

## The Resource

The health of Iowa 's forest resource is important economically, ecologically, and in terms of wildlife habitat, urban environments, water quality and outdoor recreation. Each year, the health and extent of Iowa 's 2.6 million acres of forested land is monitored by staff of the Iowa DNR Bureau of Forestry, cooperating with the U. S. Forest Service, the USDA Plant Protection Quarantine office (APHIS), the State Entomologist (IDALS), Iowa State University, as well as private/public foresters and private landowners. And each year, this report is compiled by the Forestry Bureau to inform Iowa citizens of the general level of health of Iowa 's forested lands.

This report discusses current characteristics of Iowa 's forests; insects, diseases and foreign species that act as stressors on Iowa 's forests; and programs that ensure continued monitoring and management of the health of Iowa 's forests.

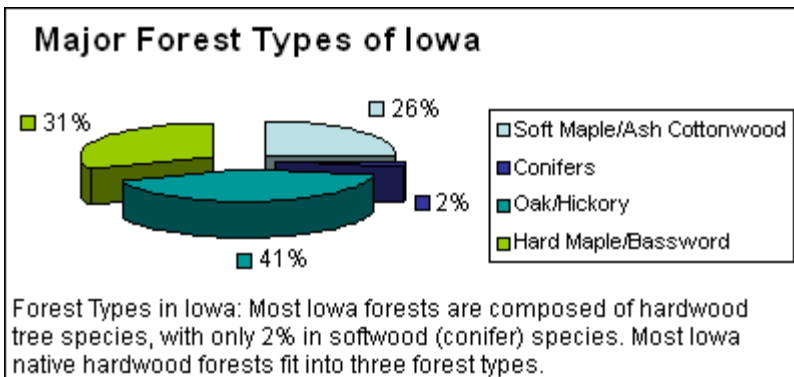
## Special Issues

### The Importance, Size, And Pertinent Characteristics Of Iowa's Forested Lands:

The positive news regarding Iowa 's forests is that they are generally healthy and are increasing in number of acres, and increasing in average tree quality and average tree size.

Most Iowa forests are hardwood forests. Each year, through a process known as

Forest Inventory and Analysis (FIA) sample plots are re-measured statewide in Iowa's forests. FIA data is distributed to the public in documents known as " Iowa 's Forest Resources" and the latest such document reveals the following information about Iowa forested lands:



- Forested land increased from 2.1 million acres reported in 1990, to 2.6 million acres reported in the latest USFS FIA documents. Iowa has 36 million acres; forests cover 7% of the state.
- The average tree in Iowa 's forests is getting larger each year, and of higher wood quality. Iowa's forests continue maturing.
- Iowa forests are "sustainable", meaning they continue growing more wood each year than is harvested each year. This is the most positive news of all.
- Iowa 's forest resource supports over 70 mills that produce lumber, veneer, and other forest products. Employment at these mills consistently exceeds 7,000 workers.
- Iowa 's forests contain an estimated 2.7 billion cubic feet of wood in trees counted as sound, useable growing stock. Counting dead trees, rough wood, unsound boles and unusable species, Iowa forests have 3.6 billion cubic feet of wood. Iowa forests contain an estimated 98 million dry tons of biomass.
- Iowa 's forests are primarily native hardwood forests (only about 2% in pine forests). About 40% of Iowa 's forests are oak-hickory, about 30% sugar maple-basswood, and about one fourth soft maple-ash-cottonwood types. Just over 90% of Iowa 's forests are privately owned, and 9% government owned.
- The National Forest Health Monitoring (FHM) Program reported to FIA that [oak wilt](#), [Dutch elm disease](#), [gypsy moth](#), [oak decline](#), and invasive plant species are forest health concerns in Iowa and, these (and more) forest stressors are discussed in this

report.

A forest resource that is expanding and sustainable promotes economic strength in Iowa. A forest resource that is healthy contributes immensely to our state's goals of clean water, abundant wildlife habitat, and a level of outdoor recreation and urban aesthetics that enhances quality of life in Iowa.

