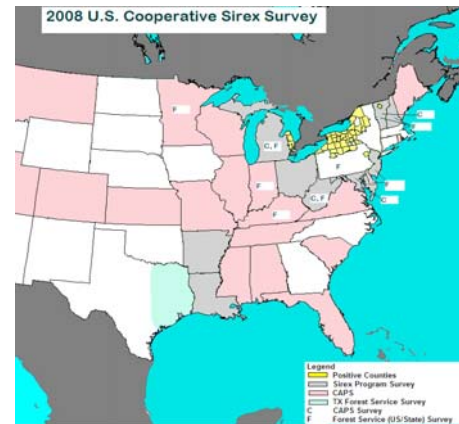


Sirex woodwasp *Sirex noctilio*

Introduction

Sirex woodwasp is native to Europe, Asia, and northern Africa. In its native range, it attacks pines almost exclusively and is considered to be a secondary pest. This wasp was introduced into Australia, New Zealand, South Africa, Uruguay, Argentina, Chile and Brazil, where it has caused significant mortality in plantations of exotic pines in these countries.

In the United States, the insect was first found in upstate New York in 2005, and has since been found in several northeastern states, lower Michigan, and Ontario, Canada. In North America, it has been feeding in Scotch, red, and white pine. The insect is known to also infest Austrian, Monterey, loblolly, slash, shortleaf, ponderosa, lodgepole, and jack pine in plantings in other parts of the world. At low populations, *sirex* woodwasp selects suppressed, stressed, and injured trees for egg laying. Smaller diameter, suppressed trees are most heavily attacked in other parts of the world. Infestations can build up in these trees and then move into healthy pines.



Distribution of *Sirex* woodwasp in the United States – 2008. Source: www.aphis.usda.gov

The potential impact of this insect in Wisconsin is still unknown. Based on impacts elsewhere, it is believed that stressed, overstocked pine plantations, jack pine stands and abandoned Scotch pine Christmas tree plantations are at highest risk for heavy mortality.

Symptoms and Signs

During the 3-6 months following an attack, needles of infested trees wilt and then change color to yellow and finally to red, followed by heavy needle fall. Infested trees may have resin beads or dribbles at the egg laying sites. Adults emerge from trees by chewing round exit holes that vary from 1/8 to 3/8 inch in diameter.



Left: Exit holes caused by *Sirex noctilio*.
Right: Wilting foliage on pine infested with *Sirex noctilio*.
Photos by Dennis Haugen, bugwood.org

Sirex woodwasps are large insects (1.0 to 1.5 inches long). Female adults have dark metallic blue or black bodies with reddish-yellow legs and black feet. The head and thorax of male adults is metallic blue; the abdomen is orange at the center and black at the base and tail end. Legs on males are also reddish-yellow, but hind legs are black. On males and females antennae are entirely black. All woodwasp larvae (including native, non-invasive species) are

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creamy white, legless with a distinctive dark posterior spine. Positive identification of this insect requires an insect taxonomist.



Left: Adult female. Kent Loeffler/Cornell University
Right: Adult male with orange abdomen and dark tip. David R. Lance, USDA APHIS PPQ, Bugwood.org

Life cycle

Adults emerge from July through September. Females drill into the wood and deposit their eggs along with a fungus (*Amylostereum areolatum*) and toxic mucus. The fungus and mucus act together to kill the tree and create a suitable environment for larval development. Larvae feed on the fungus as they tunnel through the wood. The larval stage generally takes 10-11 months. Mature larvae pupate close to the bark surface. Adults emerge about 3 weeks later.

Management Options

In most regions of the world where *Sirex* woodwasp has been introduced, it is controlled by a nematode that parasitizes the larvae and ultimately sterilizes adult females. This nematode has not been introduced into the wood wasp populations in the US or Canada as of 2009.

Impacts of this insect can be reduced by keeping pines healthy and vigorously growing, and by removing low-vigor trees. Minimize damage to residual pine trees. A publication for foresters is available at:

http://www.aphis.usda.gov/plant_health/plant_pest_info/sirex/downloads/dodds_NJAF.pdf

In susceptible stands, monitor for signs of the insect by conducting walk through surveys, hanging detection traps, and examining trees that have recently died.

Report Sirex Woodwasp Sightings:

Report possible *Sirex* woodwasp sightings to your DNR regional forest health specialist.

Sources

Haugen, D.A. and E.R. Hoebeke. June 2005. Pest Alert: *Sirex* woodwasp USDA FS.

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