COMMON FOREST INSECTS

DEFOLIATORS

Defoliators eat the leaves of trees, their infestation sometimes reaching epidemic proportions. Presence of these insects can easily be detected by the loss of needles on conifers or the loss of leaves out of season on hardwoods. Resulting loss of the tree's food manufacturing ability causes a slowing of timber growth, and in the case of sugar maples, seriously affects sap production. Conifers can be quickly killed, or lose their beauty if intended as Christmas trees. Hardwoods, however, can usually withstand several years of defoliation without death. Fortunately, epidemics are usually cyclic and the insect boom will collapse through starvation or other natural checks and balances before the forest is irreversibly damaged.

CONIFERS

Jack pine budworm
: Jack pine in Lake States

Sawflies
: A widespread group of at least 22 species that affect spruces, firs, western larch, cedars, loblolly, shortleaf, jack, red, Scotch, pitch and lodgepole pines

Spruce budworm
: True firs (Abies), Douglas-fir, spruces

Tussock moth
: True firs, Douglas-fir, Blue spruce

Texas leafcutting ant
: Young planted pines, especially in Texas and Louisiana

Western hemlock looper
: The "inch worms," this one a killer of older western hemlocks

HARDWOODS

Elm spanworm
: Nearly all hardwoods, but ash, hickory and walnut are preferred

Forest tent caterpillar
: Most broad-leaved trees, especially aspens and the northern hardwoods

Gypsy moth
: Oaks, birches and aspen are most susceptible. White pines and eastern hemlocks also attacked

Leafminers
: Numerous hardwood species; lodgepole and white pines

BARK BEETLES AND OTHER BARK BORERS

This group of over 100 insect species is the most destructive in North America. It is estimated that approximately 60 percent of all tree growth loss is due to these burrowing pests. Bark beetles excavate egg galleries in fresh phloem, the inner bark which carries food from leaves to the roots of a tree. When the eggs hatch, hundreds of larvae eat their way from the main gallery, mining the inner bark in all directions. The pattern of their work is like a fingerprint for the species, and their collective eating nearly always spells doom for the tree. The first easily noticed sign of this is a reddening or fading appearance in the top of the tree, followed by complete browning. Less noticeable are patches of pitch seeping out where the insects first entered the trunk. These insects are usually only a problem in mature or

maturing trees beyond the sapling stage, but some species plague young plantations.

CONIFERS

California flathead borer
: Overmature ponderosa pine on West Coast

Douglas-fir beetle
: Douglas-fir and western larch

Mountain pine beetle
: Lodgepole and most other western pines; Engelmann spruce

Red turpentine beetle
: Pines; sometimes spruces, larches and firs

Southern pine beetle
: Shortleaf, loblolly and other pines and spruces in the Southeast

Spruce beetle
: Mature black spruce, Engelmann spruce

Western pine beetle
: Ponderosa, Coulter, sometimes lodgepole

Engraver beetles
: Pines throughout North America; true firs (Abies) and Douglas-fir in West

Hemlock borer
: Hemlocks

Northern pine weevil
: Southeast Canada to North Carolina in large areas of fresh stumps, including Christmas tree plantations

Pacific flatheaded borer
: Wide variety of trees on West Coast, including those newly planted

Pine root collar weevil
: Many species of pines, especially red pine on poorer sites and introduced pines

Zimmerman pine moth
: Causes damage and sometimes death in pine plantations, S. Canada & United States

HARDWOODS

Bronze birch borer
: Birches

Flatheaded apple tree borer
: Wide variety of deciduous trees in North America, including those newly planted

Sugar maple borer
: Sugar maple

Two-lined chestnut borer
: Once, chestnuts, now oak and sometimes beeches

WOOD BORERS

Wood borers go deeper than bark beetles, doing their damage in the sapwood and even the heartwood of a tree. But while some wood borers attack living trees, others drill into recently cut logs, lowering their value for lumber or pulp. Some even attack finished lumber. Often the tunnels have a secondary effect of providing an entry point and channels of spread for fungus (rot).

Although not true of all species of wood borers, telltale sign is often the sawdust and other wastes that accumulate outside holes in the trunk or limbs.

The best defenses against many members of this group are to keep trees healthy, vigorous and undamaged, and to sell or use cut trees quickly rather than letting them lie around. This is especially important in the South and in the summer.

