1997 Annual Northeastern Area
Forest Health Protection Insect and Disease Conditions Report

Prepared by USDA Forest Service, State and Private Forestry in cooperation with State Forestry Agencies in the Northeastern Area"

Insects: native

Aspen defoliator complex

Region 9/Northeastern Area: Michigan

Hosts: Aspen

No defoliation in Minnesota has occurred since 1995.

Aspen leafroller, *Pseudexentera oregonana*

Region 9/Northeastern Area: Maine

Hosts: Aspen

The complex of leafrollers that caused defoliation in Maine in 1996 did not reappear in 1997.

Balsam popular leafblotch miner, *Phylonorycter sp.*

Region 9/Northeastern Area: Minnesota

Hosts: Balsam poplar

The balsam poplar leafblotch miner which defoliated more than 5,000 acres in 1995 has been inactive since then. No damage was detected in 1996 or 1997.

Bruce spanworm, *Operophtera bruceata*

Region 9/Northeastern Area: Maine, New Hampshire, New York, Vermont

Hosts: Aspen, American beech, sugar maple

Defoliation activity continued to decline with only 750 acres reported in New York. No activity was reported in 1997 in Maine, New Hampshire, or Vermont.

Fall hemlock looper, *Lambdina fiscellaria*

Region 9/Northeastern Area: Maine, New Hampshire, New York

Hosts: Beech, eastern hemlock, sugar maple, yellow birch

About 20,000 acres were defoliated in 1997 in New York. When in outbreak status, other species besides the primary host, hemlock, are defoliated. In Maine and New Hampshire, no damage or significant populations were reported.

Greenstriped mapleworm, *Dryocampa rubicunda*

Region 9/Northeastern Area: Michigan, Wisconsin

Hosts: Red maple

Heavy, scattered defoliation due to greenstriped mapleworm occurred on over 5,000 acres in Sawyer and Washburn Counties in Wisconsin.

Gypsy moth, *Lymantria dispar*

Region 9/Northeastern Area: Delaware, Maine, Maryland, Massachusetts, Michigan, New Jersey, New York, Ohio, West Virginia, Wisconsin

Hosts: Apple, aspen, basswood, black walnut, northern red oak, pin oak, red oak, southern red oak, white oak

Gypsy moth defoliation continued to decline throughout the Region in 1997. Delaware reported light defoliation on 534 acres and Maine reported 100 acres. West Virginia reported the most dramatic decrease, down to only 473 acres from 70,726 in 1996. Massachusets reported a drop from approximately 7,000 acres in 1996 to only 114 acres in 1997. In Maryland, defoliation decreased from 11,332 to 676 acres. Michigan's decline was a little less dramatic, dropping from just under 5,000 acres in 1996 to 1,336 acres in 1997. After an increase in 1996, to approximately 50,000 acres, Ohio reported a decrease to just over 4,956 acres in 1997. New Jersey and New York both reported substantial decreases, from 27,755 to 1,910 acres and from 16,825 to 2,230 acres, respectively. Mortality caused by previous gypsy moth defoliation was reported in Massachusetts (400 acres), Ohio (2100 acres), and Michigan (9,000 acres).

Larch sawfly, *Pristiphora erichsonii*

Region 9/Northeastern Area: Maine

Hosts: Larch

Larch sawfly populations decreased noticeably in 1997, affecting about 710 acres in Maine. In 1996, about 5,000 acres were defoliated.

Oak leaftier, *Croesia semipurpurana*

Region 9/Northeastern Area: Pennsylvania, West Virginia

Hosts: Northern red oak

Aerial surveys in Pennsylvania detected 2,213 acres of moderate to heavy defoliation caused by oak leaftier in the Counties of Cameron, Dauphin, Forest, Potter, Schuylkill, and Waren. Also in Pennsylvania, 1,354 acres of defoliation were detected on the Allegheny National Forest. In 1964 and 1965, the oak leaftier caused defoliation on about 500,000 acres in Pennsylvania.

Oak skeletonizer, *Bucculatrix ainsliella*

Region 9/Northeastern Area: Missouri, Ohio, Pennsylvania

Hosts: Pin oak, shingle oak

Ohio and Pennsylvania reported isolated occurrences, while Missouri sustained nearly 58,000 acres of defoliation in 1997.

Scarlet oak sawfly, *Caliroa quercuscoccineae*

Region 9/Northeastern Area: Ohio, West Virginia

Hosts: Black oak, pin oak, red oak, scarlet oak, white oak

A total of 291,928 acres were reported to have scattered scarlet oak sawfly defoliation in 1997. This defoliation was split between southeastern Ohio and adjoining western West Virginia, with 174,197 and 117,731 acres reported respectively.

