

Citrus Longhorned Beetle

NOT KNOWN TO
OCCUR IN IDAHO



Common Name: Citrus longhorned beetle

Scientific Name: *Anoplophora chinensis* (Forster)

The citrus longhorned beetle (CLHB), *Anoplophora chinensis* (Forster), is a serious pest of citrus in China, but did not occur in the U.S. until it was detected in a Washington nursery in 2001. An eradication program was immediately implemented in Washington and there have subsequently been no new infestation reports. However, with the increasing global trade and movement of plant materials, there is an imminent risk of the establishment of CLHB in new areas.

With a host range of more than 40 hardwood species, CLHB is a potential threat to natural areas, as well as fruit trees and woody ornamental plants. Unlike many other native borer pests that primarily attack dead trees, CLHB attack apparently healthy trees. Once established, it can be extremely difficult and expensive to eradicate. A closely related species, the Asian longhorned beetle, *Anoplophora glabripennis* (Motschulsky), caused the destruction of thousands of trees in New York and Chicago and cost \$369 million for eradication efforts.

Description

Adult: The beetle is large, stout, and approximately 21 to 37 mm (~1 - 1.5 inch) long with shiny black elytra (black body shell) marked with 10 to 12 white round spots (Lingafelter and Hoebeke 2002). Males are generally smaller than females, and have their abdomen tip entirely covered by the elytra, in contrast to the partially exposed abdomen of females (Lieu 1945). Also, the male elytra are narrowed distally compared to the rounded female elytra. Another difference between males and females is antennal size. The male's antennae are approximately twice as long as the body when compared to the female's antennae which are only slightly longer than the body. Each segment of the long, 11-segmented antennae, is basally marked with white or light blue bands. The anterior and posterior narrowed pronotum (first segment of the thorax) has a pair of stout spines extending from its sides.

The base of the elytra has numerous short processes (tubercles) called granulae, a morphological character that may help to differentiate CLHB from the Asian longhorned beetle, *Anoplophora glabripennis*.

Egg: The egg is 5.5 mm (0.22 inch) long and 1.7 mm (0.07 inch) wide, elongated, sub-cylindrical, smooth-surfaced, and tapered at both ends; it is initially creamy-white, but gradually turns yellowish-brown when ready to hatch (Lieu 1945).

Larva: The legless larva, which is 5 mm (0.2 inch) long at the time of hatching, grows to a size of 52 mm (2 inches). It is creamy-white with some yellow, chitinized patterns on the prothorax. (front)

Pupa: The pupa is 27 to 38 mm (1 to 1.5 inch) long; it has elytra that only partially covers the membranous hind wings and curves around to the ventral surface of the body.

Life Cycle

In China, CLHB is known to emerge from April to August, but is most abundant from May to July. Soon after emergence, the adult feeds on leaves, petioles, and the bark of twigs of preferred host plants. Most activity, including feeding and mating, occur during the day. Eggs are deposited under the bark through a T-shaped oviposition slit made at the base of the trunk or exposed roots. Under rearing conditions, Lieu (1945) observed an average fecundity of 15 eggs, but some sources mention that a single female is capable of laying as many as 200 eggs. The young larva hatches out in one to three weeks and initially feed on the green, sappy portion of the inner bark. During its later instars, the larva makes irregular tunnels in the wood, and continue to do so until pupation. The pupal stage lasts for four to six weeks until a pre-adult is formed with the final molt. The pre-adult is inactive and takes about one to two weeks to mature and emerge out of the tunnel. CLHB takes approximately one year to complete its development.

Host Plants

The citrus longhorned beetle is a polyphagous pest attacking living trees of over 100 species. It is a pest of major concern for citrus growers in parts of China. Its primary hosts include, lime/lemon/oranges/tangor (*Citrus*), trifoliolate orange (*Poncirus trifoliata*), apple (*Malus pumila*), Australian pine (*Casuarina equisetifolia*), poplar (*Populus*) and willow (*Salix*). However, it attacks a wide range of trees and shrubs in 26 different families and more than 40 genera.

