze from the beetle's tunnel. Crystalline foam can form around the entry and exit wounds.

Frass noodles (or tubes) sticking out of exit holes, resting on branches or on the ground caused by the beetle tunnelling.

Dieback symptoms of infection include wilting, browning of leaves, and leaf loss, usually starting in the upper canopy. Dying and dead branches drop to the ground.

Pupae may be found in tunnels in trees, where they develop for 7–9 days into the adult beetle.

## When will I see it?

Adult female beetles fly during the day after mating in spring and autumn approximately 35 m to find suitable hosts; they are capable of flying up to 400 m.

Eggs are in tunnels in branches and stems of reproductive host trees for four to six days. Females bore.





© Paul Barker iNaturalist.org. (CC BY-NC)

**Polyphagous shot-hole borer (*Euwallacea fornicatus*)**



©CSIRO

**Polyphagous shot-hole borer (*Euwallacea fornicatus*) adult male – ventral view**



©CSIRO

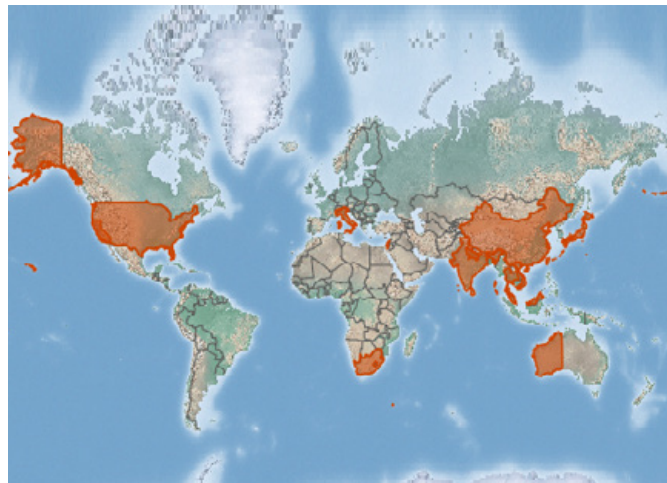
**Polyphagous shot-hole borer (*Euwallacea fornicatus*) adult female – ventral view**

### How does it travel?

Polyphagous shot-hole borers hitchhike on untreated wood, wood chips, packaging material, firewood, plant material, arborist machinery as eggs, larvae, or adult beetles. Beetles do not travel long distances naturally, however, if necessary can fly up to 400 m to find a new suitable host plant.

### Where is it now?

Native to Southeast Asia, Bangladesh, China, Cambodia, India, Indonesia, Japan, Laos, Madagascar, Malaysia, Myanmar, Pacific Islands, Philippines, Sri Lanka, and Vietnam. It has spread to Israel, South Africa, California USA, and to East Fremantle Western Australia in 2021.



© CAB International, PlantwisePlus Knowledge Bank CC BY-NC-ND 4.0

**Current distribution of the Polyphagous shot-hole borer (*Euwallacea fornicatus*)**

Present in Western Australia under an eradication program



**Report a suspected sighting of a Polyphagous shot-hole borer by calling the Exotic Plant Pest Hotline 1800 084 881 or at [agriculture.vic.gov.au/reportaplantpest](http://agriculture.vic.gov.au/reportaplantpest) or using the QR Code**



It is important to report any unusual plant pest or disease immediately to increase the chance of effective control and eradication. Please take quality photos of the pests or damage to include in your report where possible. Information on how to take a quality photo for identification can be found on our reporting page.

Disclaimer: This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. Information is correct as of December 2023.

# Red imported fire ant

*Solenopsis invicta*

**INTRODUCED PEST – not present in Victoria**

Banner image: © CSIRO



April Noble, Antweb.org, Bugwood.org (CC BY-NC 3.0 US)

**Red imported fire ant (*Solenopsis invicta*), adult – lateral view**



April Noble, Antweb.org, Bugwood.org (CC BY-NC 3.0 US)

**Red imported fire ant (*Solenopsis invicta*), adult – dorsal view**



Johnny N. Dell, Bugwood.org (CC BY-NC 3.0 US)

**Red imported fire ant (*Solenopsis invicta*) Queen and workers**

## Why is this pest a concern?

Red imported fire ants (*Solenopsis invicta*, RIFA), are one of the world's worst invasive species of ants. They are highly adaptable and have the potential to negatively impact our environment, economy, infrastructure, health and social wellbeing. They can disrupt ecosystems by outcompeting local fauna, harvesting and destroying seeds and damaging soft plant tissue and growing buds while feeding. Where colonies have become established species diversity has declined. RIFA can delay harvesting and ultimately reduce production of agricultural industries. They are attracted to electrical components and can short out agricultural machinery. Livestock can be harmed or killed by RIFA attacks; they have been known to target the eyes of young animal and pets, causing blindness if not treated. RIFA move very quickly and aggressively when their nest is under threat and will attack stinging multiple times. Their sting is extremely painful and can cause anaphylactic shock or death in sensitive individuals. RIFA thrive in disturbed environments within urban areas such as backyards, parks and golf courses. Everyday activities such as barbeques, picnics and sporting events will be disrupted.

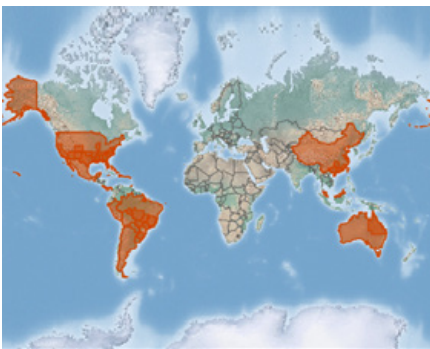
## How do I identify it?