Willow sawfly, *Nematus ventralis*

Region 9/Northeastern Area: Michigan, Wisconsin

Host: Aspen

Scattered reports of aspen defoliation, including the willow sawfly and the aspen tortrix were reported on National Forests: Chequamegon (1,047 acres), Huron (503 acres), Ottawa (8,471 acres), and on Isle Royal (1,422 acres).

Insects: non-native

Asian longhorned beetle, *Anoplophora glabripennis*

Region 9/Northeastern Area: New York

Hosts: Birch, horse chestnut, Norway maple, red maple, silver maple

Removal of infested trees and surveys for Asian longhorned beetle continue in quarantined areas of New York. New York City Parks Department will be planting 400 trees in addition to the 255 street trees planted in 1997.

Balsam woolly adelgid, *Adelges piceae*

Region 9/Northeastern Area: West Virginia

Hosts: Balsam fir, fraser fir

Activity remains at relatively low levels. In West Virginia, 20 forest stands are monitored for indications of damage from balsam woolly adelgid.

Birch leafminer, *Fenusa pusilla*

Region 9/Northeastern Area: Massachusetts, Vermont

Hosts: Birch, gray birch, paper birch

Massachusetts reported 130 acres of discoloration in gray birch due to birch leafminer. There were 4,500 acres of defoliation in Vermont, mostly in the Green Mountains.

Common European pine shoot beetle, *Tomicus piniperda*

Region 9/Northeastern Area: Illinois, Indiana, Maryland, Michigan, New York, Ohio, Pennsylvania, West Virginia

Hosts: Scotch pine, white pine

Common European pine shoot beetle was detected in 2 new counties throughout the Area. Illinois reported Putnam and Bureau Counties as newly infested in 1997.

Pine shoot moth, *Rhyacionia buoliana*

Region 9/Northeastern Area: Massachusetts

Hosts: Jack pine

The pine shoot moth defoliated 5,375 acres on Cape Cod, Massachusetts. In addition to the pine shoot moth, salt spray damaged trees in the same area.

Spruce beetle, *Dendroctonus rufipennis*

Region 9/Northeastern Area: Maine

Hosts: Red spruce, white spruce

The outbreak of spruce beetle that began in 1994 on the coastal islands and along the central coastal areas of Maine continued. The outbreak caused another 30-50 percent mortalilty on 2,660 acres, and greater than 50 percent mortality on 450 acres. This acreage is an increase from the 2,160 acres mapped in 1996. Mortality occurred to aging trees over 15 inches in diameter growing on poor sites with shallow, rocky soils. The isolated nature of these trees and rapid decay following death severely limited salvage opportunities, although spruce on Isleboro, Butter, and Eagle Islands was salvaged in 1997.

Spruce gall adelgid, Adelges abietis

Region 9/Northeastern Area: Maine, New Hampshire, New York, Vermont

Hosts: Spruce

The spruce gall adelgid remained endemic throughout the range of spruce in the Northeast. It is a pest in nurseries, Christmas tree plantations, and on park and other ornamental trees.

Variable oakleaf caterpillar, *Heterocampa manteo*

Region 9/Northeastern Area: Maine, New Hampshire

Hosts: American beech, red oak

A small, 5-acre outbreak in New Hampshire caused 30 percent defoliation to overstory trees and 100 percent defoliation to understory beech. In Maine, populations of this insect continued to be low in 1997 and no defoliation was reported. An evaluation of stands sustaining defoliation from 1995-1997 showed no significant differences in current crown condition between defoliated and nondefoliated trees.

Periodical cicada, *Magicicada septendecim*

Region 9/Northeastern Area: Illinois, Iowa, New York

Hosts: Bur oak, cherry, elm, oaks, sassafras, serviceberry, white oak

The geographically shifting populations of the periodical cicada caused damaged foliage and shoots on 10,000 acres in Iowa in 1997. Some dieback from the 1996 infestation was reported in Illinois, and about 400 acres of defoliation were reported in New York.

Pine false webworm, Acantholyda erythracephala

Region 9/Northeastern Area: New York

Hosts: Eastern white pine, red pine, Scotch pine

The infestation in New York remained at a low level. Defoliation was reported on 5,400 acres and mortality on 400 acres of white pine plantation.

Pine needleminer, *Exoteleia pinifoliella*

Region 9/Northeastern Area: Massachusetts, New York

Hosts: Pitch pine

No activity was reported in 1997. A small amount of damage was reported in 1996 in both States.