CONIFERS

Fir tree borer
: Dead or dying true firs, Douglas-fir, spruces, hemlocks and larches in Western United States and Canada

Horn-tails
Logs in western coniferous forests
Southern pine sawyer
Damaged or freshly cut coniferous logs in Northeast
Western larch borer
Living western larch and hemlock, Rocky Mountains and Pacific Coast

HARDWOODS

Ambrosia beetles
Ruinous primarily of green lumber
Carpenter worm
Living locusts, oaks, elms and poplars in the United States and Southern Canada
Flatheaded apple tree borer
Also a phloem insect, but may drill deeper. Walnut hickory, poplar, willow, beech, oak, elm, hackberry and others in a weakened condition
Locust borer
Living black locust at all stages
Oak borer
One of the most damaging in high grade Southern hardwoods. (Woodpeckers are a major control!!)
Pitted ambrosia beetle
Various living hardwoods, especially young maples
Poplar and willow borers
Living poplars and willows throughout the US and Canada; often causes wind breakage

TERMINAL FEEDERS

Terminal feeders eat buds or roots. Some in this class also do their damage by girdling twigs. Their attacks are fatal only if repeated year after year, so their real damage is in the deformities caused as a tree overgrows its injured buds. This often slows growth as well. Root insects, mostly white grubs, some borers and root weevils, are problems only in seedlings and ornamental shrubs.

Entomologists suggest that many terminal insect problems could be avoided by more carefully matching planted species with the site conditions of their natural range.

CONIFERS

Douglas-fir twig weevil
Douglas-fir seedlings in Northwest, and in Christmas tree plantations
European pine shoot moth
Prefers red pine, but attacks other pines. Serious in plantations in southern New England, New York, and the Central states. Introduced, has spread to other moderate climate areas in the South and Northwest Coast.
Nantucket pine tip moth
Pines, especially loblolly, shortleaf and Virginia pine
Pales weevil
May be most important insect pest in young pine plantations in South. Fatal to seedlings in harvested areas.
Pine reproduction weevil
Ponderosa pine seedlings, especially in California plantations
Pitch pine tip moths
Pitch, shortleaf, loblolly and slash pines throughout East coast and west to Texas
Western tip moths
Primarily ponderosa pine
White pine weevil
Eastern white pine, Norway spruce, Sitka spruce, mostly in sapling stage. Scotch pine and Douglas-fir in Christmas tree plantation.

HARDWOODS

Twig borers
Deciduous trees throughout North America, but important mostly in ornamentals

SUCKING INSECTS

This group is named because its insects have sucking mouth parts and feed on plant fluids. A huge number of species are included, but few cause actual death to trees. Their main offense is robbing the tree of its food and water. This, of course, will eventually affect growth and health. They are also known to spread tree diseases, and sometimes the slits they make in branches weaken the branch enough that it dies or snaps off.

CONIFERS

Aphids
- Species of aphids, or plant lice, are everywhere. In large numbers, they can kill spruce, Douglas-fir and others. Also transmit disease.

Balsam woolly adelgid
- Serious introduced problem in true firs; New England, Maritime Provinces, Northwest coastal ranges.

Pine spittlebug
- All pines in East, especially injurious to Scotch.

Saratoga spittlebug
- Conifers throughout the United States, especially red and jack pine plantations in Lake States.

Scales
- Red pines, various Christmas tree species; junipers

Spruce gall adelgids
- Spruces, firs, Douglas-fir, larch, pines

HARDWOODS

Cicadas
- Periodically cause mechanical damage to twigs of young hardwoods

Lacebugs
- Hardwoods, especially yellow birch, basswood, maples, ironwoods, oaks, sycamores and willows

Scales
- Ash, maple, beech, and others

OTHER INSECTS

The importance of other insect pests depends on the degree to which they interfere or help with the landowner's objectives. For example, galls are made by a variety of wasps, flies, aphids and mites when they "sting" a twig. The swollen, cancer-like reaction provides shelter and food for the insect's young. Galls are usually not a serious problem unless they deform the main stem, or unless you happen to be a Christmas tree grower.

Then, of course, there are the beneficial insects. Bees and many others provide pollination service; lady beetles control aphids and scales; checkered beetles prey on bark beetles; butterflies entertain and inspire-and all help to stave off that awful year of the silent spring. Insects are an integral part of the woodlot and most of the time live out their lives unnoticed and unoffending. Getting to know them, to learn their ways and to keep them in balance with human goals, can be one of the more interesting challenges of owning a woodland.

MICHIGAN STATE UNIVERSITY EXTENSION

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