RIFA nests are flat and may look like heaps of loose dirt in warmer and drier months but maybe be built higher above ground to regulate the temperature and retain heat in winter. Regardless, a characteristic feature of the nests have no visible entry or exit holes. The nest supports ants of different sizes ranging from 2 to 6 mm long. They are copper brown in colour with a darker abdomen. Workers have a narrow waist with two segments between the thorax and abdomen. Antennae have ten segments with a two segmented club at the end. Mature RIFA colonies can have one or multiple queens, 250,000 female sterile worker ants, and several hundred males. The male ant dies straight after mating with the queen. The queen can live up to eight years and lay hundreds of eggs a day which are tended by the worker ants. A RIFA sting has powerful venom causing a painful burning sensation that produces a pustule on the skin which can scar if infected.



Forest and Kim Starr, Starr Environmental, Bugwood.org (CC BY 3.0 US)

### Red imported fire ant (*Solenopsis invicta*), nest mound.



© CAB International, PlantwisePlus Knowledge Bank CC BY-NC-ND 4.0

### Current distribution of the Red imported fire ant (*Solenopsis invicta*)

Red imported fire ants are present in Australia, but confined to Queensland and one small area of northern NSW. They are subject to a national eradication program.

## Where will I find it?

In urban areas RIFA can be found in lawns, footpaths, garden beds. The ants also live along fence lines and firebreaks, can be present in crops and post-harvest produce, on the edges of cultivated land in rural areas and in potted plants, mulch, turf and areas around buildings. RIFA are attracted to electrical components and will nest in air conditioners, pool pumps, vehicles and machinery.

## How does it travel?

After a queen has mated, she can fly up to 5 kms to find a new nesting site. During floods, colonies can form floating rafts with their bodies that can survive for weeks. Longer distance travel is achieved by hitchhiking in vehicles, soil, potted plants, sand, gravel, grass, green fodder, hay and soil moving equipment.

## Potential hosts in Australia

RIFA are opportunistic feeders and omnivores that prey on invertebrates, vertebrates and plants.

## What will I see?

The shape and size of the nest depends on soil type and ant colony size. The RIFA move very quickly and aggressively when their nest is under threat.

## When will I see it?

RIFA can be seen when working outside in the garden, in the field harvesting produce, when fixing electrical equipment, and under houses.

## Where is it now?

Originally from South America, RIFA is now distributed worldwide including North, South and Central America, Asia, Africa the Caribbean, and Oceania. In Australia it is present in large areas of south-east Queensland where a national eradication program has been underway since 2001. In November 2023, the NSW Department of Primary Industries (DPI) confirmed the detection of RIFA at one site in north-eastern NSW, 13 km south of the Queensland border. This is the first fire ant detection in northern NSW and the first interstate spread of RIFA from Queensland.



**Report a suspected sighting of a Red imported fire ant by calling the Exotic Plant Pest Hotline 1800 084 881 or at [agriculture.vic.gov.au/reportaplantpest](https://agriculture.vic.gov.au/reportaplantpest) or using the QR Code**



It is important to report any unusual plant pest or disease immediately to increase the chance of effective control and eradication. Please take quality photos of the pests or damage to include in your report where possible. Information on how to take a quality photo for identification can be found on our reporting page.

Disclaimer: This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. Information is correct as of December 2023.



# Southern armyworm

*Spodoptera eridania*

## EXOTIC PEST – not present in Australia

Banner image: © CSIRO



PlantwiseplusKnowledgeBank.org, USGS Bee Inventory & Monitoring Lab, (Public Domain)

**Southern armyworm (*Spodoptera eridania*), adult moth – lateral view.**  
Laboratory specimen



Eddie McGriff, University of Georgia, Bugwood.org

**Southern armyworm (*Spodoptera eridania*), caterpillar**



PlantwiseplusKnowledgeBank.org, USGS Bee Inventory & Monitoring Lab, (Public Domain)

**Southern armyworm (*Spodoptera eridania*), eggs**  
Laboratory specimen

### Why is this pest a concern?

The Southern armyworm (*Spodoptera eridania*) is a highly invasive pest severely damaging a wide range of plant hosts, including many crops and many ornamental species intended for the cut flower market. It is native to the tropics and sub-tropics but is an increasing threat in southern agricultural areas due to climate change.

### How do I identify it?

The eggs of the Southern armyworm are greenish at first and turn a tan colour as they mature. The eggs are a flattened sphere, 0.45 mm in diameter and 0.35 mm height and laid on the underside of leaves, in clusters, attached with scales from the female's abdomen.

Caterpillar colour and pattern vary considerably; they cannot be identified visually without an adult moth or DNA. The caterpillars range from 1–2.5 mm long when young to 35–40 mm when mature. Caterpillars are green or blackish with a uniform light brown or reddish-brown head. Each side has a broad yellowish or whitish stripe that has a dark spot on the first abdominal segment. Pupae are a mahogany brown and measure 16–18 mm long. Adult moths have a wingspan between 28–40 mm, with cream to grey forewings with a dark streak near the base and a darker kidney shaped spot or bar. The hindwings are opalescent white.

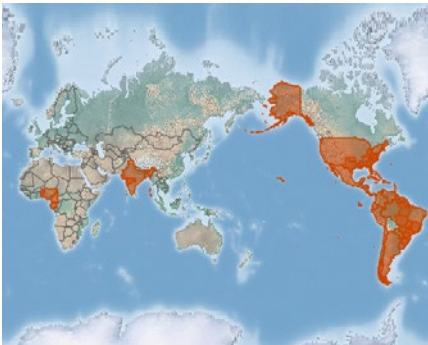
### Where will I find it?

The Southern armyworm can complete its lifecycle in temperatures ranging between 15 to 32°C, though adults can survive for several days below freezing. On a host plant the eggs and larvae are found on the leaves and stems. During the day caterpillars hide in leaf litter or plant foliage and feed on the leaves at night. Caterpillars can sometimes swarm and migrate by marching in large groups, hence the name armyworm. Pupae are found in the ground near host plants and the adults fly to find a mate.



