



Pest Alert: The Granulate Ambrosia Beetle



Adult *Xylosandrus crassiusculus*

Introduction:

The granulate or Asian ambrosia beetle (*Xylosandrus crassiusculus* (Motschulsky), Coleoptera: Scolytidae) is originally from Africa and southeast Asia. In the United States, it is found in Hawaii, Delaware, Maryland, Ohio, and it is widely established in the Southeast. The Oregon Department of Agriculture has been surveying for exotic wood boring insects since 1997. The granulate ambrosia beetle (GAB) has only been found in The Dalles. This beetle is of particular concern because unlike most ambrosia beetles, it is known to attack apparently healthy plants.

GAB is reported to attack over 200 species of plants in 41 families, although it prefers hardwoods. Some hosts of concern to Oregon include alder, apple, cherry, cottonwood, grape, oak, peach, pine, plum, poplar, and willow.

It poses a threat to:

Nursery stock:

GAB attacks seedling and small diameter broadleaved trees and shrubs in nurseries, causing girdling, stunting, and death. It can attack and kill larger trees, particularly if they are stressed. It has been reported to attack nursery stock in Florida, Maryland, North Carolina, Ohio,

Tennessee, and Texas. Species attacked include elm, magnolia, oak, redbud, and woody ornamental fruit and nut trees.

Orchards:

GAB attacks many important orchard species, including apples, cherries, grapes, peaches, pecans, persimmons, and plums. It is becoming a major pest of chestnuts in Tennessee.

Hardwood trees intended for lumber:

GAB attacks recently cut trees and raw lumber. The value of logs and lumber can be significantly reduced because of the beetle's tunnels and subsequent staining by its symbiotic fungus.

The environment:

GAB has not previously been established in the Pacific Northwest. It is difficult to predict what effect an exotic species will have in a new area. GAB is known to attack trees in the same genera as some Oregon riparian hardwoods, such as alders, cottonwoods, oaks, and willows. Whether it would cause significant watershed forest damage is unknown. It is also possible that some native woody plants may prove especially vulnerable to attack by GAB.

How it gets here:

Infested woody nursery stock, raw wood products (including rail ties and lumber), crating and packing material, firewood, and raw logs are all means by which GAB can be brought into Oregon. For example, raw rail ties cut in the Southeast can be infested as they await shipment. Once GAB has infested a host or wood, it is in a protected environment allowing it to survive shipment.

Signs of infestation:

- Apparently healthy hosts may be attacked.
- Entrance holes are approximately 2 mm in diameter and round (Fig. 1). Long toothpick-like strings of compacted boring dust may be found emerging from these holes (Fig. 2). Unfortunately, other wood boring insects in Oregon cause similar damage.
- Hosts with a diameter of 3 inches or less are preferred, but injured or stressed larger trees can be attacked. Newly planted seedlings are usually attacked at the root collar and the resulting girdling can stunt or kill the tree. Newly transplanted trees are especially vulnerable.
- Adult beetles are small, stout, cylindrical, reddish brown, and about 2-3 mm in length. Adults are unlikely to be seen and can only be identified by a trained entomologist.

Life cycle:

Adults and larvae feed on a symbiotic fungus (“ambrosia”) grown on wood tissue, not on the wood itself. Adults can be present from May through October, although specimens have been observed as early as April and as late as November in Oregon. Females are the only sex to fly and leave the brood galleries. Males are flightless and remain inside. Females overwinter in galleries or in leaf litter near the base of trees. When conditions are right in the spring, they emerge and attack hosts. Females bore a tunnel with a brood chamber and one or more branches into the sapwood and sometimes the heartwood. Eggs are laid in the brood chamber, and larvae hatch and feed on the symbiotic fungus growing on the gallery walls. There may be up to 100

larvae per gallery and several generations per year, climate permitting.

Other Pests Introduced by this Pathway:

During the course of the ODA’s trapping program, other exotic ambrosia beetles have been found arriving in The Dalles by the same pathways as GAB. These include three potential pests to the nursery, orchard, and hardwood timber industries: the apple wood stainer (*Monarthrum mali*), the hardwood platypus (*Euplatypus compositus*), and the oak platypus (*Oxoplatypus quadridentatus*). Other potentially injurious wood boring beetles foreign to Oregon have also been detected.

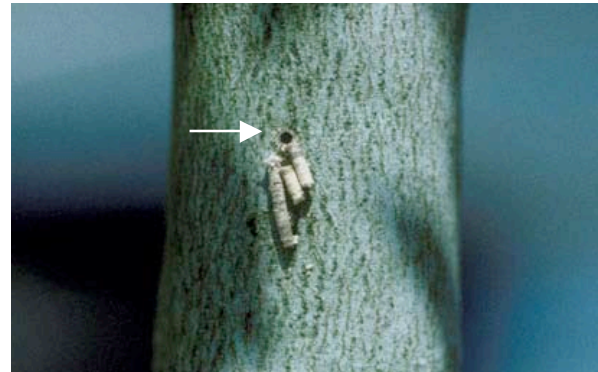


Figure 1. Entrance hole. By G.K. Douce. The University of Georgia, www.forestryimages.org



Figure 2. Toothpick like boring-dust string. By G.K. Douce, The University of Georgia, www.forestryimages.org

If you see suspected GAB symptoms please contact ODA. Thank you for your cooperation.

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