### Forest Health Monitoring Summaries For 2003:

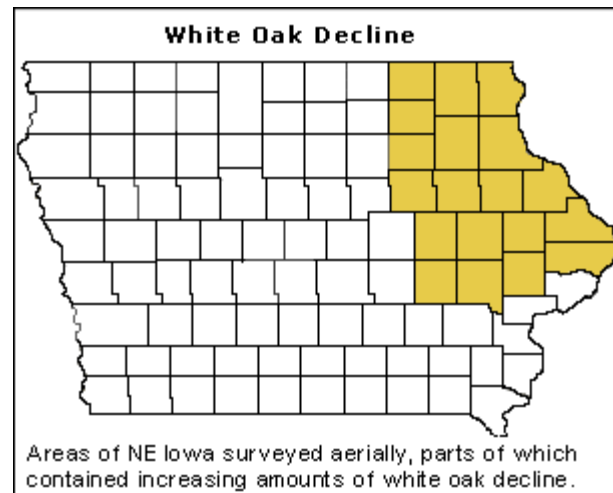
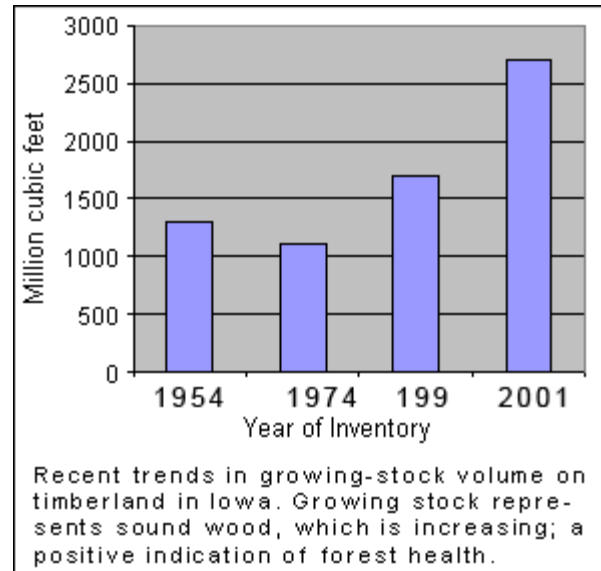
Even though Iowa's forests are generally healthy, certain stressors identified in this report threaten our forests and are discussed in more detail. Forest health monitoring for 2003 is summarized by three broad observations:

1. A serious insect and a serious disease, gypsy moth and white oak decline demonstrated an increased presence in 2003. Oak wilt continued to spread in certain areas of Iowa forests.
2. Common, less serious insects and diseases, which are always present and annually stress our forests were less noticeable in 2003.
3. Two non-insect/disease stressors, drought and invasive plant species played an important role in forest health in 2003.

The processes and techniques of forest health monitoring that produced these three broad observations are intense and ongoing. Each year, DNR staff performs aerial monitoring of the major forested areas in Iowa via chartered aircraft flights over 725,000 acres in major river valleys. Each year, field foresters covering the entire state report forest stressors both informally, and/or formally through written reports. Each year, the Iowa Forest Insect and Disease Management Council (IFIDMC) informs the Forestry Bureau of forest health problems noted around the state. IFIDMC is composed of entomologists, pathologists, arborists, foresters, and resource program leaders. Each year, the IFIDMC conducts a forest health tour around Iowa, which is a two-day field examination of sites and situations deemed of importance to forest health. All these sources of information contributed to the above three broad observations of forest health in 2003 and those three broad observations are discussed in more detail below:

**1). Gypsy Moth and White Oak Decline demonstrated increased presences in 2003: WHITE OAK DECLINE:** Rating reports from field foresters, field visits by entomologists and pathologists, reports from forest industry personnel, and aerial monitoring all concurred that white oak decline is increasing, especially in N.E. Iowa counties. One field forester expressed white oak decline as the most serious and important forest health issue in Northeast Iowa. Two important results occurred in 2003 in response to the increase in observation of this forest stressor.