Ronald Smith, Auburn University,  
Bugwood.org (CC BY 3.0 US)

**Southern armyworm**  
(*Spodoptera eridania*), early  
instar larval feeding damage  
on a cotton leaf.



© CAB International, PlantwisePlus  
Knowledge Bank CC BY-NC-ND 4.0

**Current distribution of  
the Southern armyworm**  
(*Spodoptera eridania*)

## Potential hosts in Australia

The Southern armyworm is polyphagous, recorded feeding on 202 different wild hosts, crops and grasses. Favoured hosts include eggplant, beans, cabbage, capsicums, carnations, cauliflower, cowpea, groundnut, lucerne, okra, Geraniums, potato, sweet potato, tobacco, and tomato. It has also been recorded as a pest on other plants including cotton, Amaranth and lucerne. The wide host range means that it could potentially be a threat to numerous native plant species.

## What will I see?

Southern armyworm mainly damages foliage, skeletonising leaves of the host plants. It creates shot-holes in foliage and in extreme cases complete defoliation of the host plant. It can behave like a cutworm if there is insufficient leaf material and destroy new growth, boring into stems, attacking tubers and fruit and decimating young seedlings. You will see vast amounts of frass (excrement) around leaves that are damaged.

## When will I see it?

Caterpillars are usually found on the lower surface of leaves and are most active at night. Pupae are difficult to see as they spend their lifecycle underground.

## How does it travel?

Human-assisted pathways can disperse colonies in new areas by importing plants for planting, including cut flowers carrying eggs or larvae on the foliage. This is particularly the case with plants from South and Central America. Natural dispersal is also a distinct possibility since adult Southern armyworm are strong flyers and can travel hundreds of kilometres on storm fronts.

## Where is it now?

Tropical and sub-tropical regions including countries from North, Central and South America, and the Caribbean Islands are considered the place of origin for the Southern armyworm. It has been found in West and Central Africa on cassava (2016), and India on soybean (2019).



**Report a suspected sighting of a Southern armyworm  
by calling the Exotic Plant Pest Hotline 1800 084 881 or at  
[agriculture.vic.gov.au/reportaplantpest](https://agriculture.vic.gov.au/reportaplantpest) or using the QR Code**



It is important to report any unusual plant pest or disease immediately to increase the chance of effective control and eradication. Please take quality photos of the pests or damage to include in your report where possible. Information on how to take a quality photo for identification can be found on our reporting page.

Disclaimer: This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. Information is correct as of December 2023.

# Spongy moth

*Lymantria dispar*

## EXOTIC PEST – not present in Australia

Banner image: © CSRIO



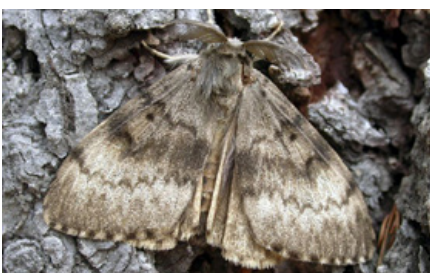
Jim Occi, Bug Pics, Bugwood.org  
(CC BY-NC 3.0 US)

**Spongy moth (*Lymantria dispar*), adult collection specimens.**



Jon Yuschock, Bugwood.org  
(CC BY\_NC 3.0 US)

**Spongy moth (*Lymantria dispar*), caterpillar.**



© John H Ghent, USDA Forest Service,  
Bugwood.org (CC BY 3.0 US)

**Spongy moth (*Lymantria dispar*), adult male**

### Why is this pest a concern?

Spongy moth (*Lymantria dispar*), previously known as gypsy moth, is a highly invasive pest known to defoliate more than 600 species of broadleaved trees in agricultural, horticulture and forestry industries. The defoliation weakens trees, making them more susceptible to secondary pathogens and causes severe decline in health and potentially tree death. It is not present in Australia.

### How do I identify it?

Spongy moth egg masses are brown to creamy yellow, hairy, approximately 38 mm long and 19 mm wide. They are located on solid objects such as tree trunks and large branches, rocks, logs, homes, and vehicles.

Caterpillars hatching from egg masses are very small (3 mm long) and secrete silk threads for dispersal by “ballooning” (spinning a silken thread and being carried by the wind).

Older larvae are dark and hairy, maturing from 38 to 90 mm long with five pairs of blue spots and six pairs of red spots along their back.

Pupae are dark brown and are enclosed in a yellow silken cocoon, attached to trees, branches, rocks, fences and other outdoor structures.

Female moths are up to 63 mm long. They have cream-coloured wings with distinctive black markings on the wings and thread-like antennae.

Males are smaller than females, mottled brown to grey in colour with feathery antennae and black wing markings. The males may fly during the day or night.

### Potential hosts in Australia

Spongy moth caterpillars are known to eat hundreds of different tree and shrub species. The most susceptible trees are alder, apple, aspen and poplars, basswood, birch (a preferred host), cherry, hawthorn, hazelnut, larch, mountain ash, oak (a main host), pears, willow, and witch-hazel. Deciduous and ornamental conifers (e.g., larch, bald cypress) are generally susceptible. The wide host range of the species means that it may affect a considerable number of native plant species.





Daniela Lupastean, University of Suceava,  
Bugwood.org (CC BY-NC 3.0 US)

### Spongy moth (*Lymantria dispar*) egg masses on sessile oak tree



Mark Robinson, USDA Forest Services,  
Bugwood.org (CC BY 3.0 US)

### Spongy moth (*Lymantria dispar*), infestation.



© CAB International, PlantwisePlus  
Knowledge Bank CC BY-NC-ND 4.0

### Current distribution of the Spongy moth (*Lymantria dispar*)

## What will I see?

Egg masses can be seen on tree trunks and branches. Caterpillar feeding damage on host tree appears initially as holes in the leaves or as irregular leaf margins, but whole leaves may be consumed as larvae mature. Low levels of caterpillars do not affect on the general health of trees, but at outbreak levels they can completely defoliate trees. Stress associated with feeding damage can result in reductions in tree growth, dieback, susceptibility to secondary attack from other insects and pathogens and ultimately tree death..

