



# America's Least Wanted Wood-Borers

Department of Entomology

## JAPANESE PINE SAWYER, *MONOCHAMUS ALTERNATUS* (HOPE)

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This alien longhorned beetle is native to southeast Asia. The native range of this beetle has similar climate and similar host plants as in North America. If introduced, this beetle will have a high likelihood of proliferating in the new environment. These beetles are vectors of the pinewood nematode. Introduction of an exotic and highly pathogenic strain of nematode through this insect pest could result in tremendous damage to North American pines.

**Distribution:** *Monochamus alternatus* is native to China, Taiwan, Korea, Laos and Japan.

### General Description:

**Adult:** Adult beetles are a mosaic of orange, black and gray spots over the entire body. Body is 15 – 28 mm long with females normally larger than males. Antennae are longer than the body in both the sexes.

**Larva:** Grubs are white, legless, average 43 mm long mature, with an amber colored head capsule and black mouth parts.

**Biology:** In the native range the host plants include pine (*Pinus* sp.), spruce (*Picea* sp.), fir (*Abies* sp.), cedar (*Cedrus* sp.) and larch (*Larix* sp.). Trees under stress that are recently downed are favored. Eggs are deposited in slits in the bark made by the females. Larvae feed for some time in the cambium before eventually tunneling into the heartwood. Pupation takes place in the wood and adults emerge by chewing a round exit hole. Adults feed on the tender shoots of the host trees before searching for breeding sites. If adults are infected with nematodes, the nematodes are transmitted from tree to tree during this process. Female adults can lay 100 – 200 eggs. The lifecycle can be completed in one year.

**Source:** Ciesla, W.M. (2001). ExforDatabasePestReport, *Monochamus alternates*. Available: <<http://spfnic.fs.fed.us/exfor/data/pestreports.cfm?pestidval=77&langdisplay>>. Accessed: Oct. 20, 2011.



*Monochamus alternatus*, adult  
(Photo credit: Kyle Schnepf)

**Molecular Identification:** A DNA barcode for this species has been developed and is freely accessible online at the National Center for Biotechnology Information <[www.ncbi.nlm.nih.gov](http://www.ncbi.nlm.nih.gov)>, and the Barcode of Life Data Systems database <[www.boldsystems.org](http://www.boldsystems.org)>. If a specimen of this species is suspected, DNA analysis could help to confirm the identification even if the material is of a life stage that cannot be identified with morphological identification techniques.

**NCBI accession numbers for *M. alternatus*:**  
JQ015143 - JQ015147

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