NORTHERN HARDWOOD NOTES

Persistent Insect, Disease, And Climatic Problems

Managed old-growth northern hardwoods have few insect and disease problems Insect damage is only occasional and any major decay from diseases can be eliminated in three cyclic cuts.

Surprisingly, second-growth hardwoods-especially even-age stands-are affected more in the long term by insects, diseases, and climate. Fortunately, these problems can be minimized in even-aged stands by proper thinning and encouraging diverse species.

Insects

Many insects can occasionally become epidemic and cause heavy losses, but a chronic pest is the bud miner in opposite-branched sugar maple. It attacks the terminal bud and can cause forking 'throughout the life of the tree. Bud miners are continuously present. In stands under even-age management, they affect every tree in or above the main canopy. The forks that miners cause shorten merchantable height and reduce vigor, or provide major entry points for decay and discoloration if the fork splits off. Under proper management, side competition corrects forking over a period of years (see Note 4.12 fork Occurrence *and Correction).*

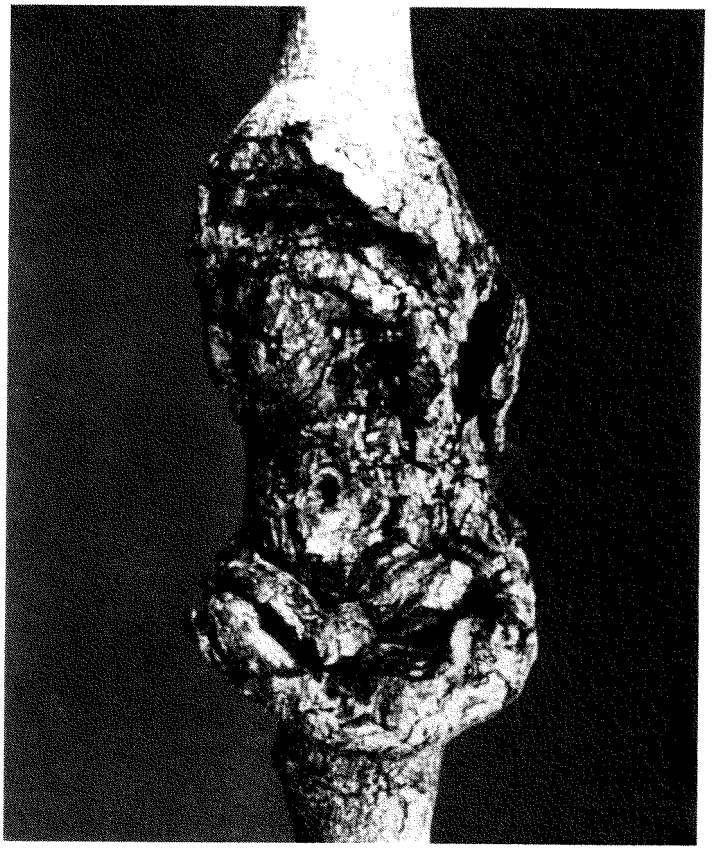
Diseases

Nectria canker (on all hardwoods) and Eutypella canker (only on maples) are the most serious diseases, especially in even-aged stands. Nectria is more common under the shelterwood system than under other even-age management methods, and Eutypella may be too. In the oldest shelterwood cuttings, nearly all the large trees have serious cankers and many are broken or already dead. Changing the shape of the cut, removing cankered trees from the overstory before the regeneration cut, and encouraging more species during regeneration may help.

Sapstreak disease hits trees whose roots have been damaged by logging in the spring and early summer. Particularly vulnerable are sawtimber-size trees. Restricting time of logging or using wheeled forwarders could keep this disease from becoming a bigger problem under all types of management (see Note 7.04, Sapstreak Disease in Sugar Maple).

Wood-rotting diseases are common in young hardwoods but usually have few long-term effects in managed stands if wounding is kept to a minimum and wounded trees are removed in subsequent thinnings. In some areas, 1- to 3-inch-long cracks form throughout the lower bole of sugar maple. Most heal in a short time but new ones continually develop. The cause of these "annual maple cankers" is unknown but appears to be associated with sharp temperature variations in the bolewood. To help prevent their formation, maintain the recommended stand density and thin periodically.

Nectria canker on a sugar maple. These cankers can vary considerably in appearance; old cankers on sugar maple are frequently almost circular with callous ridges.



Eutypella canker on a sugar maple sapling. These cankers seldom girdle the stem but the enlarged, distorted growth around the canker may structurally weaken the tree. A branch stub was probably the entry point for the fungus.

An old Eutypella canker on a mature sugar maple. Usually there is one canker per tree occurring 2 to 8 feet above the ground.

Climate

Winter sunscald, which leaves large open catfaces on the south and southwest from the snowline several feet up the bole, sometimes causes much cull on trees in certain topographic positions.

Hardest hit are 1- to 3-inch sugar maples in even-aged stands. To reduce losses try to encourage more trees of other species.

All-aged stands are seldom damaged because small trees are shaded by larger ones.

Frost or hard rains frequently destroy male flowers before pollination. Because of this, viable white ash seed crops occur only at long intervals. Management techniques must take sporadic seed crops into account.

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A four-foot-long winter sunscald on sugar maple. On bright days with snow cover, the inner bark is warmed enough to become active, and then is killed when temperatures fall sharply at night.

Thin-barked trees such as maple are most susceptible to winter sunscald, especially when they are young.