## Where is it now?

The native range of Spongy moth is from North West Africa, Asia, Europe, China, Middle East and Korea, but it has spread to Canada, Mongolia, New Zealand, Russian Federation, Serbia, and the United States.

## How does it travel?

Spongy moths are known to travel or migrate with ease. Egg masses are tolerant of extreme temperatures and moisture and are easily transported via imported nursery stock and on freight, vehicles, pallets and shipping containers.

Caterpillars naturally disperse distances by crawling or ballooning on the wind for distances up to several kms.

## When will I see it?

Eggs masses are laid from mid to late summer and remain overwintering in the cooler months before hatching in early spring, simultaneous with tree leaf budding. Very small larvae appear in spring. Larger caterpillars occur in spring to early summer, feeding in the canopies during the day and resting at night on foliage. The oldest caterpillars may feed mainly at night. The pupal stage is found during early summer on tree trunks. Adults moths emerge mid-summer. Only males and some females fly.



**Report a suspected sighting of a Spongy Moth by calling the Exotic Plant Pest Hotline 1800 084 881 or at [agriculture.vic.gov.au/reportaplantpest](https://agriculture.vic.gov.au/reportaplantpest) or using the QR Code**



It is important to report any unusual plant pest or disease immediately to increase the chance of effective control and eradication. Please take quality photos of the pests or damage to include in your report where possible. Information on how to take a quality photo for identification can be found on our reporting page.

Disclaimer: This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. Information is correct as of December 2023.

# Spotted lanternfly

*Lycorma delicatula*



## EXOTIC PEST – not present in Australia



Lawrence Barringer, Pennsylvania  
Department of Agriculture, Bugwood.org  
(CC BY 3.0 US)

**Spotted lanternfly  
(*Lycorma delicatula*) adult**



Lawrence Barringer, Pennsylvania  
Department of Agriculture, Bugwood.org  
(CC BY 3.0 US)

**Spotted lanternfly (*Lycorma delicatula*), nymphs**



Lawrence Barringer, Pennsylvania  
Department of Agriculture, Bugwood.org  
(CC BY 3.0 US)

**Spotted lanternfly (*Lycorma delicatula*) adult and eggs**

### Why is this pest a concern?

The Spotted lanternfly (*Lycorma delicatula*) is an invasive planthopper and priority exotic pest for Australia. Feeding has been recorded on over 180 hosts including economically important crops from the horticultural, forestry, orchard and viticultural industries. Damage caused by the spotted lanternfly decreases yields, reduces plant health, produces inferior quality produce and eventually kills the host plant.

### Where will I find it?

Eggs masses can be found on smooth natural surfaces such as tree trunks and branches, and human-made surfaces including buildings, vehicles, machinery, shipping containers and garden furniture. Nymphs can be found feeding on young host plants. The tree-of-heaven (*Ailanthus altissima*) is a preferred food source for late juvenile to young adult Spotted lanternflies.

### How do I identify it?

The adult Spotted lanternfly is approximately 25 mm long and 12 mm wide. It has light brown forewings with black spots, and a speckled band at the outside edge. The hindwings are bright red with black spots with a white and black band at the front. The abdomen is bright yellow with a horizontal black stripe on each segment.

Eggs are approximately 25 mm long and laid in flat, yellowish-brown masses of 35 to 50 eggs covered in a waxy dull brownish secretion designed to protect the eggs from predators and climatic conditions. Eggs are preferably laid on smooth surfaces, whether natural or artificial. Nymphs grow from 3.1 mm when newly hatched up to 12 mm during their four developmental stages. The first to third nymphal stages are black with white spots whereas the fourth stage is bright red with black and white markings.

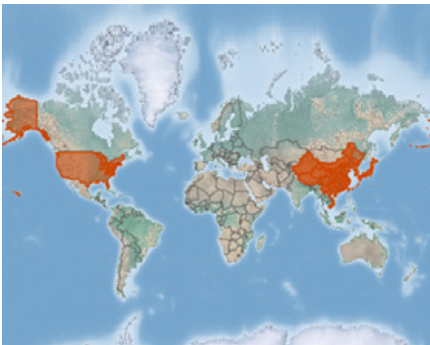
### Potential hosts in Australia

Some examples of economically important crops that are susceptible to spotted lanternfly damage are: almonds, apples, apricots, blueberries, cherries, grapes, nectarines, peaches, plums, basil, hops, tree of heaven, maple trees, oak trees, pine trees, poplar trees, sycamore trees, walnut tree and willow tree.



Lawrence Barringer, Pennsylvania  
Department of Agriculture, Bugwood.org  
(CC BY 3.0 US)

**Spotted lanternfly (*Lycorma delicatula*) fungal mat at base of tree**



© CAB International, PlantwisePlus  
Knowledge Bank CC BY-NC-ND 4.0

**Current distribution of the Spotted lanternfly (*Lycorma delicatula*)**

## What will I see?

The Spotted lanternfly causes damage through feeding using its piercing-sucking mouthpart to puncture host tissue. Communal feeding results in wounds on the plant and the discharge of sugar-rich honeydew on the host plant. Honeydew attracts other insects such as bees and wasps and promotes the growth of the sooty mould fungus. The wounds also provide entry points for secondary pathogens.

Large numbers of nymphs and adults gather within the canopy or at the base of a host plant and are more easily seen at dawn and dusk.

Egg masses are found on flat surfaces including tree trunks and branches, buildings, vehicles, machinery, shipping containers and garden furniture.

