

NOT PRESENT IN AUSTRALIA – REPORT IT – CALL 1800 084 881

SAWYER BEETLES

Monochamus spp.

Description

Sawyer beetles of the genus *Monochamus* are of concern to Australia due to their role as carriers (vectors) of highly damaging pine wood nematodes (*Bursaphelenchus* sp.). Species of particular concern are Black pine sawyer beetle (*M. galloprovincialis*), Japanese sawyer beetle (*M. alternatus*), Obtuse sawyer beetle (*M. obtusus*), Southern pine sawyer beetle (*M. titillator*), White spotted sawyer beetle (*M. scutellatus*).

Sawyer beetle adults are large, long-bodied beetles up to 30 mm in length. They vary in colour from mottled black, brown-grey to reddish brown with long antennae, up to twice as long as their body length.

Sawyer beetle The eggs are about 4 mm in size, oval and yellowish-white, sometimes with a hint of brown. Larvae are legless, creamy white grubs found tunnelling beneath the bark. The larvae excrete frass (sawdust-like poo) which can be seen compacted in the larvae tunnels under the outer bark.

Affected tree species

Conifer tree species in the following genera: Pines (*Pinus* spp.), fir (*Abies* spp.), cedar (*Cedrus* spp.), larch (*Larix* spp.), and spruce (*Picea* spp.).

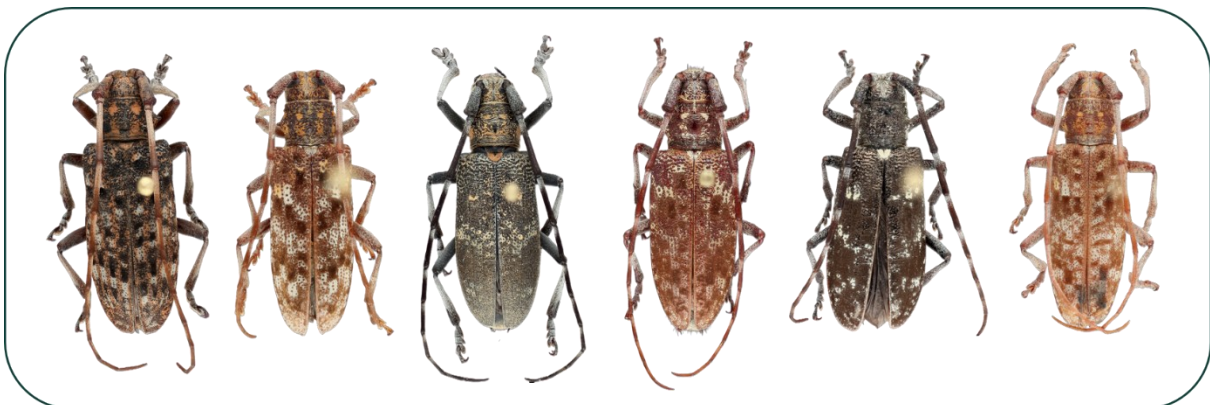


ABOVE: *Monochamus* spp. exit hole. Jijing Song and Juan Shi, Beijing Forestry University, Bugwood.org. INSET: *Monochamus* larva and wood frass, Jørn Misser, Danish Agricultural Agency, EPPO

Symptoms

On their own, sawyer beetles cause limited impacts on trees. Symptoms of beetle activity include the presence of holes in the trunk and branches of trees along with sawdust (frass) at the bottom of trees or branches.

Most damage is due to associated pinewood nematodes (*Bursaphelenchus* spp.) introduced into a host tree by the sawyer beetles as they lay their eggs or more commonly as they feed on the young growing shoots. The



LEFT to RIGHT: *Monochamus alternatus*, *M. carolinensis*, *M. galloprovincialis*, *M. obtusus*, *M. scutellatus*, *M. titillator*, Sarah Smith, USDA APHIS PPQ, Bugwood.org.

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nematodes feed, move and multiply within the tree's resin canals and water conducting vessels, which eventually become blocked.

The most apparent symptom is yellowing and browning of leaves, branches and the entire crown of the tree, followed by rapid death of the tree, often within weeks or months.

Suspected cases must be reported.

Time most likely to be seen

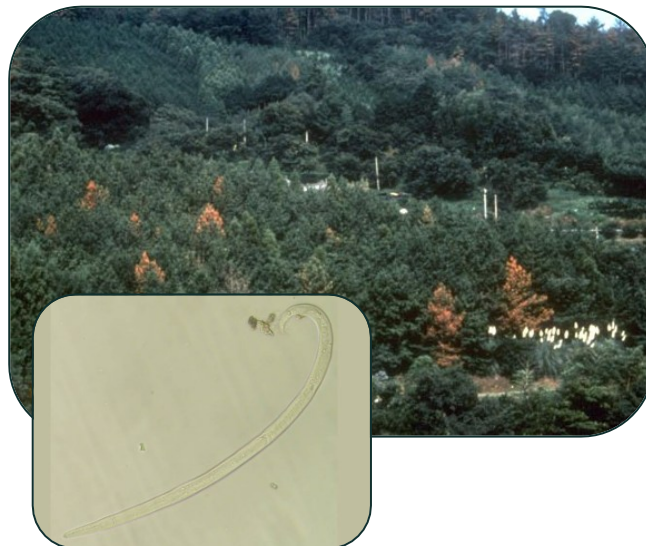
Sawyer beetles emerge in early summer, so beetles are most likely to be seen at that time. Similarly, disease caused by the nematodes carried by the beetles is exacerbated by hot, dry weather over spring, summer, so symptoms such as crown browning or tree death will become visible then.

Can be confused with

The long antennae of sawyer beetles makes them distinctive from other beetles likely to be found on pines in Australia. When the nematodes infect a susceptible tree, they cause yellowing and wilting symptoms that could also be caused by other disorders (e.g. Sirex wood wasp, Diplodia canker or Five-spined bark beetle), but the rapid onset of leaf yellowing and wilting (as short as four weeks) along with tree death is unlike other pests currently found in Australia.

Further information

- Pest and Diseases Image Library – <https://www.padil.gov.au/search/?q=Monochamus%20>.
- Atlas of Living Australia – https://bie.ala.org.au/species/ALA_DR31252_1989.
- Global Biodiversity Information Facility – <https://www.gbif.org/taxon/BJ5VF>.
- European and Mediterranean Plant Protection Organization Global Database – <https://gd.eppo.int/taxon/1MONCG>.



ABOVE; Dead and dying conifers in a forest setting due to pinewood nematode (*Bursaphelenchus xylophilus*) vectored by species of Sawyer beetle. Simon Hinkley & Ken Walker, Museums Victoria, PADIL. INSET; Side view of pinewood nematode under the microscope, Mike Hodda, CSIRO, PADIL.

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