

SAWYER BEETLES

By Douglas C. Allen

The last issue of *Forest Owner* contained an interesting article about white pine by Norm Richards. His discussion made me think about our pine resources in the northeast - especially the anticipated increase in eastern white pine's value as major western sources of softwood lumber are withdrawn from commercial production. According to DEC forester Tom Martin, the average stumpage value of white pine statewide in January 1994 was \$80.00 per thousand board feet, and in some regions it reached \$150.00 per thousand. The average value of white pine has increased markedly during the past ten years.

In recent decades, intensive management of this species has created an ideal environment for two well known insect problems - white pine weevil and a pest of seedlings known as the pales (pail-ease) weevil. However, another serious deterrent to producing quality pine and spruce lumber nationwide is a small group of insects called sawyer beetles.

If a white pine stand initially escapes heavy regeneration mortality by seedling weevils and later suffers little defect and growth loss due to white pine weevil, the landowner has evaded two important problems. However, there is one more bullet to dodge! The profit margin associated with high quality lumber can evaporate in a few weeks if sawyer beetles are allowed to infest recently cut logs.



Fig. 2. Spotted pine sawyer. Note the male's long antennae. Arrow indicates characteristic white spot.

HABITS

Adults (Figs. 1 and 2) deposit eggs in holes chewed in the bark. The grub or larva (Fig. 3) feeds beneath the bark, loosening it and scaring the surface of the sapwood (Fig. 4). Sawyer beetles in the northeast ordinarily require two years to complete development from egg to adult.

The immature or larval stage, often referred to as a "grub," damages pine and spruce logs by excavating overwintering tunnels in the wood. These U-shaped galleries are 3/8" to 1/2" in diameter and penetrate several inches into a log. They pro-

vide infection courts for various wood staining and decay fungi and allow water to penetrate the wood, which accelerates rot.

ECOLOGICAL ROLE

Sawyer beetles are not very aggressive. Normally their activity is restricted to recently killed or severely weakened standing trees. In this capacity, they are important to the process of wood decomposition and nutrient cycling.

ECONOMIC SIGNIFICANCE

The tunnels or "worm holes" that appear in dimension lumber cut from infested pine logs can cause a 30% to 40% degrade, depending on the size of the log, level of infestation and desired end product. Large straight red pines that otherwise may have potentially high value for power line poles are unacceptable if they contain even a few sawyer beetle tunnels.

APPEARANCE

The two most common species in our region are the white pine sawyer and the spotted pine sawyer. Adults of the former are 1 1/2 to 2 1/2 inches long and mottled grey with black and white patches on the back (Fig. 1). This is the largest species of sawyer beetle in our region. Spotted pine sawyers are smaller, 3/4 of an inch to 1



Fig. 1. White pine sawyer beetle (black marks on stick are 1" apart).

(Cont'd)



Fig. 3. Sawyer beetle larva or grub.

inch long, and shiny black with a white dot on the back immediately behind the neck (Fig. 2). Like all members of this beetle family, both species have very long antennae. These paired sensory organs or “feelers” are attached to the head. The antennae of male sawyer beetles are often half again as long as the body.

The worm-like larva is white, segmented and fleshy (Fig. 3). It is 2 to 3 inches long when full grown and lacks legs and a distinct head, the latter being reduced to two large mandibles. In the process of feeding and excavating the overwintering tunnel, larvae often make a loud squeaking or scraping noise as the mandibles shear off excelsior-like strips of wood. Many years ago someone with a vivid imagination likened this sound to that of a cross cut saw in action, hence, the common name sawyer beetle.

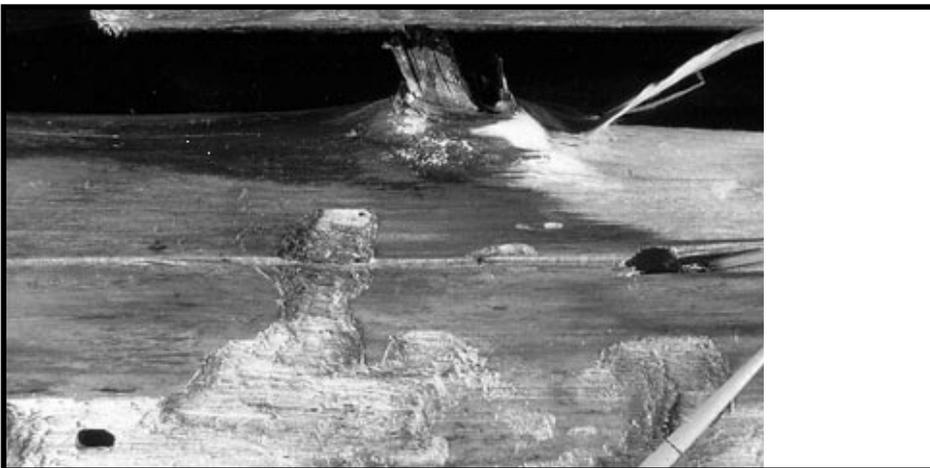


Fig. 4. Larval feeding damage on surface of sapwood. Arrow indicates entrance hole to overwintering tunnel.

SIGNS OF AN INFESTATION

Adults are often visible on freshly cut logs in early summer, especially where logs are exposed to full sunlight. They scurry over the bark looking for mates and depositing eggs. The most conspicuous



Fig. 5. Telltale chip piles beneath infested log.

evidence of the insect’s presence, however, appears after larvae begin to feed beneath the bark and tunnel into the sapwood. Larvae produce wood chips that accumulate beneath loosened bark. Eventually chips are pushed to the outside through cracks in the bark, and they accumulate in obvious piles beneath an infested log (Fig. 5).

PREVENTION

The most effective way to eliminate sawyer beetle damage is to harvest during September to early June and complete processing before late June or mid-July. However, harvesting can be done at any time during the summer with little danger of beetle damage if logs are processed within a few weeks.

Large operators who must maintain inventories can make stored logs unsuitable or inaccessible to beetles by storing them in a water pond, by keeping them wet with a continuous water spray, or by debarking

prior to storage. Both excessive moisture and bark removal destroy the insect’s habitat. If large quantities of logs must be stored and bark removal or water treatment is not feasible, damage can be minimized if log piles are high and compact. Under these conditions only the first two or three log layers will be attacked, because the interior (shaded) logs are not suitable for egg laying. ▲

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