## When will I see it?

The Spotted lanternfly has one generation per year. Eggs are laid in autumn on smooth surfaces and will overwinter until spring. Early-stage nymphs will emerge in spring and early summer and will moult four times during development before reaching maturity. Adult Spotted lanternflies begin to appear in late summer and produce egg masses in autumn. Large numbers of adults can be seen gathering on tree trunks at dawn and dusk, in late summer to early autumn. Early nymphs will be feeding on smaller plants and vines, and on any new growth on trees and shrubs.

## How does it travel?

The Spotted lanternfly can be spread long distances through human-assistance transport of all life stages, especially egg masses. Egg masses are found on shipping containers, vehicles, machinery, nursery stock, fresh produce, cut flowers and foliage, wooden products and travellers' luggage are particular risks. Spotted lanternflies are poor fliers, rarely flying more than 10 to 50 metres at a time. However, they are strong jumpers and will walk short distances to infest adjacent produce or hosts.

## Where is it now?

It is native to China, Vietnam, and India. Now confirmed in Korea (2004) Japan (2008) and parts of USA (2014 and 2020).



**Report a suspected sighting of a Spotted lanternfly by calling the Exotic Plant Pest Hotline 1800 084 881 or at [agriculture.vic.gov.au/reportaplantpest](https://agriculture.vic.gov.au/reportaplantpest) or using the QR Code**



It is important to report any unusual plant pest or disease immediately to increase the chance of effective control and eradication. Please take quality photos of the pests or damage to include in your report where possible. Information on how to take a quality photo for identification can be found on our reporting page.

Disclaimer: This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. Information is correct as of December 2023.

AGRICULTURE VICTORIA



# Spotted-wing drosophila

*Drosophila suzukii*



## EXOTIC PEST – not present in Australia

Banner image: © CSIRO



Braden Judson, iNaturalist.org. (CC0 1.0)

**Spotted-wing drosophila (*Drosophila suzukii*), male dorsal view.**



Braden Judson, iNaturalist.org. (CC0 1.0)

**Spotted-wing drosophila (*Drosophila suzukii*), male lateral view.**

### Why is this pest a concern?

Spotted-wing drosophila (*Drosophila suzukii*) is an exotic fly that infests and damages a wide range of fresh summer fruits and flowers. It is a highly invasive pest and poses a significant economic and environmental threat if it were to enter Australia. Spotted-wing drosophila is unusual in that it can infest fruit early in the ripening stage as well as rotting fruit.

### How do I identify it?

Male Spotted-wing drosophila are most easily identified. They are light yellow to brown, with red eyes and are less than 4–5 mm long. There is a single dark spot on the edge of the wing near the tip, centred on the major wing vein. Wing spans are between 6–8 mm long. Antennae are branched, short and stubby. There are complete unbroken dark bands at the end of the abdominal segments.

Females are less easily identified, with darker bodies than males and wings clear of spots and or dark patches. They have a double serrated ovipositor for laying eggs.

Pupae have a pair of distinctive horn shaped protrusions at one end, which divide into 7 or 8 branches each and are used for respiration. They are oval shaped, 1 mm wide, 2–3 mm long and red to brown in colour.

Larvae are cream to white, 3 mm in length.

Eggs are translucent, milky-white and glossy, oval shaped, 0.6 mm in length and have two filaments at one end.

### Where will I find it?

Spotted-wing drosophila feed on and damage ripening fruit. Female flies lay eggs under the surface of the skin of healthy fruit. Hatched larvae feed on fruit pulp inside the fruit until they mature into pupae. On the fruit surface, visible scars and holes are created as the pupae protrude through the skin.



Hannah Burrack, North Carolina State University, Bugwood.org (CC BY 3.0 US)

**Spotted-wing drosophila (*Drosophila suzukii*), eggs in a strawberry.**



Hanna Burrack, North Carolina State University, Bugwood.org (CC BY 3.0 US)

**Spotted-wing drosophila (*Drosophila suzukii*), larvae in a strawberry.**



© CAB International, PlantwisePlus Knowledge Bank CC BY-NC-ND 4.0

**Current distribution of the Spotted-wing drosophila (*Drosophila suzukii*)**

## Potential hosts in Australia

Spotted-wing drosophila has a wide host range of soft fruits such as cherry, strawberry, mulberry, orange jasmine, Chinese bayberry, peaches, Asian pears, currants, blackberry, logan berry, blueberry, cranberry and grapes. Apples, pear and other hard skinned fruit are also hosts when the fruit begins to rot.

## What will I see?

Damage caused by female flies laying eggs looks like small puncture holes on the fruit surface. The wounds may be associated with other pathogens such as fungi and bacteria, particularly moulds, entering the fruit. Small scars and indented soft spots on the surface, wrinkling and softening of fruit may be caused by feeding movements of larvae inside the fruit. Collapse of the fruits structure may also be caused by larvae growing inside.

## When will I see it?

These symptoms can be seen in the summer and autumn months when the fruit is ripe or ripening or when ripening under glasshouse conditions.

## How does it travel?

Dispersal can be via natural, human-assisted and host preferential pathways. The fly can be carried by wind over short or long distances. It can hitchhike on imported host material, such as fresh fruit, cut flowers, nursery plants and soil.

## Where is it now?

Spotted-wing drosophila is native to South East Asia, where it is widely distributed in countries such as China, India, Korea, Myanmar and Thailand. It has subsequently invaded Russia, North America (2008), Canada, Europe (2008), South America (2013), French Polynesia (2017) and Africa (2020). Australia's environment is highly suitable for the pest to establish and spread were it to come into the country.



**Report a suspected sighting of a Spotted-wing drosophila by calling the Exotic Plant Pest Hotline 1800 084 881 or at [agriculture.vic.gov.au/reportaplantpest](https://agriculture.vic.gov.au/reportaplantpest) or using the QR Code**



It is important to report any unusual plant pest or disease immediately to increase the chance of effective control and eradication. Please take quality photos of the pests or damage to include in your report where possible. Information on how to take a quality photo for identification can be found on our reporting page.

