

Table 1. Risk and monitoring period for elephant weevil activity.

Flowering			Fruit drop		Golf ball			Colour break	Maturation		
Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul

Description

Elephant weevils are native to Australia.

Immature larvae are soft and creamy-yellow. They are legless, approximately 20 mm long and curl up to form a C-shape. Pupae start transparent, becoming darker brown as they develop.

Adults are black, grey or brown and between 8 and 20 mm long. The body is densely covered with scales. The front legs are longer than the other two pairs (Figure 1). Clubbed antennae form an L-shape with a distinct elbow. The adult's long snout (rostrum) is the most distinguishing feature. Adults have wings and can spread reasonable distances.

Life cycle

Females lay up to 80 eggs during their lifetime, underneath and in gaps in the tree bark. Egg laying occurs from October to November. Larvae tunnel downwards feeding on the wood, tightly packing tunnels with fine fibrous material that looks like sawdust. The larvae tunnel for 10 months. When fully grown, they move back up the tunnel to pupate. Pupation occurs up to 1 m above ground level within the trunk in cells at the end of these tunnels. The pupal stage lasts for 2 months. The adults emerge by boring a round hole directly to the trunk exterior. A complete life cycle takes about 1 year (Figure 2). Adults emerge from September to February, peaking in December. They are strong fliers and feed on the bark of woody plants.

Host plants: eucalypts, Acacias, Casuarinas, native chestnuts, citrus, grapevines, apples, apricots, peaches and blueberries.

Damage

Adult elephant weevil attacks young and older trees, however, damage is reported more frequently in older trees (Figure 3). The adult weevil damages young plants by eating leaves and stems and scalloping the foliage. Young branches can also be ring-barked by weevil feeding. The larvae are wood borers, tunnelling in the trunk and roots. Adult exit holes are 5–6 mm in diameter, located mostly in the lower trunk and rootstock. Multiple exit holes



Figure 1. Adult elephant weevil.

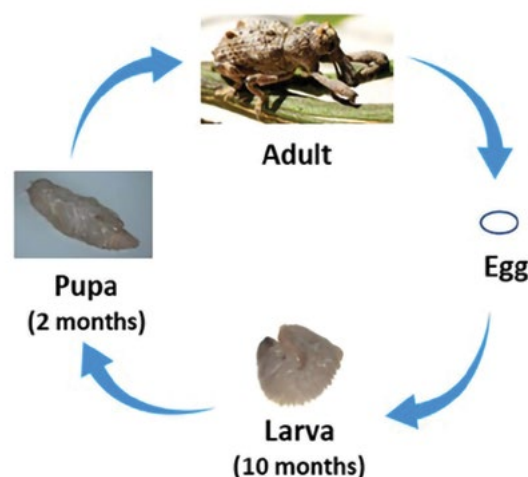


Figure 2. Elephant weevil life cycle.



Figure 3. Elephant weevil damage to young (left) and old (right) trees.

can occur on one tree trunk. Most damage is done by tunnelling larvae. Fruit size and tree health might be reduced on heavily infested trees. Severe infestation might cause branch/tree dieback. Healthy trees are unlikely to have significant elephant weevil damage.

Risk period: September to February (Table 1).

Monitoring

Check blocks for adult emergence holes in the lower trunk and branches, particularly on unhealthy trees. Cutting across a branch or tree trunk will reveal tunnels filled with frass that looks similar to sawdust (Figure 4). Freshly chewed bark on twigs might indicate the presence of elephant weevil (Figure 5).

Management and control

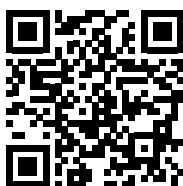
Cultural: maintain healthy trees and avoid tree stress such as waterlogging and drought. Often, elephant weevil infest stressed trees closest to windbreaks. Keep weeds down and maintain healthy plants.

Biological: entomopathogenic fungi e.g. *Beauveria bassiana* (Figure 6) can infect elephant weevil and could be part of an integrated control strategy.

Chemical: chemical control of elephant weevil is difficult. There are currently no registered chemicals for elephant weevil in citrus.

More information

Murdoch G. 2010. Biology and integrated pest management of the elephant weevil borer, *Orthorhinus cylindrirostris* (EWB) (Fabricius) (Coleoptera: Curculionidae) in blueberries. The University of Sydney. <http://hdl.handle.net/2123/8599>



Smith D, Beattie GA and Broadley R. 1997. *Citrus pests and their natural enemies: integrated pest management in Australia*. Queensland Department of Primary Industries, <http://hdl.handle.net/10462/pdf/9446>



Figure 4. Elephant weevil tunnels filled with sawdust in a young (left) and old (right) tree.

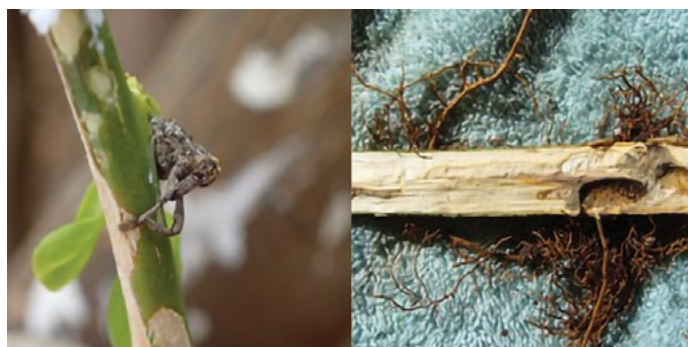


Figure 5. A young branch that has been chewed by an elephant weevil (left) and a larvae tunnel inside a young tree (right).



Figure 6. An adult elephant weevil infected with an entomopathogen (*Beauveria bassiana*). Photo: Murdoch (2010).