Ambrosia beetles are chronic pests in stored conifer and hardwood logs; at times reducing the market value as much as 50 percent.

Beetles in the genera Platypus, Gnathotrichus and Xyleborus cause similar damage but are not as economically important as Trypodendron, especially T. lineatum.

Boring holes in stored logs and fresh lumber

Four species of Trypodendron occur in the West along with species in the genera Platypus, Gnathotrichus and Xyleborus.

They cause economic damage in true firs, spruce, Douglas-fir, and hemlock. Larch and pines are also attacked. Some breed in aspen, poplar, birch, and alder.

Populations build up in wind throw, fire-killed trees, logging slash, trees killed by other beetles, and logs.

Their galleries within the sapwood cause defect in logs stored for long periods and may reduce market value as much as 50 percent. Some species extend galleries into the heartwood, and freshly cut lumber may be attacked before it has dried. Damage is not usually sufficient to cause structural weakening of the wood.

Management

- Time harvest to avoid Trypodendron flight periods.
- Process logs promptly after harvest.
- Avoid moving infested logs to storage areas.
- Use water misting to protect log decks from attack.
- Use low-value logs such as pulp logs to trap out beetles.
- Use pheromone traps around storage facilities to reduce populations.
Life History

The following is for T. lineatum (Oliver) which is the most damaging ambrosia beetle in western conifers: Adults hibernate in the duff and start emerging in the spring, after most of the snow has melted, when temperatures reach 16° C (above 60° F). Attacks can occur from May until August.

Females bore through the bark and straight into the wood and construct compound galleries. They cut niches in series above and below these tunnels to lay eggs. Larvae develop in these cradles for 6 to 8 weeks, then pupate.

New adults emerge from June into September and go into hibernation in the forest litter. There is only one generation a year, but re-emergence of some adults in late summer could result in a second brood.

Alternatives for Control

A variety of procedures can be employed to minimize infestation and decrease damage in infested logs. A combination of methods used congruently are likely to produce the best results.

Nijholt (1978) recommended the following procedures to decrease damage:

At the Logging Site——
- Avoid having susceptible logs available to beetles.
- Utilize logs as soon as possible after felling. "Hot logging".
- Avoid leaving fall- and winter-cut logs until the spring flight period.
- If any logs have to be left in woods during attack period, leave the pulpwood.
- Do not transport infested logs to dry land storage facilities during spring and summer. This will increase the resident beetle population there.
- Low-grade logs can be used as trap logs to help reduce populations.

In the Dry Land Storage Areas—
- Avoid conditions that will increase populations:
  - Reduce spring and summer log inventories.
  - Avoid storage of fall- and winter-felled logs.
  - Do not store freshly infested logs that brood can emerge from and over-winter in nearby forest.
  - Water misting can completely protect log decks from attacks in dry land operations.
  - Dispose of debris. Beetles can build up in it.

In addition to Nijholt’s recommendations, timing of harvests and use of pheromones for direct trapping can protect logs and reduce populations.
Timing of harvest—
Logs cut in autumn and early winter are most susceptible to, attack by *Trypodendron* in the spring. Logs cut by February through May are not too attractive to *Trypodendron* but can be infested by other genera, mainly *Gnathotrichus*.

Trapping out—
Trapping of adult beetles at log storage sites (typically mill yards) using pheromone-baited traps deployed every 100 feet around decks is effective. Traps have to be serviced at least weekly to empty the catch basin.

Recognizing Ambrosia Beetle Damage

Entrance holes (pin holes) are marked by piles of fine, granular, white boring dust in bark crevices. The main entrance gallery penetrates sapwood from 2.6 to 5 cm before branching. Tunnels branch in a horizontal plane and cut across grain of the wood. Holes and galleries are surrounded by a dark brown or black fungus stain. Adult *Trypodendron* are stubby, 3 to 4.5 mm long, and are generally shiny and dark brown to black.

Other genera have different body shapes, gallery dimensions, gallery patterns (see drawing), life cycles, and feed on different fungus species.

Other Reading


Forest Health Protection and State Forestry Organizations

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