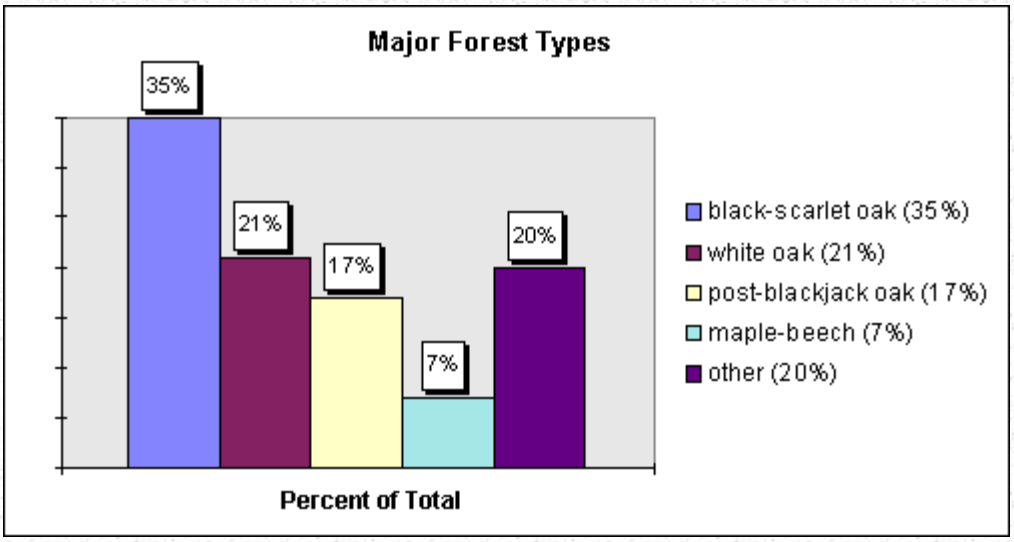
1995 Forest Health Highlights

Missouri

The Resource

Missouri is almost one-third forested. In addition to recreation and wildlife benefits these forests provide, the latest statistics indicate forest products annually contribute about $1.26 billion in value added and about $2.9 billion in products produced. There are over 2,600 firms employing more than 34,000 people with a payroll of more than $483 million per year.



Special Issues

Introductions of the **gypsy moth** continue to be a major concern in the State. Over 13,000 traps were deployed by the Departments of Agriculture (MDA) and Conservation (MDC), with the help of several other agencies, private groups and individuals. Over 300 volunteers participated in the project as well as regular paid staff. Traps were placed statewide with special attention to the areas around Branson (Taney Co.), Boss (SE of Salem in Dent Co.) and Eureka (W. St. Louis Co.).

A total of 23 male moths were caught in 1995, consisting mostly of single isolated catches. No moths were caught in Boss, the area sprayed this spring due to the introduction of eggmasses on household belongings. Only 4 moths were caught in the Branson area, none apparently associated with the Arkansas population. Sixteen moths were caught in St. Louis county, 7 of them in the Eureka area.

In Eureka, two of the traps caught multiple moths, which is the third year we've seen multiple catches in the same neighborhood. Normally this would suggest an established population. However, moth numbers have not increased over the three years, and no other life stage has been found. Therefore, USDA Animal & Plant Health Inspection Service (APHIS) officials believe we may be seeing repeated introductions rather than an established local population.

In response, MDC will be launching an educational project this fall with the help of MDA & APHIS. A combination of direct mailing, door to door interviews and public meetings will be used to communicate with local residents. The primary goals will be to alert area residents of the potential impacts of a gypsy moth infestation and the need for prevention, and provide the means for voluntary vehicle and property inspection to prevent further introductions. The project will be carried out in conjunction on with an eggmass survey of the area. No treatments will be carried out unless egg masses are found this winter. Instead, the area will be intensively trapped next season.

An accidental introduction of egg masses was discovered near Boss, in eastern Dent County in late April. Two applications of the biological insecticide, B.t., were successfully applied to about 5 acres of scattered trees. None of the traps deployed following treatment in May caught any gypsy moths.

Until last year, **dogwood anthracnose** had not been detected in Missouri. A large shipment of infected stock came in from Tennessee and was distributed through retail outlets across the state. Most of the outlets cooperated in a full rebate program in an attempt to locate and destroy infected plants. Many plants were returned and four were infected. Stock originating from Tennessee was found to be infected after growing for 2 years at a nursery in Montgomery county. Infected plants were destroyed and the field was treated with fungicides.

This year, additional plants were found to be infected at the same nursery, indicating the disease had spread. As a result, the entire field was destroyed in an attempt to prevent spread outside the nursery.

At another nursery in Crawford county, several pockets of the disease were found among 6-7 year old stock. Infected trees were destroyed and the rest treated with a fungicide. In spite of the mass introductions over the last two years, no established urban planting and natural dogwood trees have been found to be infected. As such continued eradication of disease pockets may yet keep the disease out of Missouri.

Other Issues

A variety of **extreme weather conditions** has left a mosaic of stressed and vigorous trees. Bottom land areas along the Missouri and lower Mississippi were flooded again this year at depths in some places greater than the 1993 flood. Trees which survived the previous flood were left in a weakened condition and are now showing signs of severe decline. Symptoms include dieback, branch breakage, thin crowns, discoloration, butt swelling, bark sloughing and an increase in secondary insects and diseases.

Overall mortality rates tend to vary with flood duration, such that rates of 20-30% are common along the western part of the state, while portions of the upper Mississippi River floodplain sustained up to 95% mortality. Sensitive species include all conifers (particularly white pine), dogwood, hard maple, hackberry, walnut, black locust, hickory and upland oak species.

Establishment of new forests in these areas has been excellent following the 1993 flood. Extensive spring rains the next two years has contributed to rapid growth and establishment of new stands of cottonwood, silver maple, sycamore, and hackberry. However, young trees were killed on sites flooded again this year. Seed sources, while not as high this year, are still good, so a new stand is expected next year.

The southwest portion of the state received little to no rain between July and October with temperatures during the period staying in the high 90's. As a result, upland species on dry rocky soils are demonstrating severe heat scorch and wilt. Understory species are particularly hard hit as well as black and scarlet oaks. Scorch patterns follow contour lines leaving green healthy trees on the broad flat ridges, and brown trees along both the north and south upper slopes. Roughly 30% of the trees have greater than 50% leaf loss in these areas. Because the leaf loss is relatively late in the season, most trees will recover. Those severely wilted and previously stressed may see higher mortality rates over the next few years.

Warm weather in March prompted early bud break across much of the state. Cold wet weather in April and May then slowed leaf expansion, leaving a long period in between where new shoots were vulnerable to infection by foliar fungi. The result was extensive defoliation of sycamore, ash, maple, and some oak. Most sycamore lost 90-95% of their new shoots and had to refoliate this year. Expansion of earlier infection sites killed many of the secondary shoots, resulting in severe stress.

Ash and maple fared better. Symptoms were confined to severe leaf spotting with minimal shoot damage. Few trees had to refoliate, so stress remained manageable. The same extensive rains that slowed leaf expansion during the spring contributed to rapid growth during the summer months, particularly among upland species in the north and eastern parts of the state. Here tree resources are looking good.

The only species in these areas suffering higher than usual mortality rates are Scotch pine, due to the expansion of the **pine wilt nematode**.

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Northeastern Area

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