1. Entomologists and pathologists from the Forest Service St. Paul, MN office, accompanied by foresters, entomologists and pathologists from within state visited, studied and evaluated several woodlands in NE Iowa demonstrating white oak decline on two separate occasions. These on-site studies included evaluation of specific trees tagged and monitored for three years by

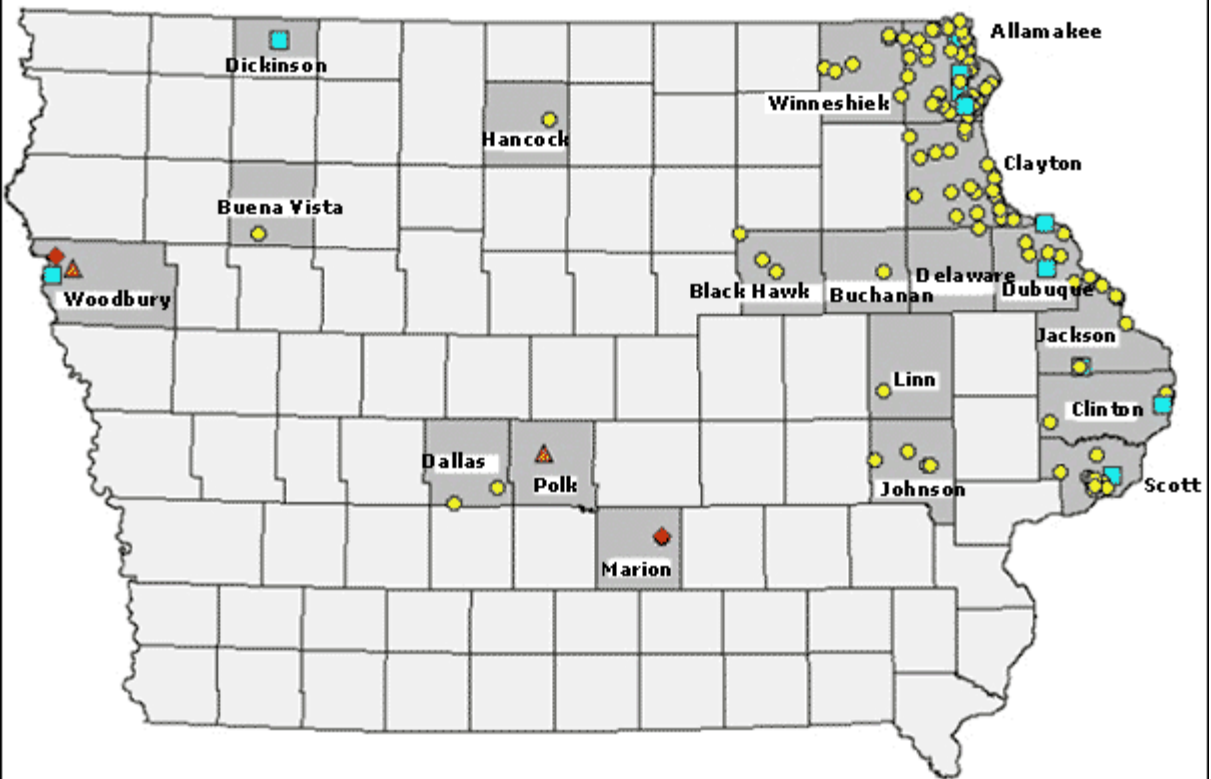


- field foresters. Species common to this decline were discovered; two-lined chestnut borer (*A bilineatus*) and armillaria root rot (*A mellea*).
2. The forest health coordinator for Iowa submitted a federal grant request for a three-year study project to find answers and develop silvicultural recommendations regarding white oak decline. Steps under this proposed grant would include laboratory culturing of living samples for root fungi, and placement of atmospheric measuring devices in tree crowns. Other avenues for financial assistance being explored include the range-wide field detection process for all root rots in oak now occurring under Forest Service programs. In general, these happenings during 2003 represent a resolve to find definite answers regarding white oak decline. Oak wilt continued to be documented in 2003, especially in SE Iowa.

**GYPSY MOTH** (*L. dispar*): Field monitoring demonstrated a significant increase of this insect in Iowa during 2003. Gypsy Moth (GM) trapping was coordinated by APHIS, assisted by IDALS and DNR during 2003 and over 3,500 field traps yielded 159 moths, an increase over 2002.

