



Department  
for Environment  
Food & Rural Affairs

# Plant Pest Factsheet

## Citrus longhorn beetle

### *Anoplophora chinensis*



**Figure 1.** Citrus longhorn beetle adult (21-37 mm in length) and exit hole (6-11 mm across). ©Fera Science Ltd

## Background

The citrus longhorn beetle, *Anoplophora chinensis* (Forster), is a non-native pest that is extremely damaging to a wide range of broadleaved trees and shrubs and is a regulated quarantine pest for the UK.

Since 2005 citrus longhorn beetle has been intercepted several times on plants coming into the UK at nurseries and at premises involved in importing bonsai and ornamental trees from China, Japan and South Korea. The pest has also been found associated with imported

trees in private gardens. Maples (*Acer* spp.) have been the most frequently recorded hosts, especially *Acer palmatum* (Japanese maple).

## Geographical Distribution

The natural geographic range of the beetle includes China, Japan, and other countries in Southeast Asia. The main pathway of introduction of this pest into the UK and Europe is via the trade in ornamental trees from Asia. It poses a serious threat to horticulture, forestry and native trees in the UK.

An outbreak of citrus longhorn beetle was detected in Parabiago, Lombardy, Italy in 2000 and since then two other outbreaks have been detected in Lombardy at Montichiari (2007) and Gussago (2008). Between 2001 and 2013, Lombardy plant health service spent €180 million on eradication measures, including the removal of over 25,000 trees, however the pest may have spread too far for eradication to be practical. Outbreaks of the pest have also been discovered in Soyons, France (2003), Turanj / Sveti Filip I Jakov, Croatia (2007), Westland, the Netherlands (2007), Rome, Italy (2008), Boskoop, the Netherlands (2009) and Prato, Italy (2014). In and around Boskoop, there is a high concentration of nurseries supplying trees and shrubs to the rest of Europe.

There have been no outbreaks of the citrus longhorn beetle in the UK to date, but there have been numerous interceptions in the UK since 2005 and outbreaks in continental Europe. This demonstrates that this species has the potential to become established and pose a significant threat to horticulture, forestry and native trees in the UK.

## Host Plants

Citrus longhorn beetle has an extensive host range of deciduous trees and shrubs including many native species and others grown as ornamentals in the UK. In March 2012, the EU published emergency measures to reduce the risks of the introduction and spread of citrus longhorn beetle. These include requirements concerning the importation of plants from China and other third countries where the pest is native, plus the production and movement of plants produced within demarcated areas in the EU. They also set out the measures that member states are required to take to eradicate or contain populations of the pest. This includes a list of 'specified plants' to which measures apply, and which are known to be the most significant hosts of citrus longhorn beetle. They are: *Acer* spp. (maples), *Aesculus hippocastanum* (horse chestnut), *Alnus* spp. (alder), *Betula* spp. (birch), *Carpinus* spp. (hornbeam), *Citrus* spp., *Cornus* spp. (dogwood), *Corylus* spp. (hazel), *Cotoneaster* spp., *Crataegus* spp. (hawthorn), *Fagus* spp. (beech), *Lagerstroemia* spp., *Malus* spp. (apple), *Platanus* spp. (plane), *Populus* spp. (poplar), *Prunus laurocerasus* (cherry laurel), *Pyrus* spp. (pear), *Rosa* spp. (rose), *Salix* spp. (willow) and *Ulmus* spp. (elm).

## Description

Adult beetles are large and black with variable white markings. Particularly distinctive are their antennae, which are longer than their bodies (between 1.2 and 2 times the body length) and are black with white/light blue bands. The larval stage of the beetles is the most damaging. The larvae are legless and feed internally on the pith and vascular systems of the lower trunk and root. The tunnels created by the feeding larvae leave trees susceptible to diseases and wind damage. The adults feed on foliage and the bark of young shoots for a short period (10-15 days) causing limited damage.



