

# Citrus long-horned beetle *Anoplophora chinensis*

The citrus long-horned beetle is an exotic wood-boring insect that attacks various broadleaf trees and shrubs. In Michigan, food host plants for this insect are present in urban landscapes, orchards, hardwood forests, and riparian habitats. This beetle is a concern to lumber, nursery, tree fruit, landscaping, and tourism industries.

[Michigan risk maps for exotic plant pests.](#)

## Other common names

citrus-root cerambycid, white spotted citrus long-horned beetle

## Systematic position

Insecta > Coleoptera > Cerambycidae > *Anoplophora chinensis* (Forster)

## Global distribution

Native to Asia, primarily China, Japan, and Korea. Less commonly found in Indonesia, Malaysia, Myanmar, Philippines, Taiwan, and Vietnam. Also reported in Italy.

## Quarantine status

This insect has been intercepted at U.S. ports of entry in Georgia, Wisconsin, and Washington and recovered from bonsai and nursery stock shipped from Japan and Korea. It is listed as an exotic organism of high invasive risk to the United States (USDA-APHIS 2008).

## Plant hosts

A wide range of broadleaf trees and shrubs from over 26 plant families and 40 genera. The beetle can infest many fruit, nut, ornamental, shade and naturally-grown woody plants. Primary hosts of concern for Michigan include apple (*Malus pumila*), birch (*Betula*), cherry (*Prunus*), hibiscus (*Hibiscus*), maple (*Acer*), oak (*Quercus*), poplar (*Populus*), sycamore (*Platanus*) and willow (*Salix*) trees.

## Biology

Adults feed on bark and leaves of host trees. Females lay eggs in holes cut in bark on the lower trunk or exposed roots. Larvae feed and bore inward in the wood creating irregular tunnels. Pupation and adult development occur in the wood, and adults exit the tree out of a round hole on a bark surface. Usually one generation develops per year. Larval feeding can weaken or kill trees.

## Identification

- **Adult:** 25-40 mm long. Shiny black in color with



Adult. (Photo: A. Wagner, USDA APHIS PPQ, Bugwood.org)



Larva. (Photo: Plant Protection Service Archive, Plant Protection Service, Bugwood.org)

10-12 white spots on each side of wing cover. Stout spine extends from each side of the pronotum (a body segment behind the head). Long antennae with alternating black and white bands.

- **Larva:** White, opaque, legless grub; 45-60 mm long when mature with an amber-colored head and black mouthparts.

## Signs of infestation

- Adults maybe present on foliage May to July.



Adult exit hole at the base of trunk. (Photo: Plant Protection Service Archive, Plant Protection Service, Bugwood.org)

to collect and kill adult beetles in orchards in an attempt to reduce populations (McDougall 2001).

### **Economic and environmental significance to Michigan**

If the citrus long-horned beetle were to become established in Michigan, it may disrupt Michigan's pome fruit productions through direct damages and regulatory measures. Establishment may also result in restricted movements and exports of logs and solid wood products via quarantine, reduced marketability of lumber, and reduced plantings of broadleaf trees in urban landscaping. Environmental impacts of invasion may include loss of biodiversity in broadleaf forests and urban landscapes (e.g., trees killed or weakened by the infestation or infested trees destroyed in eradication efforts), and increased risk of wildfires more trees die. Tens of thousands of trees have been cut down in New York, New Jersey and Chicago in effort to eradicate the related Asian long-horned beetle, *Anoplophora glabripennis*.

- Round exit holes (6-11 mm in diameter) on the lower trunk or exposed roots.
- Sawdust like frass or wood-pulp around exit holes at the base of a tree.

### **Likely pathways of entry in Michigan**

Shipments of solid wood packing material, solid wood products, logs, lumber, bonsai and nursery stock of broadleaf trees from China, Japan and Korea.

### **Management notes**

Infestations are eradicated by removing and destroying infested trees. In Japan, children are often paid by growers

\*\*\*If you find something suspicious on a susceptible host plant, please contact MSU Diagnostic Services (517-355-4536), your county extension office, or the Michigan Department of Agriculture (1-800-292-3939).\*\*\*

### **References**

McDougall, D. N. 2001. Pest Reports—EXFOR Database: *Anoplophora chinensis*. (<http://www.spfnc.fs.fed.us/exfor/data/pestreports.cfm?pestidval=76&langdisplay=english>)

Gyeltshen, J. and A. Hodges. 2005. Featured creatures: citrus longhorned beetle. University of Florida Institute of Food and Agricultural Sciences. ([http://entomology.ifas.ufl.edu/creatures/trees/beetles/citrus\\_longhorned\\_beetle.htm](http://entomology.ifas.ufl.edu/creatures/trees/beetles/citrus_longhorned_beetle.htm))

USDA-APHIS. 2008. Pests of national concern for fiscal year 2009. ([http://www.aphis.usda.gov/plant\\_health/plant\\_pest\\_info/pest\\_detection/downloads/survey/survey-2009/Appendix-G.pdf](http://www.aphis.usda.gov/plant_health/plant_pest_info/pest_detection/downloads/survey/survey-2009/Appendix-G.pdf))

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