Gypsy Moth is not yet widespread as viable breeding populations in Iowa. For over a decade, pheromone trapping to identify early moth arrivals followed with treatments to eradicate early moth arrivals has kept GM out of Iowa. And, these trapping and eradication efforts are expected to keep Iowa moth free for additional years. However, Wisconsin entomologists report a quickening of movement of gypsy moth westward and this, combined with the increase to 159 moth catches in Iowa in 2003 pointed to the need to prepare for eventual infestation in Iowa.

### Gypsy Moth Catches 2003 - Positive Catches



| Number of Moths Per Trap |        |       |
|--------------------------|--------|-------|
| ●                        | 1      | (115) |
| ■                        | 2      | (14)  |
| ▲                        | 3      | (2)   |
| ◆                        | 4 to 5 | (2)   |

### Counties with 2 or More Moths Per Trap

| County    | Agency | Moths |
|-----------|--------|-------|
| ALLAMAKEE | IDALS  | 2     |
| ALLAMAKEE | IDALS  | 2     |
| ALLAMAKEE | IDALS  | 2     |
| ALLAMAKEE | IDALS  | 2     |
| ALLAMAKEE | IDALS  | 2     |
| CLINTON   | IDALS  | 2     |
| DICKINSON | IADNR  | 2     |
| DUBUQUE   | IDALS  | 2     |
| DUBUQUE   | IDALS  | 2     |
| JACKSON   | IDALS  | 2     |
| MARION    | ACE    | 5     |
| POLK      | USDA   | 3     |
| SCOTT     | USDA   | 2     |
| SCOTT     | USDA   | 2     |
| SCOTT     | USDA   | 2     |
| WOODBURY  | IADNR  | 2     |
| WOODBURY  | IADNR  | 3     |
| WOODBURY  | IADNR  | 4     |

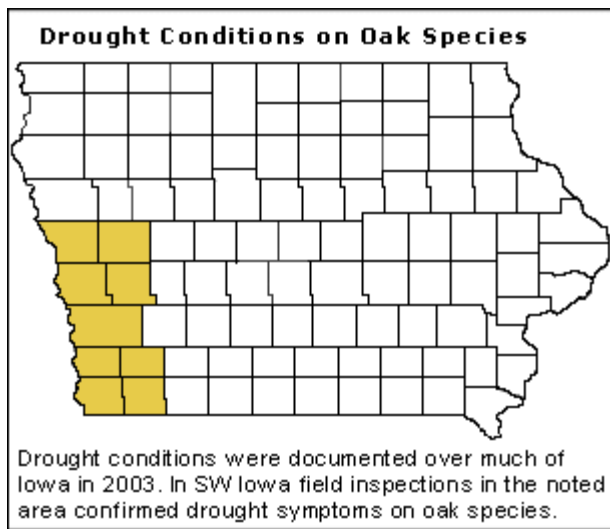
Therefore, steps were initiated in 2003 to prepare for infestation. Iowa's Gypsy Moth Position Paper was revised by a sub-committee of the IFIDMC during 2003. Revisions include plans for "slow the spread" (STS) programs for when viable populations of the moth do become established, plans for gaining budget support for STS and general suppression programs, and plans for increased involvement of stakeholders in GM programs and advisories. Increased trap catches, combined with monitoring of GM's westward movement warrant increased attention to this forest stressor and that attention is being given, and will continue to be given in coming years. ([Gypsy Moth 2003 summary](#)).

**Common insects and diseases that annually stress our forests:** Forest, and urban

forest health is monitored and documented by field foresters via annual rating reports. These reports rate the severity of such common stressors as wilts, ash maladies and insects, anthracnose, borers, needle and leaf blights, scale, flood damage, aphids, animal damage, caterpillars, cankers and others. The severity is rated on a scale of 1 to 10 with 10 being most severe. 86% of rated categories were rated 5, or less in severity in 2003. Many field foresters rated common forest stressors as low, even very low. In aerial monitoring flights, foresters noted very few of these common stressors. Isolated incidences of paleness of new foliage in new growth on soft maple was noticed, along with the continuing Dutch elm and oak wilt symptoms. Dutch elm disease could be readily observed in all counties (as in previous years). The annual forest health tour discovered the normal range of common forest stressors, but not significant areas of defoliation. Local outbreaks of common stressors were reported sporadically and sycamore anthracnose was reported heavier in certain portions of the state (including central counties) but overall, common forest stressors seemed lessened in intensity during 2003.