**Figure 2.** Citrus longhorn beetle adult (21-37 mm in length). Fifty pence coin provided for scale.  
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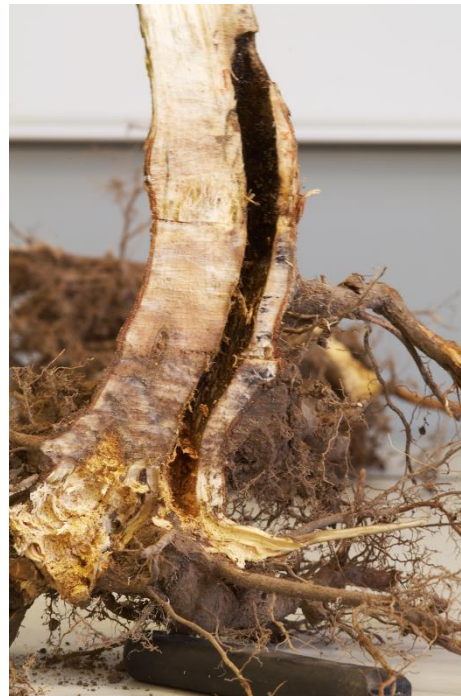
## Biology

Citrus longhorn beetles spend most of their life as larvae feeding and developing inside the main trunk or root, and hence there can be little or no external sign of their presence to anyone inspecting a host tree. Their lifecycle can be one to two years in Asia, however in the cooler climate of the UK the lifecycle is likely to be three or more years, as experienced in the Netherlands outbreaks. The most obvious symptoms of citrus longhorn beetle damage are adult exit holes (Fig. 1) which are typically 6-11 mm in diameter and are generally found towards the base of trunks and exposed roots. These holes are circular and on smooth barked trees resemble drilled holes. Other less obvious symptoms include scars/slits on the bark at the site that eggs have been laid and piles of frass (sawdust like droppings) at the base of an attacked tree. In thin stemmed trees bulges in the trunk can indicate the presence of a pupal chamber.

Adult beetles have most commonly been found in the UK in July and August, but findings have occurred as early as May and as late as October.



**Figure 3.** A citrus longhorn larva within its cut open host plant. The larvae grow up to 56 mm in length. ©Fera Science Ltd



**Figure 4.** The tunnel and exit hole left within a young Japanese maple tree (*Acer palmatum*) that has been attacked by a citrus longhorn beetle. ©Fera Science Ltd

## Pest Management and Reporting

As well as being difficult to detect, citrus longhorn beetles are difficult to control because the larvae and pupae are protected from foliar insecticide treatments and most predators, by the surrounding trunk or roots. Currently, the only totally effective way of controlling larvae is to remove the infested trees and roots systems and to safely dispose of the material by chipping, burning or by deep burial. Foliar insecticide sprays can be effective against adults but are not effective against larvae and pupae. Pheromone traps have been used to monitor populations in Lombardy.



**Figure 5.** Tree felling in Lombardy, Italy for citrus longhorn beetle control. ©Neil Giltrap and Dominic Eyre, Defra

Suspected outbreaks of **citrus longhorn beetle** or any other non-native plant pest should be reported to the relevant authority:

**For finds at garden centres, plant nurseries or private gardens in England and Wales, contact your local APHA Plant Health and Seeds Inspector, or the PHSI headquarters, in York:**

Tel: 0300 1000 313

Email: [planthealth.info@apha.gov.uk](mailto:planthealth.info@apha.gov.uk)

**For Scotland, contact the Scottish Government's Horticulture and Marketing Unit:**

Email: [hort.marketing@gov.scot](mailto:hort.marketing@gov.scot)

**For Northern Ireland, contact the DAERA Plant Health Inspection Branch:**

Tel: 0300 200 7847 Email: [planthealth@daera-ni.gov.uk](mailto:planthealth@daera-ni.gov.uk)

Web: <https://www.daera-ni.gov.uk/topics/plant-and-tree-health>

For additional information on UK Plant Health please see:

<https://planthealthportal.defra.gov.uk/pests-and-diseases/uk-plant-health-risk-register/>

<https://planthealthportal.defra.gov.uk/>

<https://www.gov.uk/plant-health-controls>

<http://www.gov.scot/Topics/farmingrural/Agriculture/plant/PlantHealth/PlantDiseases>

<https://www.daera-ni.gov.uk>

**For finds in the wider environment:**

<https://treealert.forestresearch.gov.uk/>

## Authors

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