



Douglas-fir Pole and Engraver Beetles

Forest Health Fact Sheet

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Douglas-fir pole beetle (*Pseudohylesinus nebulosus*) and Douglas-fir engraver beetle (*Scolytus unispinosus*, - also sometimes associated with another engraver *S. monticolae*) attack small-diameter (up to 12" dbh during droughts) and thin-barked portions of Douglas-fir. These bark beetles are secondary to other stressors including primary pests such as the Douglas-fir beetle. They are often active during drought periods, often in combination with cankers.

Douglas-fir pole beetle (left) and Douglas-fir engraver beetle (right)

Hosts

- Major: <6" diameter Douglas-fir (up to 12" if drought-stressed)

Both Douglas-fir pole beetle and Douglas-fir engraver* beetle are distributed across most of the range of Douglas-fir.

*Douglas-fir engraver beetle is distinct from a related, although potentially more damaging, species that attacks true fir - the fir engraver (*Scolytus ventralis*).

Biology

Adult Douglas-fir pole beetles initiate attack flights as early as March and Douglas-fir engraver beetles begin closer to June. Depending on location and conditions, each species may have one to two generations per year.

Douglas-fir pole beetle adults are 2.5-3mm long, have a round posterior and appear dull due to the dense covering of scales. Douglas-fir engraver beetle adults are <3mm long and have a



Exit holes

Christine Buhl, ODF



Galleries created by Douglas-fir pole beetle (left) and Douglas-fir engraver beetle (right, arrow shows notch)

Karen Ripley, USFS; Wayne Brewer, Auburn, Bugwood.org

“sawed-off” ventral posterior. Each construct similar, 1-3” long galleries but with slight differences. Namely, the gallery of Douglas-fir engraver beetle scores the wood whereas the gallery of Douglas-fir pole beetle does not. The gallery of Douglas-fir engraver beetle may also have an enlarged notch at one end. The gallery of Douglas-fir pole beetle has a nuptial chamber at its center and larval galleries extending away from each half of the main branch of the nuptial chamber. Douglas-fir pole beetle adults overwinter in niches cut into the bark. Douglas-fir engraver beetles overwinter as larvae.

Damage

These beetles cause mortality in smaller trees and top-kill or branch-kill in larger trees. They also commonly attack small diameter and thin-barked portions of logging slash. They are often associated with Douglas-fir beetle and may attack larger trees that are already stressed by this fellow bark beetle. Douglas-fir beetles differ from the pole and engraver beetles in that they attack larger diameter (>10" dbh) Douglas-fir, create longer (5-10") galleries and larger (diameter of a grain of rice) exit holes.



Steve Munson, USFS, Bugwood.org

Mortality attributed to an outbreak of Douglas-fir pole beetle

Trees that are weakened by drought, defoliation, blowdown, root disease or fire scorch are susceptible to these beetles. Under drought conditions, they have been known to attack and kill Douglas-fir as large as 12" in diameter. Both beetles may also attack slash but populations are not likely to build up enough to cause outbreaks in surrounding standings trees.

Management

Silvicultural

Because Douglas-fir pole beetle and Douglas-fir engraver beetle are secondary insects associated with trees under stress, enhancing tree/stand quality will help to prevent attacks. The best management approach is to promote stand vigor by thinning, managing root diseases and promptly removing stressed or less vigorous trees.

Management

- Promote Douglas-fir stand vigor by thinning dense stands, removing stressed or less vigorous trees and managing root diseases

Douglas-fir pole beetle and Douglas-fir engraver beetle are secondary pests that are not prone to outbreak, and therefore do not typically require intensive silvicultural management. However, strategies that promote vigor or prevent drought stress in Douglas-fir stands are good practice to improve resilience against these and other insect pests.



Beth Willhite, USFS, Bugwood.org

Topkill following Douglas-fir pole beetle and/or Douglas-fir engraver beetle attack

More information:

Oregon Dept. of Forestry, Forest Health
<http://tinyurl.com/odf-foresthealth>
2600 State St. Bldg. D, Salem, OR 97310
503-945-7200

Other references:

USFS Forest Health Protection
www.fs.usda.gov/goto/fhp/fidls

OSU Forestry Extension
<http://extensionweb.forestry.oregonstate.edu/>