

EB1814



A KEY TO IDENTIFICATION  
OF PACIFIC NORTHWEST  
WOOD-DESTROYING  
PESTS BASED ON  
WOOD DAMAGE

By **Art Antonelli**, Ph.D., Washington State University Extension entomologist,  
WSU Puyallup Research and Extension Center; **Terry Whitworth**, Ph.D.,  
Whitworth Pest Solutions, Puyallup; and **Dan Suomi**, Ph.D.,  
Pest Control Operator Specialist, WSDA, Olympia

***Use pesticides with care.*** Apply them only to plants, animals, or sites listed on the label. When mixing and applying pesticides, follow all label precautions to protect yourself and others around you. It is a violation of the law to disregard label directions. If pesticides are spilled on skin or clothing, remove clothing and wash skin thoroughly. Store pesticides in their original containers and keep them out of the reach of children, pets, and livestock.

College of Agriculture and Home Economics

# A KEY TO IDENTIFICATION OF PACIFIC NORTHWEST WOOD-DESTROYING PESTS BASED ON WOOD DAMAGE

BY ART ANTONELLI, TERRY WHITWORTH, AND DAN SUOMI

This key addresses only symptoms (damage) and signs (such as excrement or frass) of the pests, not the pests themselves. References at the end of this publication provide keys, pictures, and biologies of the pests causing damage.

Don't go directly to the pictures to identify your problem. Misinterpreting what you see can be misleading and can suggest the wrong pest. *Use the key*, then the pictures as they occur in the key. The key is based on paired statements, which describe different possibilities. Follow the statement that best fits your observation. If it fits, it will either identify the causal pest, or it will send you to another numbered set of statements.

When examining the wood damage you may conclude a single pest is responsible. In some instances, *mixed infestations* exist. Don't jump to conclusions. There may be more than one pest problem present, and one may mask the other. This underscores the *need for thorough inspections*.

This key to the identification of wood-destroying pests of the Pacific Northwest (PNW) has been adapted to fit the pests of our region from the Pest Control Operators of California publication, *Wood Destroying Organisms*, by K.R. Hobbs, California State Polytechnic College.

1. Excavations (galleries, chambers, exit holes, tunnels) visible in wood. .... 2

No galleries, chambers, exit holes, or tunnels, visible in wood; lengthwise or right angle cracks in wood; reduced weight; wood may crumble to powder when compressed.

**(Fig. 1). Wood Decay Fungi**

2. Excavations contain pellets (excrement) of distinct shape and size, (magnification may be needed to identify pellets) ..... 3

Excavations do not contain pellets. .... 8

3. Pellets are six-sided and grooved with longitudinal ridges. .... 4

Pellets vary in size or shape, do not have ridges. .... 5

4. Pellets are  $\frac{1}{32}$  inch long; damaged wood appears dry (occasional import to the Pacific Northwest)

**(Fig 2b-bottom). Drywood Termite**

Pellets are  $\frac{1}{16}$ \* inch long; damaged wood is or has been wet (common in Pacific Northwest)

**(Fig. 2a-damage and Fig. 2b-top). Dampwood Termite**

5. Small exit “shot” holes in wood ( $\frac{1}{32}$ – $\frac{3}{32}$  inch); wood often crumbly and full of powdery microscopic pellets **(Fig. 3)**. .... 6

Larger exit holes ( $\frac{5}{32}$ – $\frac{1}{4}$  inch); tunnels packed with droppings, fibrous wood shavings often present. .... 7

6. Pellets granular (gritty); usually in softwoods (Douglas-fir, etc.) which have been damp; very common west of the Cascade Mountains.

**(Fig. 4a-pellets-right; Fig. 4b-exit holes; Fig. 4c-anobiid frass expelled from hole). Anobiid Beetles**

Pellets indistinct powdery or talclike (like flour); in dry hardwoods (oak, etc. or bamboo)

**(Fig. 4a-pellets-left; Fig. 3-exit holes; Fig. 4d-damage). Lyctid Beetles**

7. Tunnels in wood flattened; 3 times as wide as high; oval exit holes; concentric arc pattern present in gallery.

**(Fig. 5a and b). Buprestid (flat-headed) Borers**

Tunnels in wood no more than twice as wide as high; exit holes more or less circular; galleries similar to buprestids, but lack concentric patterns.