Disclaimer: This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. Information is correct as of December 2023.

# Turnip moth

*Agrotis segetum*



## EXOTIC PEST – not present in Australia

Banner image: © CSIRO



© CROWN David Agassiz CABI International  
PlantwisePlus Knowledge Bank

**Turnip moth (*Agrotis segetum*),  
adult male, Museum set  
specimen.**



© CROWN David Agassiz CABI International  
PlantwisePlus Knowledge Bank

**Turnip moth (*Agrotis segetum*),  
adult female, Museum set  
specimen.**



© CROWN David Agassiz CABI International  
PlantwisePlus Knowledge Bank

**Turnip moth (*Agrotis segetum*),  
caterpillar, larval body colour  
varies until the final instar.**

### Why is this pest a concern?

Turnip moth (*Agrotis segetum*) is a high priority exotic pest not found in Australia. The caterpillar is known as a cutworm and destroys seedlings, attacks root and lower stems of root vegetables and cereals from 25 plant families, including tea and coffee.

### How do I identify it?

Turnip moths are nocturnal and live for 7–9 days. Their wingspan is 40–50 mm wide and 20–30 mm long. Colour ranges from pale buff, brown to almost black, with markings on the forewings. Paler buff moths have dark-bordered kidney-shaped circular silvery markings on their forewings. The colours of male hindwings are pure white, and the females are pearly grey. Males have feathered antennae, while the females are thin and thread-like.

Caterpillars grow to about 40 mm in length, are shiny black or greasy in appearance, with a small black head. Larvae have markings running down the back of their body, ranging from yellow spots to grey stripes.

When disturbed, the larvae will curl into a C-shape and remain motionless for a short while. Mature larvae pupate in soil.

Females eggs are 0.5 mm in diameter and 0.4 mm in height. The eggs are white, becoming grey just before they hatch. Females can lay up to 2000 eggs but generally lay between 600–800 singly or in small batches on the underside of leaves or in moist fallow soil. The eggs hatch after 3–14 days, depending on local conditions.

### Where will I find it?

You can find Turnip moth eggs in moist fallow or low vegetation soils and on the underside of seedling leaves or young leaves. On overcast days and after dusk the larvae feed on stems and leaves of young plants. Imported soil and plant host material can harbor eggs and larvae. They can also be attached to imported machinery and cargo shipping containers. Travellers may bring them in on contaminated plant cuttings or nursery stock.

### Potential hosts in Australia

Turnip moth is a polyphagous pest, causing damage to ornamental, horticultural and agricultural plants in 25 different families, including environmental weeds like freesias, gladioli and deadly nightshade. Commonly attacked crops are asparagus, barley, bean, beet,





© CROWN David Agassiz CABI International PlantwisePlus Knowledge Bank

**Turnip moth (*Agrotis segetum*), freshly laid eggs.**



© CROWN David Agassiz CABI International PlantwisePlus Knowledge Bank

**Turnip moth (*Agrotis segetum*), larval damage on potato tuber.**



© CROWN David Agassiz CABI International PlantwisePlus Knowledge Bank

**Turnip moth (*Agrotis segetum*), adult female at rest.**



© CROWN David Agassiz CABI International PlantwisePlus Knowledge Bank

**Turnip moth (*Agrotis segetum*), adult male at rest.**

cabbage, canola, castor bean, coffee, cotton, grape, lettuce, maize, oats, onion, peanut, pepper, potato, radish, rice, rye, spinach, squash, strawberry, tobacco, tomato, and wheat. The wide host range of the species means that it may occur on a considerable number of native plant species, but the extent of this is currently unknown.

## What will I see?

Eggs can be found on the underside of young plant leaves. You may also see a windowpane effect on leaves where the young larvae have eaten the green top layer of a leaf, exposing the veins. As the larvae mature, they progress to surface roots and finally cutting through the base of stems, creating deep holes in roots and causing severe damage to the whole plant. At the base of the plant there will be pieces of leaves pulled down into the soil by the larvae.

## When will I see it?

Autumn is the most damaging time for crop and pasture plants when the caterpillar transfers from weeds to the developing crop. Environmental factors of the season play a huge part in timing of the species development. Turnip moth is a nocturnal species active at night and on overcast days. Larvae will hide during the day from the sun under leaf matter and soil.

## How does it travel?

The Turnip moth eggs and larvae can be imported on host plants and soil, machinery, and shipping containers and by unsuspecting travellers bringing in plant material. There is a slim chance that Turnip moth could be introduced naturally via wind currents from the north.

## Where is it now?

The Turnip moth is currently in Europe, Middle East, Central Asia, India, Russia and Africa.



© CAB International, PlantwisePlus Knowledge Bank CC BY-NC-ND 4.0

**Current distribution of the Turnip moth (*Agrotis segetum*)**



**Report a suspected sighting of a Turnip Moth by calling the Exotic Plant Pest Hotline 1800 084 881 or at [agriculture.vic.gov.au/reportaplantpest](https://agriculture.vic.gov.au/reportaplantpest) or using the QR Code**



It is important to report any unusual plant pest or disease immediately to increase the chance of effective control and eradication. Please take quality photos of the pests or damage to include in your report where possible. Information on how to take a quality photo for identification can be found on our reporting page.

Disclaimer: This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. Information is correct as of December 2023.

# Varroa mite

*Varroa destructor* & *V. jacobsoni*

## INTRODUCED PEST – not present in Victoria

Banner image: Denise Ellsworth, The Ohio State University, Bugwood.org



© CSIRO

**Varroa mite (*Varroa destructor*) male (white) and female (red).**



Scott Bauer, USDA Agricultural Research Services, Bugwood.org (CC BY 3.0 US)

**Varroa mite (*Varroa destructor*) on European honey bee (*Apis mellifera*), back. The mites cause death and disease in bee colonies.**



© CSIRO

**Varroa mite (*Varroa destructor*), on a honey bee pupa**

### Why is this pest a concern?

The invasive Varroa mite (*Varroa destructor*) is the most significant worldwide ectoparasite of European honey bees (*Apis mellifera*). Varroa mites pose a severe threat for pollination dependent plants within the horticultural, broadacre, food production, and pastoral industries, including honey production.