**Non-insect and disease stressors; drought and invasive plant species in 2003:**

During normal monitoring processes during 2003, weather events generally were not observed with great frequency. In aerial monitoring, only two areas were observed having wind damage. City foresters noted local incidences of wind damage to urban trees but large areas of downed timber, which commonly occur during Iowa tornado and straight-line wind events were not noted with regular frequency in 2003. However, weather damage from drought stress was noticed in South Western Iowa. Weather reports showed drought conditions in several parts of Iowa, and field inspections in Monona, Harrison and other Counties verified symptoms, where extensive forested areas of oak (primary species is bur oak) demonstrated foliage that had turned brown well in advance of normal fall coloration times.



**Weather Impacts**

Similarly, incidences of non-native plant species are judged as an increasing problem in Iowa forests. The Bureau of Forestry continued with demonstrations and public programs to inform landowners on how to manage for these plant species. The main program in 2003 was a field presentation at the annual Iowa Woodland Owners Association meeting wherein wooded plots in Warren County were treated with various mechanical and chemical combinations to eliminate thick under-story bush honeysuckle. Also, efforts involving invasive species groups and volunteers continued statewide to survey and define areas with invasive plant species of bush honeysuckle,

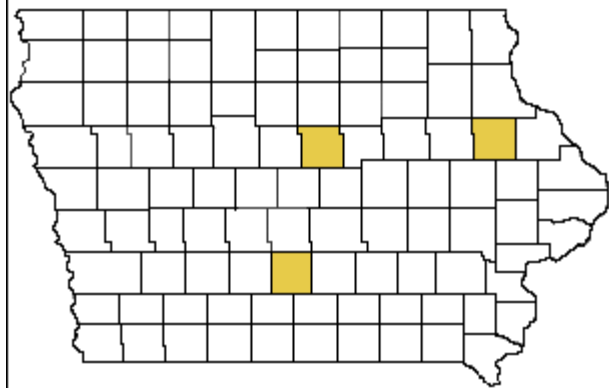
buckthorn, garlic mustard and multiflora rose.

The most recent FIA/FHM report on Iowa's Forest Resources also identified those four plants as serious invasive species. Additionally, two sites with oriental bittersweet were discovered and evaluated by IFIDMC members during 2003, one in Delaware County, and one in Hardin County, Iowa.

**Future Forest Stressors Of Importance**

Most personnel involved in forest entomology in Iowa would identify Emerald Ash Borer as

### Non-native species invading Iowa woodlands



Non-native species invading Iowa woodlands received special attention on three sites. Oriental bittersweet was field documented on a State Forest in Delaware County and a State Park in Hardin County. Mechanical and chemical treatments of thick brush honeysuckle were completed and demonstrated at a woodland owner's field day in Warren County.

an insect having high potential to damage Iowa 's forests within the next 5-10 years. EAB is a boring insect native to Asia which recently became established in Michigan, and spread to locations in Ohio, and close to the Indiana line during 2003. EAB is expected to move west toward Iowa and is an insect capable of destroying forests, and urban forests of ash (*Fraxinus* species). Therefore, preparations began in 2003 to counter and manage this insect in Iowa. EAB identification kits were received from the Forest Service and distributed by the Bureau of Forestry to entomology agencies and field foresters throughout Iowa. Also, communications are occurring regarding funding for preliminary monitoring, especially in Eastern Iowa and this funding is anticipated for 2004 or 2005.

Iowa 's forest health is important economically and ecologically, and Iowa 's forest health is monitored consistently. Programs already in place monitored Iowa 's forests for insect and disease problems during 2003, and identified two forest stressors that are increasing in occurrence, gypsy moth and white oak decline. Additionally, several new programs, studies and documents were generated in 2003 to address forest health concerns in more depth. The Iowa Gypsy Moth Position Paper was revised. On-site studies of white oak decline were performed and documented on two occasions and in three counties. And, a grant for additional study of this decline was prepared and submitted. Such programs assist in ensuring the future health of Iowa 's forested lands and ensuring continuation of the products and values derived from Iowa 's forests.

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