The Washington State Department of Agriculture declared the following genera (species) of plants as potential hosts for CLHB:

maple (*Acer*), silk tree (*Albizzia*), alder (*Alnus*), birch (*Betula*), Camellia, hickory/pecan (*Carya*), chestnut (*Castanea*), Japanese cedar (*Cryptomeria*), wild olive (*Elaeagnus*), loquat (*Eriobotrya japonica*), beech (*Fagus*), fig (*Ficus*), 'Nagami' kumquat (*Fortunella marginata*), ash (*Fraxinus*), mallow (*Hibiscus*), holly (*Ilex*), walnut (*Juglans*), spicebush (*Lindera*), amur (*Maackia*), mulberry (*Morus*), *Photinia*, sycamore/plane tree (*Platanus*), trifoliolate orange (*Poncirus trifoliata*), poplar (*Populus*), cherry/peach/apricot/plum (*Prunus*), firethorn (*Pyracantha*), pear (*Pyrus*), oak (*Quercus*), sumac (*Rhus*), locust (*Robinia*), rose (*Rosa*), blackberry/raspberry (*Rubus*), willow (*Salix*), pagoda tee (*Sophora*), *Stransvaesia*, snowbell tree (*Styrax*), and elm (*Ulmus*).

Damage

The majority of damage associated with CLHB is caused by the larval stages which feed and tunnel on the woody portion of the host plant trunk. The wounds created during the course of feeding increase the host susceptibility to various secondary plant pathogens. Later instar larvae have stronger mouthparts and are able to burrow deep into the wood and create irregular tunnels that interfere with the water and nutrient transportation resulting in rapid tree decline. As compared to the younger trees, older trees with larger trunk diameters are able to sustain more damage. Although adults do feed on leaves and the bark of twigs, the damage is usually not considered severe.

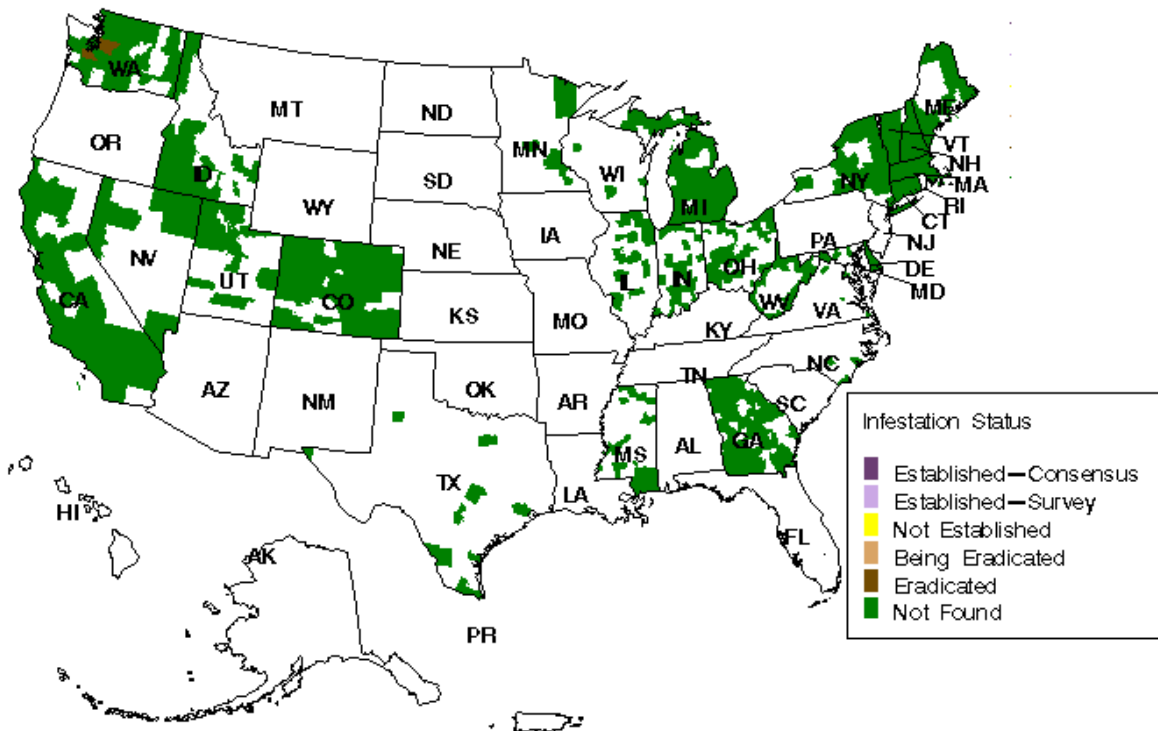
Other Resources

http://creatures.ifas.ufl.edu/trees/beetles/citrus_longhorned_beetle.htm

<http://edis.ifas.ufl.edu/IN633>

**Reported Status of
Citrus Longhorned Beetle , *Anoplophora chinensis*
in US and Puerto Rico**

Data retrieved from National Agricultural Pest Information System on 01/17/2012



The Center for Environmental and Regulatory Information Systems does not certify the accuracy or completeness of the map.