Southern pine beetle, *Dendroctonus frontalis*

Region 9/Northeastern Area: Delaware, Maryland, West Virginia

Hosts: Loblolly pine

Aerial surveys in 1997 detected no damage in Maryland and Delaware. West Virginia, however, reported 11 trees infested in the eastern portion of the State.

Locust leafminer, *Odontota dorsalis*

Region 9/Northeastern Area: Illinois, Vermont, West Virginia

Hosts: Black locust

Illinois reported extensie foliage discoloration. As in 1996, a small amount of foliate discoloration was reported in Vermont. In West Virginia, there was moderate to heavy discoloration in the eastern Panhandle area, but only light to moderate in the rest of the State; a decline from last year.

Maple leafcutter, *Paraclemensia acerifollella*

Region 9/Northeastern Area: Maine, New Hampshire New York, Vermont

Hosts: Sugar maple

An estimated 200 acres of defoliation was detected in Maine. In New Hampshire, damage was more widespread in 1997 than previous years. Light to moderate damage was noted throughout the range of sugar maple. There were 120,000 acres of defoliation in New York, slightly lower than in 1996. Over 7,000 acres of defoliation and 2,500 acres of decline were reported in Vermont.

Native insect complex

Region 9/Northeastern Area: Pennsylvania

Hosts: Black cherry, maples, oaks

Populations have declined since 1995. No activity was reported in 1997.

Fall cankerworm, *Alsophila pometaria*

Region 9/Northeastern Area: Massachusetts, Pennsylvania

Hosts: Oaks, red maple, red oak

The defoliation that occurred in 1996 collapsed, as anticipated, in 1997. No additional defoliation was reported in Pennsylvania following a small outbreak that occurred in southeast Pennsylvania in 1996.

Forest tent caterpillar, *Malacosoma disstria*

Region 9/Northeastern Area: Illinois, Maryland, Minnesota, New Hampshire, Rhode Island, West Virginia

Hosts: Aspen, basswood, pin oak, sweetgum, other hardwoods

Small outbreaks totalling 1,364 acres were reported in 1997. The last large occurrence of forest tent caterpillar was in 1994.

Jack pine budworm, *Choristoneura pinus*

Region 9/Northeastern Area: Michigan, Minnesota, Wisconsin

Hosts: Jack pine

In 1997, more than 300,000 acres were defoliated throughout the Lake States Region. More than 120,000 acres were reported on State and private land in Michigan and Wisconsin, respectively. In addition, over 50,000 acres were defoliated on the Huron National Forest, over 4,000 acres on the Ottawa National Forest, and 3,300 acres on Chequamegan National Forest. Only 111 acres of defoliation occurred in Minnesota in 1997. Mortality from defoliation in previous years occurred on over 63,000 acres including over 33,000 acres of State and private land in Minnesota, 10,000 acres in Wisconsin, and 10,000 acres in Michigan. Over 9,400 acres of land on the Ottawa National Forest were affected.

Cherry scallop shell moth, *Hydria prunivorata*

Region 9/Northeastern Area: Michigan, New Hampshire, New York, Ohio, Vermont, West Virginia

Hosts: Beech, black cherry

Cherry scallop shell moth populations declined significantly in 1997. Defoliation occurred in West Virginia (1,370) acres), Michigan (596 acres), and Ohio (565 acres). No activity was reported in New Hampshire, New York, Pennsylvania, and Vermont.

Eastern spruce budworm, *Choristoneura fumiferana*

Region 9/Northeastern Area: Maine, Michigan, Minnesota, New Hampshire, New York, Vermont, Wisconsin

Hosts: Balsam fir, white spruce

Significant areas of defoliation occurred on State and private lands in Minnesota (256,928 acres), and on the Chippewa National Forest, Manistee National Forest, and to a lesser extent on the Hiawatha National Forest. The total defoliated area in 1997 for all ownership was 287,043 acres. Populations remain low in Maine, New York, and Vermont. No moths were caught in pheromone traps placed in Northern New Hampshire.

Hemlock woolly adelgid, *Adelges tsugae*

Region 9/Northeastern Area: Connecticut, Delaware, Illinois, Indiana, Maine, Maryland, Michigan, Missouri, New Hampshire, New Jersey, New York, Ohio, Rhode Island, Vermont, West Virginia, Wisconsin

Hosts: Eastern hemlock

The hemlock woolly adelgid infestation expanded to two new counties in West Virginia, and one in Pennsylvania. The range of the previous infestation extended from Connecticut to North Carolina, and to West Virginia. The most significant damage from hemlock woolly adelgid has been reported in New Jersey and New York. In New Jersey, the hemlock woolly adelgid can be found throughout the State.

