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Zimmerman Pine Moth

White, tan, or rust colored resin flowing on the trunks of Austrian, Scots and red pines could indicate an infestation of Zimmerman pine moth (ZPM) caterpillars. Large numbers of these small caterpillars can bore into the trunks of pines, resulting in weakened trees that are susceptible to wind damage. Heavy infestations also impart an unsightly appearance to the trunk and act as a source of plant stress. One or two boring points on an average sized tree is little cause for concern. Heavier infestations, or attacks against small or key landscape trees should be treated through a Total Tree Care approach. This would include cultural, natural and chemical procedures.

Life Cycle

An understanding of the ZPM life cycle is critical for proper management. The insect overwinters as a tiny caterpillar in a silken cocoon-like structure located under bark scales. In early spring, the small caterpillars first begin to feed on the bark. Later, they will tunnel into lateral or terminal shoots or directly into the main trunk. In late spring or early summer, caterpillars that may have been feeding on lateral shoots move to the main stem and bore into the trunk, usually in the whorl area.

Resin, flowing from the insect tunnels or pushed out by the caterpillars, accumulates at the mouth of the tunnels on the trunk and scaffold branches. Fresh resin flows will be white to tan, have the consistency of lard, and have a

shiny appearance. Resin flows from previous years will be yellow to gray, but will be hard and crystallized and have a dull appearance. Resin flows can persist on trunks for several years. It is important to be able to recognize active infestation sites and not be fooled by older resin flows. The caterpillars remain inside the main trunk until they complete development. In mid summer, the caterpillars pupate either inside the external resin flows or within their tunnels. The adults emerge as small, gray/brown moths with banded wings. Peak emergence usually occurs about mid to late August. The moths fly at night and are rarely seen.

After mating, the females lay their eggs on the trunk underneath bark scales. After emerging from the eggs, the tiny caterpillars search for sites in which to overwinter, thus beginning a new cycle.

Management

Maintaining tree health is always an important part of any pest management program. Proper mulching, watering, pruning, and SoilCareSM practices will help a tree both tolerate and recover from ZPM infestations.

Where possible and practical, heavily infested trees should be removed from the landscape. Such “brood trees” are often an eyesore and will continue to attract and produce ZPM adults that may infest nearby trees. Although such trees can be chemically treated, spraying does not ensure



(left to right)

Left: The Zimmerman Pine Moth; Center and Right: resin flows caused by the burrowing caterpillars leaves an unsightly appearance and build up.

Left photo credit:
Whitney Cranshaw, Colorado
State University, Bugwood.org

that all new infestations will be prevented. Brood trees should be removed before the adult moths emerge in mid to late August.

When warranted, plant protectants can be used to reduce ZPM numbers to tolerable levels. Treatments must be timed to coincide with the two vulnerable time periods in the pest's life cycle. The first period is during the early spring, usually mid to late April, just as the overwintering caterpillars are becoming active. The second period is during the time when the female moth is laying eggs and the young caterpillars are searching for overwintering sites. This begins around mid August. The early season treatments appear to be more effective than late season treatments, although both may be employed for maximum impact. The entire trunk and scaffold branch bases should be treated for optimum pest reduction.

The plant protectant used should have a long residual so that it remains active on the bark for as long a period as possible. ZPM flight activity is dependent on the weather and may extend for several weeks or more.

Treatments should not be applied when the caterpillars are boring within the main trunk. Sprays will be ineffective during this period and will be a waste of time and money. Parasites of the ZPM do exist, but their ability to regulate pest populations has not been determined. Reduced chemical applications would help conserve natural enemies. Where infestations are high, a combination of cultural controls, sanitation and chemical procedures will be the most efficient.

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- Tree Risk Assessment
- Tree Protection during Construction
- Mulching
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If you have any additional questions or concerns, please do not hesitate to contact your local office for further details.



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