In June 2022, Varroa mites were detected in sentinel hives within the Newcastle area, NSW. Since that time the NSW Department of Primary Industries had been leading a national response program to manage the outbreak. On 19 September it was decided that it was no longer technically feasible to eradicate and the response has now entered a transition to management phase. Varroa is now endemic to NSW and will continue to spread across mainland Australia.

### How do I identify it?

Adult female Varroa mites have a rigid, slightly curved, reddish-brown, oval-shaped body with fine hairs. The size of a female's body is 1.1–1.7 mm wide and both sexes have eight legs. Males range from 0.75–0.98 mm long and 0.7–0.88 mm wide, are spherical and slightly whitish yellow. Varroa mites are relatively large in comparison to the size of the bee host and can be seen with the naked eye.

Varroa mite eggs are 0.5 mm long, milky white, oval-shaped and are laid on the bottom of the cells, on the walls of cells, and sometimes directly on the larvae. Female varroa mites are more likely to lay eggs on drone brood rather than worker brood. Females lay up to six eggs, the first one hatching as a male, the rest are females.

### Where will I find it?

Where there are European honey bees and Asian honey bees (*Apis cerana*) colonies you will potentially find Varroa mites.

The reddish brown female Varroa mites are easy to see on yellow pupae and larvae in the brood cells where the mites mainly feed and reproduce. The males stay sealed in the brood cells, they never venture outside the cell.

Female mites also attach to the lower segments of an adult honey bee abdomen.





© CSIRO

**Mother Varroa mite (*Varroa destructor*), with offspring**



Georgia Department of Agriculture,  
Bugwood.org

**Varroa mite (*Varroa destructor*), symptoms on honey bees**

## Potential hosts in Australia

European honey bees are highly vulnerable to varroa mite and throughout the world this mite is responsible for the collapse and death of European honey bee colonies.

*Varroa jacobsoni* is normally found on the Asian honey bee (*Apis cerana*).

Native Australian bees have different biology to the European honey bees, so, at this stage are not thought susceptible to Varroa mite infestation.

## What will I see?

Reddish/brown female Varroa mites can be found on the pupae, larvae, and adult bees. Physical and physiological symptoms of adult bees can be observed as Parasitic Mite Syndrome (PMS) causing stunted adults, damaged wings, legs, and abdomen, crippled crawling honey bees, impaired flight performance, reduced rate of returning bees to the hive, reduced lifespan of bees, reduced weight of bees and eventually colony decline.

Death and deformity at pupal and larval stages, larvae slumped at the bottom or to the side of a cell and abnormal brood pattern in combs, including sunken, chewed caps and scattered brood are all symptoms of Varroa mite infestation.

## When will I see it?

The distribution of varroa throughout a hive can depend on the time of the year and therefore surveillance methods for Varroa should change for different times of the year.

When there is little to no brood in the hive, Varroa mites will be seen on adult bees. Sampling methods targeting adult bees e.g. sugar shake and alcohol wash can be effective at determining the presence of varroa within a hive. Alternatively in spring and early summer, when a large amount of brood is present a high percentage of the mites can be seen in the brood rather than on adult bees, and therefore, drone uncapping can be an effective surveillance method.



© CSIRO

**Worker European honey bee (*Apis mellifera*) with wing deformities caused by Varroa mite.**





Stephen Ausmus, USDA Agricultural Research Service, Bugwood.org

**Varroa mite (*Varroa destructor*), A young worker honey bee appears from a brood cell with a mite on its back**



Pavel Klimov, Bee Mite ID, USDA APHIS PPQ Bugwood.org (CC BY-VC 3.0 US)

**Varroa mite (*Varroa destructor*)**

## How does it spread?

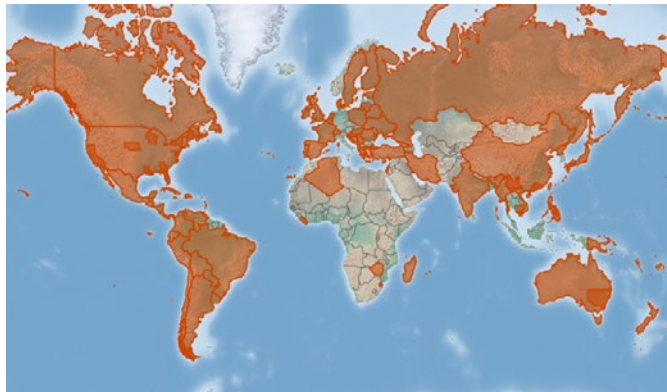
Varroa mites can survive without its host for five days, they are agile, and can move into new colonies quickly.

Varroa can be spread by beekeepers moving infested bees, beehives, and used beekeeping equipment (including clothing, vehicles etc). Varroa can also spread into new areas via natural behaviours of swarming, robbing, foraging, drifting.

Drone and worker bees can spread Varroa mites as they interact with other colonies whilst pollinating and gathering nectar and returning back to hives. Heavy varroa infestations can build up over 3–4 years leading to the eventual death of the colony. Collapsed colonies can have their honey robbed by another colony of honey bees transferring the mites to a new colony of honey bees. Swarming behaviour is another method of spread helping the mite to travel into new areas.

## Where is it now?

Varroa mite is present in Asia, Europe, the USA, South America, New Zealand and was discovered in the Newcastle area, NSW in 2022. As the eradication response has now transitioned to management Varroa is now endemic to NSW and will continue to spread across mainland Australia.



