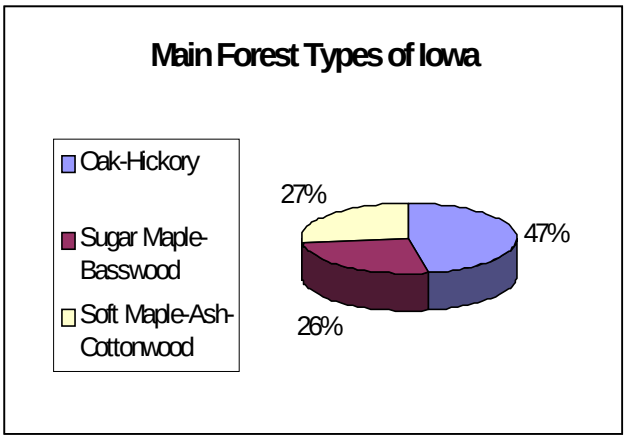
Iowa's Forest Health Report 2001

Why worry about Iowa's forest health?

Between 2-2½ million acres of Iowa is covered by trees and forests (6 percent of the landcover). Iowa's forests and trees are largely controlled by private ownership (92%). Our forests have significant impacts on Iowa's agricultural based economy by protecting water quality, providing wildlife habitat and numerous outdoor recreational opportunities. Wood/forest products industries in Iowa employ over 7,000 people, producing lumber and high quality wood products. Trees in our small and large communities or "urban forests" increase property values and conserve cooling and heating energy. Our forests are vital to our state's environmental future.



Forest health monitoring efforts are cooperative efforts with the DNR through the USDA Forest Service, USDA Plant Protection Quarantine, State Entomologist of the Iowa Department of Agriculture and Land Stewardship and Iowa State University, along with private/public foresters and private landowners. This cooperative effort encourages efficient monitoring efforts and fosters communication with those involved in Iowa's forests and their future health.

Monitoring Efforts for 2001

Estimates of serious forest and tree insect and disease, and severe weather impacts, were determined by aerial surveys of over 282,000 acres of upland forests (142,500 acres) and bottomland or floodplain forests (139,500 acres). Visual surveys from DNR foresters along with trained master woodland managers and community tree stewards ground checked forest health problems and locations. The "gypsy moth" *Lymantria dispar* a potentially serious, exotic defoliator of Iowa's native trees and shrubs was monitored in 2001 through a partnership with IDALS State Entomologist, USDA APHIS and the DNR Forests and Prairies, placing approximately 5,805 pheromone survey traps across the state. The purpose of the trap setting was twofold: to determine possible infestations and locate sites in need of control efforts. The DNR coordinated gypsy moth survey efforts at 38 western Iowa counties (750 traps), Yellow River State Forest (50 traps over 8,000 acres) and a statewide volunteer monitoring effort with over 400 trained community tree stewards.

Aerial Forest Surveys Flight Paths 2001

During the summer of 2001, DNR foresters conducted aerial surveys of 282,000 forested acres of the major river valleys of Iowa: Des Moines River, Cedar River, Iowa River, Mississippi River and the Upper Iowa River. Surveys were conducted at this time to determine the extent of oak wilt, Dutch elm disease and impacts of severe weather. Visual and verbal reports from community tree stewards and foresters were also used during the growing season to determine areas of significant impact.

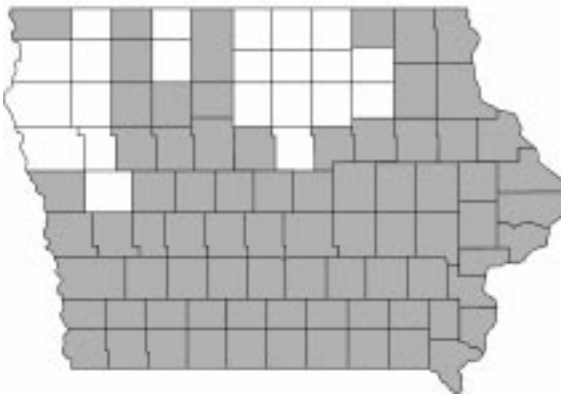
Weather Impacts

A “normal” Iowa winter brought sustained and record amounts and length of snowcover across the state from the end of December 2000 to the first part of March 2001. A wet spring along with severe weather brought a record 78 tornadoes to Iowa, with three F3 tornadoes causing two deaths and significant damage to tree Iowa communities: Agency, Blue Grass and Manchester. Wet and humid conditions brought noticeable symptoms of Anthracnose *Gnomonia and Gloeosporium spp.*and other leaf blights on urban trees across the state.

The wet spring caused delays in tree planting right up to the first of July, with parts of northeastern and southern Iowa receiving excessive amounts of precipitation, resulting in flooding. The DNR estimates that 245 acres of forest were significantly impacted by flooding along the Cedar, Iowa,Turkey and Missouri Rivers.