Larch casebearer, *Coleophora laricella*

Region 9/Northeastern Area: New York

Hosts: Larch

The insect continues to be present in New York. Some discoloration was reported on about 200 acres.

Thrips

Region 9/Northeastern Area: Michigan, Wisconsin

Hosts: Basswood

Damage from previous outbreaks of basswood thrips caused some decline in basswood in Wisconsin and Michigan.

Diseases: native

Anthracnose

Region 9/Northeastern Area: Iowa, New Hampshire, Vermont

Hosts: Hardwoods, sycamore

There were 2,000 acres of discoloration of sycamore reported in Iowa. Anthracnose on sycamore was widespread and severe in New Hampshire. Vermont reported about 50 acres of defoliation on hardwoods.

Annosus root disease, *Heterobasidion annosum*

Region 9/Northeastern Area: Delaware, Maryland, Missouri

Hosts: Loblolly pine, shortleaf pine

Annosus root rot is a minor problem in the Northeastern Area. A few stands of shortleaf pine in Missouri were infected as well as a few stands of loblolly pine in Maryland and Delaware.

Armillaria root disease, *Armillaria* spp.

Region 9/Northeastern Area: Northeastern Area

Hosts: Hardwoods

A variety of hosts continued to be affected throughout the northeast by various biological species of Armillaria.

Eastern Dwarf Mistletoe, *Arceuthobium pusillum*

Region 9/Northeastern Area: Maine, Michigan, Minnesota, New Hampshire, New York, Vermont, Wisconsin

Hosts: Black spruce, red spruce, white spruce

Endemic levels of infection persisted in all these northern States.

Oak wilt, *Ceratocystis fagacearum*

Region 9/Northeastern Area: Iowa, Indiana, Minnesota, West Virginia

Hosts: Black oak, bur oak, red oak, scarlet oak

Oak wilt continued to cause mortality, particularly in suburban areas. It was the single, greatest forest pest problem in Iowa, with 2,380 acres of mortality reported. Minnesota also reported 5,528 acres of mortality. Oak wilt control programs continued in the Twin Cities of Minnesota. In Grant County, West Virginia, 20 trees were killed by oak wilt.

Purple eye spot, *Phyllosticta minima*

Region 9/Northeastern Area: Minnesota

Hosts: Sugar maple

Sugar maples growing along the North shore near Lake Superior on the Superior National Forest were discolored by this anthracnose fungus. Pockets of discoloration were scattered primarily along the upland areas, affecting about 5,907 acres. Aerial surveys conducted in 1996 also mapped discoloration in the same general area, but the cause was not identified. It is likely that this, too, was *P. minima*, indicating 1997 was the second consecutive year of damage caused by this disease.

Diseases: non-native

Beech bark disease, *Nectria coccinea*, (**Beech scale**, *Cryptococcus fagisuga)*

Region 9/Northeastern Area: Massachusetts, Vermont, West Virginia

Hosts: American beech

The killing front of this disease complex continued to expand through West Virginia. More than 868,000 acres has sustained mortality. The entire area represented by the advancing front (where the scale is present) comprises about 1.29 million. Scattered mortality still occurred in Vermont, but endemic infections in the aftermath forest are the rule in Vermont and Massachusetts as well as the rest of New England.

Dutch elm disease, *Ophiostoma ulmi, Ophiostoma novo-ulmi*

Region 9/Northeastern Area: Northeastern Area

Hosts: American elm

In Iowa, elms were affected on over 489 acres, 223 acres in Minnesota, and 78 trees known to be infected were identified in Missouri. The District of Columbia has over 700 American elms infected with the disease. Dutch elm disease remained common throughout all the Northeastern States.

European larch canker, *Lachnellula willkommii*

Region 9/Northeastern Area: Maine

Hosts: Eastern larch

The Federal quarantine continued on larch in coastal areas of Maine. The infection area did not expand in 1997.

White Pine Blister Rust, *Cronartiumam ribicola*

Region 9/Northeastern Area: Maine, Michigan, Minnesota, New Hampshire, New York, Vermont, Wisconsin

Hosts: White pine

White pine blister rust continued to cause dieback and topkill in mature trees, and mortality of seedlings and saplings throughout the range of eastern white pine. The most affected areas, continued to pose the greatest management challenge, although even there, deer are a greater problem affecting regeneration.

Diseases: origin unknown

Butternut canker, *Sirococcus clavigignenta-juglandacearum*

Region 9/Northeastern Area: Northeastern Area

Hosts: Butternut

The disease remained a common cause of butternut mortality throughout the host range. In West Virginia, surveys were initiated to isolate potentially resistant trees.

