

Black twig borer (*Xylosandrus compactus*)

EXOTIC PEST DETECTION & SAMPLING GUIDE



5460806

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Background

Black twig borer is native to east Asia, but is now widely distributed across nearly all tropical regions of the world including most of sub-Saharan Africa, the Americas, south-east Asia and many Pacific islands including New Guinea. It is known to be a major pest of many commercial crops including avocado, mango, macadamia, fig, lychees, coffee and cocoa. It is also known to attack a wide range of other shrubs and trees including many species of Eucalyptus, Acacia and other trees that are native to Australia and grown in plantations overseas. Black twig borers are therefore a major exotic pest threat to Australia's forestry industry, several tree fruit industries, and to our natural environment.

How would I identify Black twig borer?

Identification by morphology

The black twig borer is a type of very small beetle. The adult beetles are only around 1.5 to 2 mm long. They are shiny and black or are very dark brown in colour, and cylindrical in shape.

Adult females tunnel into woody twigs of host plants leaving a small pin-sized entry hole, and then excavate the interior of the twig and lay their eggs. Eggs are white, extremely small, oval-shaped, and translucent.

The females also carry a type of fungus with them known as ambrosia fungus. This fungus grows inside the damaged twig and the developing larvae feed off the fungus once they hatch. Black twig borer grubs are white and legless. The body of young grubs tapers at the rear. Older grubs have brownish heads and round tails.

Identification by damage

Black twig borer infestation is usually only first noticed when die-back of twigs and branches occurs. Wilting of twigs and branches may become evident within several weeks after adult beetles infest the tree. A severe infestation can kill host plants, including large trees. Branches or twigs that are attacked are generally less than around 22 mm in diameter. Small twigs under 8 mm diameter are often only infested by one beetle, but usually die as a result. Larger twigs may be infested by up to 20

adult beetles. Entry holes are very small – less than 0.8 mm diameter – not much wider than a pin. The holes will generally be on the underside of twigs or branches. Cankers that can be from 12 mm to 200 mm long may form around the attacked area on large twigs if several adult females have infested the tree. This blocks water flow to the end of infested twigs causing attached leaves to brown and die rapidly.

How do I scout for Black twig borer?

To check for the presence of Black twig borers or developing larvae, twigs that appear potentially infested can be broken in half or sliced horizontally and visually inspected. White grubs may be present along with cottony-white fungal growth, and the surrounding pith of the stem may have dark stains. Pupae or adult beetles may also be present. Male beetles cannot fly and do not leave the brood chamber within infested twigs.

Could it be confused with an endemic species?

This is unlikely. While Australia does have a few native species of *Xylosandrus* beetle that are of similar size and shape, these only occur in far north Queensland. Native species are unlikely to be confused with Black twig borer as they do not feed on healthy or even stressed plants, and they are generally much paler in colour – usually tan-brown instead of very dark or almost black.

Figure 1. Black twig borer (*Xylosandrus compactus*) damage



What should I do if I suspect Black twig borer?

Black twig borer is a priority plant pest, exotic to Australia. If you have trees that show signs of twig damage, and unusual beetles or white grubs inside some of those twigs, call the **Exotic Plant Pest hotline on 1800 084 881**. The hotline will divert you to the appropriate state biosecurity agency, which will investigate the suspect detection further. To support an investigation you should take note of:

- The detection location (take a GPS coordinate using your phone);
- The host plant on which the suspect detection has been made;
- Damage symptoms (e.g. twig die back, entry holes); and
- A photo of all life stages observed (taking close-up photos of the same specimen from multiple angles is most useful for identification).

Taking a sample

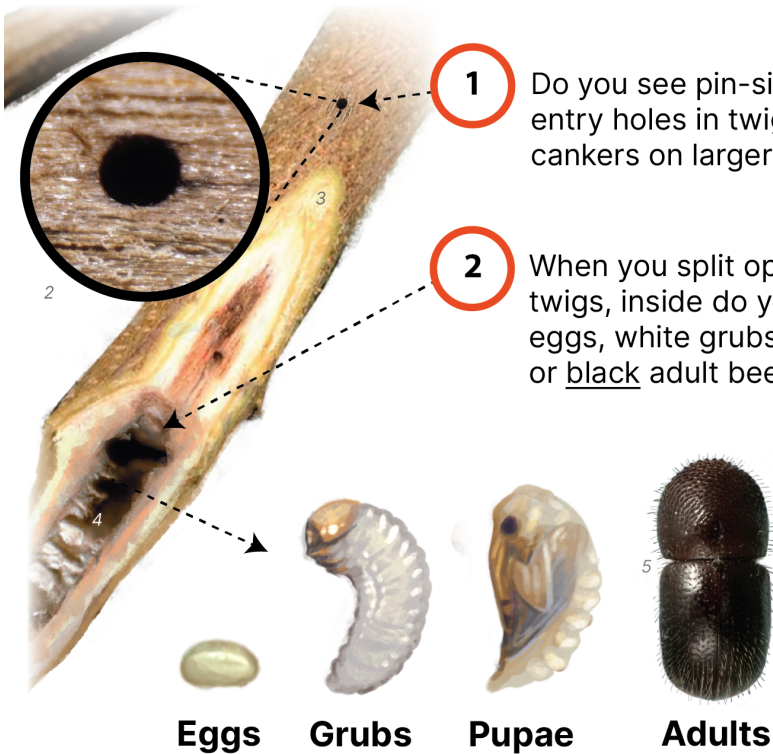
Taking a sample will also assist in a biosecurity investigation. Collect infested twigs in a ziplock bag – double bagging of specimens is ideal. Label the bag with the date and collection location and keep in the fridge in case a larval sample is needed by the biosecurity agency. If suspect adult Black twig borer are found, place it in a jar or vial with 80-95% isopropyl alcohol (rubbing alcohol) or methylated spirit.

Figure 2. Reporting decision making for Black twig borer (*Xylosandrus compactus*)

You have detected unexplained die back in twigs and small branches of orchard or plantation trees. **Should you report it?**



If you answer yes to EITHER of the following questions, it could be the **exotic black twig borer** (*Xylosandrus compactus*). Report it!



1 Do you see pin-sized entry holes in twigs or cankers on larger twigs?

Yes

2 When you split open dead twigs, inside do you find eggs, white grubs, pupae or black adult beetles?

Yes

But if you see red adults instead of black adults, it could be the granulate ambrosia beetle, already established in Queensland.

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More information

[Invasives.org Black twig borer](https://invasives.org/black-twig-borer/), [How to identify and control Black twig borer video](#)

References

Walker, K. (2008) Black twig borer (*Xylosandrus compactus*) Updated on 10/26/2021 [Available online: PaDIL](#)