The year 2001 was a year of limited tree seed and fruit production across the state, from fruit trees to timbered areas. Lack of all species of acorns and walnuts were noted across the state. Dry conditions and mild temperatures during late fall and early winter statewide closed out the year 2001.

Oak Wilt 2001

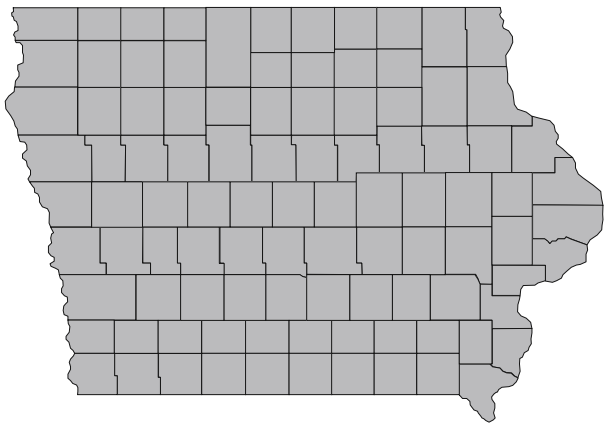


Tree and Forest Disease Issues

Oak wilt caused by the fungus *Ceratocystis fagacearum* invades the water conducting tissues (xylem) of oak trees and causes the foliage to wilt and die. During 2001, using a tree count rather than area count, DNR foresters reported 429 new acres of oak wilt infections. Although all species of oaks are susceptible, the red oak group especially black oak *Quercus veluntina*, northern red oak *Quercus rubra* and pin oak *Quercus ellipsoidalis* often die within weeks of infection. Bur oak *Quercus marcocarpa* was also observed with oak wilt symptoms. Oak wilt is spread via root grafts and sap-feeding nittidulid beetles. Although there is no cure for oak wilt, control strategies such as preventing tree wounds during high infection periods (March 1 to June 1), disease containment by cutting or killing roots of infected trees and killing oak trees surrounding the infected trees all appear to have some use in management and prevention. Sanitation of dying and dead oaks before oak wilt fruiting bodies appear in the following spring reduces the risk of overland spread. This year in the Des Moines metro area, oak wilt was confirmed in late August and early September on bur, pin and red oaks. High-valued oaks can be protected through high cost systematic injections of a fungicide, which has become more available through local tree care companies.

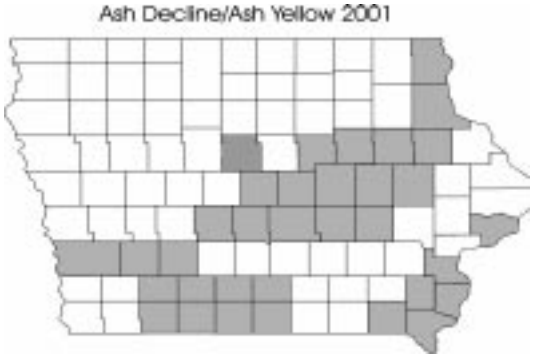
Dutch elm disease (DED) caused by the fungus *Ophiostoma umli/novo-umli* aided by an extremely wet and humid spring impacted approximately 164 acres of American elms *Ulmus americana* across the state. DED occurred in small and scattered drainage areas in rural areas and in isolated urban trees across the state. Continued lack of sanitation spread the disease over land by providing breeding grounds for disease carrying bark beetles.

Reports of Dutch Elm Disease 2001

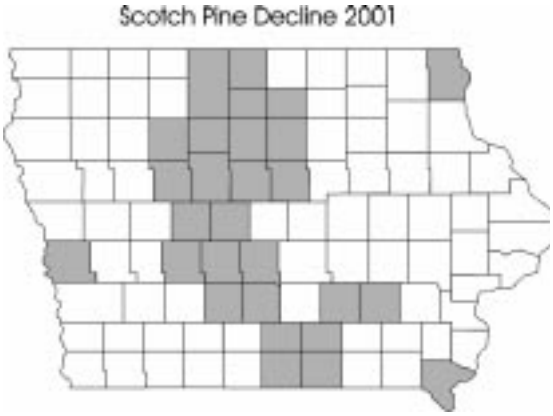


Tree Species Decline Issues

DNR field foresters continue to observe scattered ash dieback/decline of native white and green ash *Fraxiness americana* and *pennsylvanica.* In 2001, this ash decline was reported in 35 Iowa counties central and eastern Iowa. Allthough the exact cause of this dieback/decline of native trees is still under investigation at Iowa State University, DNR field foresters are recommending early removal of white ash during commecial and pre-commercial thinnings of forests and increasing species diversity in heavily green ash planted urban areas.



