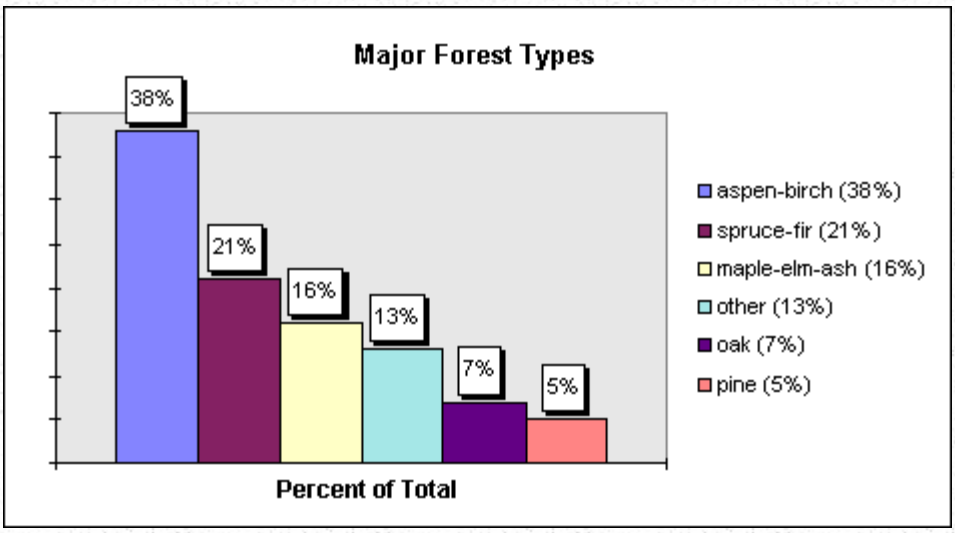
1995 Forest Health Highlights

Minnesota

The Resource

Minnesota's trees are a valuable resource. Forests account for 31% of Minnesota's land area. These forests are important to both the wood products and tourist industry. Forestry related industries and manufacturing employ about 60,000 people. The value of wood products annually exceeds $7 billion. A total of 4 million cords of wood were cut in 1993, and pulp and paper accounts for 31% of the cut. Window frames make up 20% of all the value of products produced. Other products include sawlogs, veneer, post and poles, fuelwood, and wood chips for landscaping. The Christmas tree industry annually produces trees worth over $25 million.

Trees are also important components in wilderness and urban settings. The Boundary Waters Canoe Area (over 1 million acres) has more visitors than any other wilderness in the United States. Forests in the state are home to the largest wolf and bald eagle populations in the lower 48 states. Annually, millions of people visit to camp, canoe, fish, hike and hunt.



Special Issues

The weather in 1995 can be summed up in one word, extreme. Brutal cold in April, record heat in June, and then, July brought winds. Storms across the northern half of the state during the nights of July 13 and 14 blew down many northern giants. Straight line winds blew down a total of 217,800 acres of forest.

Oak wilt is a fungal disease of oak trees primarily in the urban forest. Once established, the disease spreads throughout the woods, effectively removing mature oak from the ecosystem. The oak wilt cooperative suppression program began in 1991. The Forest Service, State and Private Forestry has funded this program for the 6th year because of the program's success. Approximately 2350 sites in the Minneapolis-St. Paul area have been treated by severing root grafts between healthy and infected oaks using a vibratory plow. More than 6,000 spore - producing trees have been removed and destroyed.

Minnesota has been dealt a major blow in its battle to keep **gypsy moth** out of the state, due to a quarantine breach in 1994 involving commercial nursery stock.

Eight counties took the brunt of the storms:	
County	**Acres**
Aitkin	14,600
Becker	29,800
Cass	5,500
Clearwater	69,600
Hubbard	22,100
Itasca	24,000
Mahnomen	7,800
St. Louis	68,400
Total Area Affected	**217,800**

Infested nursery stock was sold in approximately 200 outlets around the state. These introductions resulted in an increase in the number of moths trapped in 1994 in the state. Infestations were identified in two residential areas, one in Edina and the other in Maplewood, and 11 nurseries. These sites were treated with insecticides in the spring of 1995.

Increased emphasis was placed on trapping to identify any new infestations. Trapping was conducted in 71 out of 87 Minnesota counties. The good news is the number of gypsy moths has dropped considerably from the 1994 season.

The bad news is egg masses have been found in the communities of Eagan, Apple Valley, and Red Wing. This will likely result in additional treatments and detection trapping in 1996.

Other Issues

Spruce budworm is active on two fronts in Minnesota, in the northeastern and north central counties. Spruce budworm is a defoliator of balsam fir and white spruce that causes mortality in these two tree species. For the past 40 years, budworm has been actively defoliating balsam firs in the northeastern counties. We speculate that the thousands of acres of dead balsam firs and white spruces in this area from defoliation starting in the mid 1980's contributed to the Saginaga Corridor fire and those across the border in Canada. The leading edge of this population is moving westward and is in Koochiching and Itasca Counties.

In the north central counties, white spruce plantations in Cass, Beltrami and Crow Wing Counties have been defoliated for the past three to four years. This is an unusual event, budworm populations have not been a problem here since 1954. In individual plantations, there has been shoot mortality but as yet no topkill. Historically, budworm outbreaks have occurred in natural stands with a large component of over mature balsam fir. In these stands, outbreaks continue until the budworm runs out of food material. It is not known whether this outbreak in young white spruce plantations will collapse or continue until the budworm kills a large percentage of the trees.

Regional Surveys

Insects, pathogens, fire, animals, weather and several other agents are natural causes of damage and loss in forests. The latest statewide inventory, Forest Inventory Analysis (FIA), occurred in 1990 and measured losses due to mortality and cull that occurred from 1979 to 1990. To date, only volumes and values regarding tree mortality are available.

In the following graph, the entire pie chart represents the total volume of wood that is added to live trees in one year, or the total annual growth. The piece of pie cut away and labeled mortality represents the volume of trees that died in one year. Net annual growth is total annual growth volume minus mortality volume.

Insects and pathogens accounted for 53% of the mortality volume losses totaling 117 million cubic feet of wood. Losses from fire, animals and weather have been grouped together and caused 22% of the mortality. Other causes, amounting to 25%, is comprised of unknown causes and natural suppression.

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Northeastern Area

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