**Cerambycid (round-headed) Borers**

8. Excavations lined with white calcareous (calcium) materials found only in wood that spent time in salt water.

**(Fig. 9). Teredo or Shipworm**

---

\* When wood is very wet, dampwood termite pellets may be clumped and indistinct and may lose their normal shape.

Excavations not lined with white calcareous material; wood has not spent time in salt water. .... 9

9. Excavations larger (about 1/4 inch), very smooth and clean. (Fig. 6). Carpenter Ants

Excavations smaller (about 1/8 inch) containing masses of soil particles or fragments of sawdust in rotted wood..... 10

10. Excavations usually in sound wood; scale-like speckling in galleries; no sawdust present; mud tubes on wood. (Figs. 7 a, b, and c). Subterranean Termites

Excavations in wet, rotted wood; no scale-like speckling in galleries; dark discolored sawdust, sometimes used to form protective tubes. (Figs. 8 a, b, and c). Moisture Ants



Fig. 1. Wood decay fungi in a support beam damaged by rain leakage.



Fig. 2a. Damage and fecal pellets of dampwood termites.



The following list of references will provide most of what you need to know about wood destroying organisms in the Pacific Northwest, their identification, biology and management:

*Pest Management Study Manual for Pest Control Operators.* WSU-MISC0096. 154pp.  
*Termites: Biology, Prevention, and Control.* WSU-EB0787. 8pp.  
*The Golden Buprestid—A Wood Boring Beetle.* OSU-EC713. 4pp.  
*Preventing and Controlling Powderpost Beetles in and Around Homes.* PNW326. 3pp.  
*Moisture Ants.* WSU-EB1382. 4pp.  
*Carpenter Ants: Their Biology and Control.* WSU-EB0818. 6pp.  
*Anobiid Beetles in Structures.* WSU-EB1577. 3pp.



Fig. 2b.  
Fecal pellets of dampwood termites—top;  
drywood termites—bottom. Standard 1<sup>1</sup>/<sub>4</sub>-  
inch-long paper clip shown for scale.



Fig. 3.  
Shot holes in wood. (Lyctid or  
powderpost beetle exit holes.)



Fig. 4a.  
Fecal pellets (frass) of lyctid beetles—left;  
fecal pellets of anobiid beetles—right.



Fig. 4b.  
Anobiid or deathwatch beetle exit holes.



Fig. 4c.  
Anobiid frass expelled from hole.



Fig. 4d.  
Lyctid beetle damage.



Fig. 5a.  
Buprestid beetle exit hole.



Fig. 5b.  
Buprestid beetle larval mines.



Fig. 6.  
Carpenter ant galleries (note sawdust fragments in lower right quadrant).



Fig. 7a.  
Subterranean termite "scaling."



Fig. 7b.  
Subterranean termite damage.



7c.  
Subterranean termite mud tubes.



Fig. 8a.  
Moisture ant damage.



Fig. 8b.  
Moisture ant galleries made from  
damaged pressboard.



Fig. 8c.  
Moisture ant colony on a mudsill  
in crawl space.



Fig. 9.  
Teredo or shipworm damage.



Copyright 2001 Washington State University

WSU Extension bulletins contain material written and produced for public distribution. You may reprint written material, provided you do not use it to endorse a commercial product. Alternate formats of our educational materials are available upon request for persons with disabilities. Please contact the Information Department, College of Agriculture and Home Economics, Washington State University for more information.

You may order copies of this and other publications from the WSU Bulletin office, 1-800-723-1763, or online <http://pubs.wsu.edu>

Issued by Washington State University Cooperative Extension and the U.S. Department of Agriculture in furtherance of the Acts of May 8 and June 30, 1914. Cooperative Extension programs and policies are consistent with federal and state laws and regulations on nondiscrimination regarding race, sex, religion, age, color, creed, national or ethnic origin; physical, mental or sensory disability; marital status, sexual orientation, and status as a Vietnam-era or disabled veteran. Evidence of noncompliance may be reported through your local Cooperative Extension office. Trade names have been used to simplify information; no endorsement is intended. Published April 1996. Revised September 2003. Subject codes 352, 670. G. EB1814