Non-native Scotch pine *Pinus sylvestris* is one of the most commonly planted conifers or evergreens for wildlife habitat, windbreaks and ornamental trees in Iowa. Over the past 3 years increased reports of sudden browning and mortality of Scotch pine has occurred. Both the DNR and Iowa State University believe that, Scotch pine decline is due to bark beetle (*Ips grandicollis*) attack and pine wood nematode *Bursaphelenchus xylophilus* action. Another factor, the Iowa environment and its limitations on moisture also figure into the whole scheme of Scotch pine decline, but there is still not enough information to give a definitive cause and effect. The particular loss of Scotch pine occurs most often in stagnate and dense plantings on heavy clay soils, when the trees are 20-30+ years of age. But reports of Scotch pine declining from Christmas tree-size to larger trees have also been reported. DNR foresters documented that 430+ acres of Scotch pine were lost over the year 2001 in 73 out of Iowa's 99 counties. Further survey and cause determination is being jointly pursued by the DNR and Iowa State University Departments of Entomology and Plant Pathology.



Tree Species Insect Issues

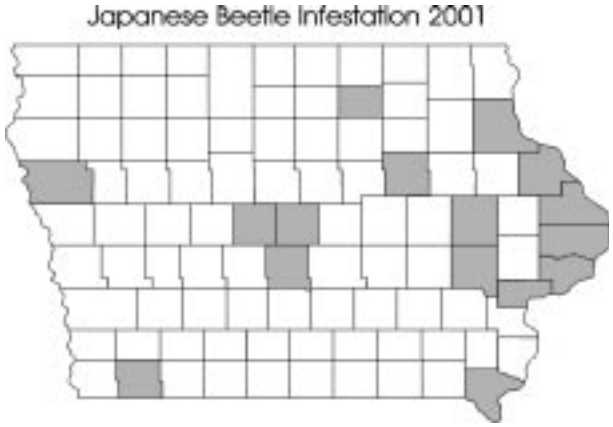
The gypsy moth *Lymantria dispar* is a potentially serious exotic defoliator of Iowa's native deciduous trees and shrubs. Originally brought to the US in the 1860's from Europe to help develop the silk worm industry, it escaped and has severely impacted the the forests of the northeastern states, and is now becoming a greater presence in the lake states of Michigan and Wisconsin. Gypsy moth survey trapping results in from 2000, identified 1 nursery dealer for eradication treatment with *Bacillus thuringiensis*. The site was treated by IDALS and USDA personnel involving 10 acres.

The gypsy moth program is coordinated by the State Entomologist with the Iowa Department of Agriculture and Land Stewardship, along with the Iowa DNR and USDA APHIS. State budget issues during 2001 required ten Iowa DNR foresters to place and monitor 750 traps in 38 western counities and Yellow River State Forest in NE Iowa - this involved over $22,000 in staff and expenses. Remaining GM traps were placed by IDALS and APHIS, with the DNR coordinating 400 volunteer trappers as well.

During the 2001 gypsy moth trapping season (May 1st to September 1st) a total of 26 male moths were caught in 13 Iowa counties. This is a drop from the 46 male moths caught in 2000 and the 135 moths caught in 1999.

Continued state budget issues will necessate continued DNR Forestry assistance in trap placement in Western Iowa, State Forest areas and volunteer coordination.

Japanese beetle, *Popillia japonica* is naturally spreading into Iowa. During 2001, visual reports and traps determined severe infestations in Dubuque, Linn and Scott counties, with modest infestations in 10 other eastern and central Iowa counities. This adult beetle is both of pest of turf and perennial plants such as roses - but in high numbers it has been reported defoliating native and non-native lindens, *Tilia spp.* misuse of over the counter beetle traps has been reported - which in fact is attracting more beetles to an area than killing them. Limited state and local resources pervent major management efforts with this pest - which will move across the state in the next 10+ years.



Other Tree Health Concern

Severe winter conditions during the winter and early spring of 2001, which provided record setting lsnow covers across much of state - increased wildlife damage to ornamental, plantation and forest trees. DNR foresters, along with Iowa Christmas tree growers and others reported widespread browse damage from White-tailed deer, *Odocoileus spp.*

IBecause of the scattered nature of deer damage reports, only a visual estimate from field staff is possible or approximately 1,800 acres during 2001. Deer browse damage was observed in 92 out of Iowa's 99 counties.

Deep snows also allowed deer to climb over fences and other obstacles in search for forage. Rabbit or eastern cottontail damage was also reported to be severe throughout the state. Rabbits aided by deep snows, easily girdled young trees and plants in urban and rural settings while protected from natural prediators.

Invasive Species Efforts Established

State agencies and universities are beginning efforts to increase awareness of invasive animal and plant issues related to urban adnrural forest areas. A standing working group is leading the efforts to conduct workshop and training sessions for natural resource professionals. An initial "Invasive Species Tour" was held in central Iowa in 2001. The DNR is in the initial stages of producing an invasive species poster and other materials for distribution statewide. An invasive species matrix of board concern has been developed. Plans are to begin scientific survey efforts and collection of control/management information during 2002.

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