© CAB International, PlantwisePlus Knowledge Bank CC BY-NC-ND 4.0

**Current distribution of the Varroa mite (*Varroa destructor*)**



**Report a suspected sighting of a Varroa mites by calling the Exotic Plant Pest Hotline 1800 084 881 or at [agriculture.vic.gov.au/reportaplantpest](https://agriculture.vic.gov.au/reportaplantpest) or using the QR Code**



It is important to report any unusual plant pest or disease immediately to increase the chance of effective control and eradication. Please take quality photos of the pests or damage to include in your report where possible. Information on how to take a quality photo for identification can be found on our reporting page.

Disclaimer: This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. Information is correct as of December 2023.

# Yellow-spotted stink bug

*Erthesina fullo*

**EXOTIC PEST – not present in Australia**



© CSIRO

**Yellow-spotted stink bug (*Erthesina fullo*), collection specimen.**



© CSIRO

**Yellow-spotted stink bug (*Erthesina fullo*), collection specimen.**



Tong-Li Li iNaturalist.org © (CC BY-NC ND)

**Yellow-spotted stink bug (*Erthesina fullo*), eggs and instars**

## Why is this pest a concern?

The exotic yellow-spotted stink bug (*Erthesina fullo*) poses a significant biosecurity threat to the horticultural (particularly fruit and vegetable) and timber industries in Australia. It survives in temperatures between 5 and 36°C, is polyphagous with a host range of 57 plant species and has a strong ability to fly up to 3 kms, making it a highly adaptable invasive pest.

## How do I identify it?

All stages of the yellow-spotted stink bug have a head that tapers towards the front. Adults have a pear-shaped body. Nymphs vary from elliptical to pear-shaped and are a different colour from the adults. The adult has a feeding tube which can be seen from underneath and extends beyond the attachment of the hind legs.

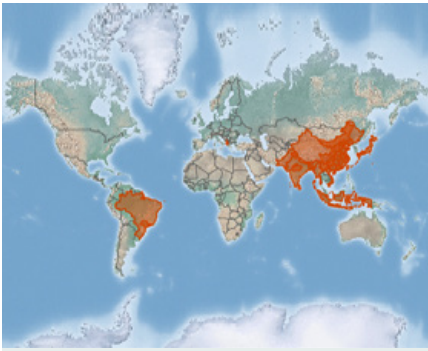
The most identifiable characteristics are their brightly coloured patterns: a narrow black antenna with a characteristic yellow band at the base of the fifth segment and yellow and brownish-grey banded legs. The dorsal body is covered with a yellow and brownish-grey spotted pattern with a yellow midline stripe from the head to the thorax and an alternating margin of yellow and black markings on the sides of the abdomen. Adult males are slightly smaller than females, at 18–22 mm long, 8–10.5 mm wide, whilst females are 19–23 mm long and 9–11 mm wide.

Egg masses are laid on the underside of leaves and consist of 12 eggs. In their lifetime, females can lay 126-173 eggs. Eggs are 2.9 mm long and 1.7 mm wide. Newly laid eggs start off as a light greenish colour maturing to golden brown, until ready to hatch when they turn a faint yellow.

## Where will I find it?

Eggs are found on the underside of leaves. Young instars, or nymphs, feed on weeds or grasses and as they develop and migrate, they feed on fruits, leaves, and stems of the plant.

Adult bugs will feed on host trees' leaves, shoots, flowers and fruit. Overwintering adult bugs can be found under bark or in crevices.



© CAB International, PlantwisePlus Knowledge Bank CC BY-NC-ND 4.0

### Current distribution of the Yellow-spotted stink bug (*Erthesina fullo*)

## Potential hosts in Australia

The polyphagous, yellow-spotted stink bug can feed on hosts from 29 plant families. Most are arboreal in the fruit and timber industries. Examples include pine, tree of heaven, hardwoods, paulownia, teak, willow, and poplar trees. Stone fruit, apples and pears are also susceptible hosts. Significant damage to kiwifruit, pear, apple and macadamia nuts have been reported from China. Potential native host plant species are unknown.

## What will I see?

Yellowish-brown discolouration or blemishes on fruit surfaces, followed by hardened depressions caused by the feeding. In severe cases immature fruit will drop. Other damage includes withering, defoliation of leaves and shoots, yellow or white blotches on leaves, aborted seeds and buds and black pits on nuts.

Expect to see an increase of bacterial and fungal pathogens which can cause fruit rot and other secondary diseases.

## When will I see it?

In the colder months, adult stink bugs overwinter. In spring, adult stink bugs can be found flying up to 3 km in five days, looking for mates, suitable hosts, and habitats. Throughout the warmer breeding months, you will find the eggs and juvenile instar nymphs on host plants.

Temperatures ranging between 15 and 30°C with a relative humidity of 75–95% to are required for eggs to develop.

## How does it travel?

Potential pathways of Yellow-spotted stink bugs entering Australia occur through trade, travel and transport on freight and goods and inadvertently on travellers' luggage. Also of concern is illegal importation of contaminated plants and plant material harbouring egg masses or live stink bugs.

## Where is it now?

Native to East and South-East Asia, including Bangladesh, China, India, Indonesia, Japan, Myanmar, Sri Lanka, Taiwan, Hong Kong, Malaysia, Pakistan, Thailand, and Vietnam. Recent establishments in Europe (Albania) in 2017, and South America (Brazil) in 2020.



**Report a suspected sighting of a Yellow-spotted stink bug by calling the Exotic Plant Pest Hotline 1800 084 881 or at [agriculture.vic.gov.au/reportaplantpest](https://agriculture.vic.gov.au/reportaplantpest) or using the QR Code**



It is important to report any unusual plant pest or disease immediately to increase the chance of effective control and eradication. Please take quality photos of the pests or damage to include in your report where possible. Information on how to take a quality photo for identification can be found on our reporting page.

Disclaimer: This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. Information is correct as of December 2023.