

Black spruce beetle *Tetropium castaneum*

The black spruce beetle is a wood-boring insect that burrows into coniferous trees. This exotic beetle, if introduced, may potentially impact Michigan's natural forests, parks, urban and residential areas, tree nurseries and Christmas tree industry.

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

Systematic position

Insecta > Coleoptera > Cerambycidae > *Tetropium castaneum* (Linnaeus)

Global distribution

Widely occurring in Europe and Asia, including Scandinavia, England, Scotland, Slovenia, Bosnia-Herzegovina, Bulgaria, Russia, Japan, Korea, Turkey, Kazakhstan, China and Mongolia.

Quarantine status

This insect is listed as an exotic organism of high invasive risk to the United States (USDA-APHIS 2008). The beetle has been intercepted at the ports of British Columbia, Canada and Portland, Oregon, and in traps set in Oregon east of Portland. Its establishment has not been confirmed in Oregon or elsewhere in North America.

Plant hosts

Conifers: primarily spruce, pine and fir. Occasional infestation is noted on juniper, larch and hardwoods (oaks and walnuts).

Biology

Normally one generation life cycle occurs per year. Eggs are laid under bark scales of the host tree. After hatching, larvae feed in cambium, producing a network of feeding tunnels. Older larvae bore into phloem horizontally for 2-5 cm, and then bore vertically for 3-4 cm, forming L-shaped galleries. Mature larvae pupate at the end of feeding tunnels. Adults bore through the trunk outward and emerge through exit holes in bark. They then disperse and mate.

Identification

- **Adult:** body typically black, 8-18 mm long and flattened; pronotum shiny; wing covers brown with two longitudinal ridges.
- **Larva:** body yellow-white, 15-27 mm long; head reddish brown.

Native *Tetropium* species are present in Michigan which



Adult.
(Photo: S. Kinelski, Bugwood.org)



Larva (right) and pupa (left).
(Photo: F. Stergulc, Bugwood.org)

may look similar to the exotic black spruce beetle. Positive identification requires examination of adults by a trained taxonomist.

Signs of infestation

(See brown spruce longhorn beetle as both beetles cause similar host plant symptoms.)

- Excessive resin flow down the trunk from larval wounds.
- Larval entrance holes in bark, approximately 5 mm in diameter.
- Networks of irregular tunnels under the bark.
- Browning of foliage.
- Dying spruce trees.
- Adult beetles maybe present May through August.

Management notes

Infestations would be eradicated by destroying infested trees and quarantine measures would restrict movement of infested wood products (Dobesberger 2005).

Economic and environmental significance to Michigan

The beetle is considered a secondary forest pest in the native range of Eurasia as it attacks only weakened and felled trees. However, studies in Nova Scotia indicated that

the related exotic species *Tetropium fuscum*, the brown spruce longhorn beetle, also considered as a secondary pest in its home range, can kill apparently healthy red spruce. The black spruce beetle is considered a high risk organism because of its reproductive and dispersal potentials in North American forests.

If the beetle establishes in Michigan, it may lead to undesirable economic consequences such as restricted movements and exports of solid wood products via quarantine, reduced marketability of lumber and reduced sales of coniferous nursery plants. The environmental impacts of the beetle invasion may include loss of biodiversity (e.g., trees killed or weakened by the beetle infestation or infested trees destroyed in eradication efforts), and increased risk of wildfires when more trees die.

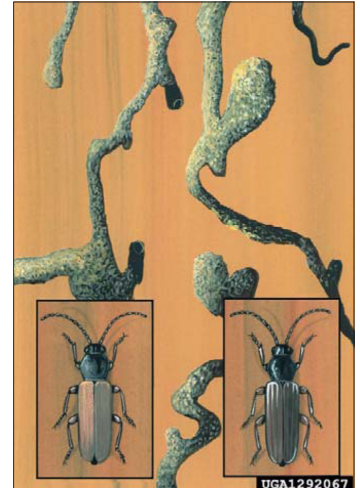
Likely pathways of entry in Michigan

Shipments of solid wood packing material, solid wood products, logs, and lumber from Europe and Asia.

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).



Larval entrance holes
(Photo: S. Kinelski, Bugwood.org)



Black spruce beetle, *Tetropium castaneum* (right), and brown spruce longhorn beetle, *Tetropium fuscum*. (Image: R. Dzwonkowski, Bugwood.org)

References

Dobesberger, E. J. 2005. Pest reports EXFOR Database: *Tetropium castaneum*. (<http://spfnic.fs.fed.us/exfor/data/pestreports.cfm?pestidval=123&langdisplay=english>)
Department of Entomology, University of Georgia. 2005. Black spruce long-horn beetle—*Tetropium castaneum* (L.) and brown spruce long-horn beetle—*Tetropium fuscum* fabr. (<http://www.forestpests.org/poland/blackspruce.html>)
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)

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