Dogwood anthracnose, *Discula destructiva*

Region 9/Northeastern Area: Northeastern Area

Hosts: Flowering dogwood

Although this fungus remained present throughout the Region, the incidence of this foliage disease has declined sharply across the Northeastern States. This was due primarily to spring weather conditions unfavorable to fungus spread.

Scleroderris canker, *Gremmeniella abietina*

Region 9/Northeastern Area: New York

Hosts: Red pine, Scotch pine

Scleroderris canker continued to cause dieback, decline, and some mortality to red and Scotch pine in New York. About 5,000 acres were affected in 1997.

Declines/Complexes

Ash yellows/declines

Region 9/Northeastern Area: Iowa, Massachusetts, New Hampshire

Hosts: White ash

Iowa reported 100 acres of decline due to ash yellows. There were 150 acres of ash decline in Massachusetts on trees that were also weakened by drought. Ash yellows was confirmed on samples taken in Hillsboro County, New Hampshire.

Brown ash decline

Region 9/Northeastern Area: Maine

Hosts: Black ash

The trend toward recovery of brown ash in Maine continued in 1997. The serious Statewide decline first became apparent in 1992.

Elm yellows

Region 9/Northeastern Area: West Virginia

Hosts: American elm, slippery elm

Thousands of elms scattered over more than 250,000 acres were showing symptoms or were killed by this disease. Nearly 40,000 acres in Pennsylvania also had damaged shoots and foliage. Ohio reported symptoms and mortality.

Maple decline

Region 9/Northeastern Area: New York, Vermont

Hosts: Norway maple, sugar maple

Street trees on over 16,000 acres in New York were killed by a comlex of restricted rooting area, drought, and salt damage. In Vermont, 670 acres of sugar maple also sustained dieback from a variety of biotic and abiotic stresses.

Oak Decline

Region 9/Northeastern Area: Missouri

Hosts: Oaks

Mortality due to oak decline was limited to 5 acres in Missouri in 1997.

Spruce fir Decline

Region 9/Northeastern Area: Maine, New Hampshire, New York, Vermont

Hosts: Balsam fir, spruces

There were no new occurrences or significant changes in the incidence of spruce fir decline, except for 1,014 acres of mortality reported in Vermont.

Abiotic Damage

Air Pollution

Region 9/Northeastern Area: Missouri

Hosts: Oaks

In Iron County, Missouri, 289 acres of discoloration was caused by sulfur dioxide emissions.

Drought

Region 9/Northeastern Area: Maine, New York, Vermont

Hosts: American beech, bigtooth aspen, chestnut oak, northern red oak, other hardwoods and softwoods, paper birch, white ash, white oak, white pine

In 1997, areas of beech and other hardwoods in northwestern Maine continued to show symptoms of decline due to several factors, drought being one of them. An estimated 1,800 acres were affected. In New York, 56,095 acres of hardwood forest had symptoms of drought related decline and 9,524 acres were affected in Vermont.

Flooding/high water

Region 9/Northeastern Area: Minnesota, Vermont

Hosts: Red maple, red spruce, other hardwoods

Flooding, partially caused by beaver dams, caused dieback and decline on over 11,248 of acres in Vermont. In western Minnesota, 37,268 acres of trees were affected by high water resulting from spring floods, much of which occurred along the Red River.

Frost

Region 9/Northeastern Area: Vermont

Hosts: Hardwoods

Discoloration due to frost conditions occurred on 570 acres of hardwoods in Vermont.

Ice

Region 9/Northeastern Area: Iowa, Massachusetts

Hosts: American beech, Atlantic white-cedar, bur oak, elms, maples

Iowa reported 58,000 trees had broken or dead branches on several species due to ice and snow. There were 280 acres of damage in Massachusetts.

Wind/tornado

Region 9/Northeastern Area: Iowa, Massachusetts, Minnesota, New Hampshire, New York

Hosts: American beech, hemlock, maples, oaks, pines, red maple, sugar maple, white pine

Scattered areas of wind damage occurred in 1997. In New Hampshire, 75 acres were affected by severe winds near Greenfield. In Massachusetts, 606 acres of forestland were damaged, 1,890 acres in Minnesota, and 50 acres in New York. Scattered wind damage also occurred in Iowa.

Winter Injury

Region 9/Northeastern Area: Iowa, Minnesota, Vermont

Hosts: Pines, spruces

There was discoloration of pine and spruce due to winter injury; 1,000 acres in Iowa, 970 acres in Minnesota, and about 250 acres in Vermont.