Missouri

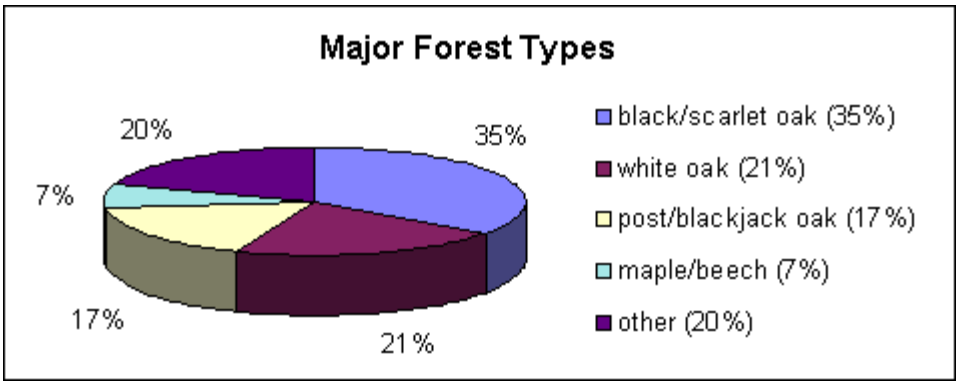
The Resource

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

- 31.7% of the state is forested (13,998,200 acres)

Out of the forested area:

- 30.3% timberland
- 0.7% non commercial or reserved forestland



Special Issues

Gypsy moth is a major concern in Missouri, especially since an established population was recently discovered just over the state boundary in Arkansas. State and federal agencies, private organizations and landowners combined efforts to increase the Missouri trapping program from 9,000 traps in 1993 to 13,000 traps in 1994. Most of the traps, which contain a chemical attractant to the gypsy moth, were concentrated in the counties bordering Arkansas. Moth catches in these areas were very low, indicating that there are no established populations of gypsy moth in the Branson area. Moths caught in the Branson area in 1993 were probably blow-ins from Arkansas that occurred as a result of high winds during egg hatch. The Arkansas infestation was treated with Bt, a biological insecticide, in spring 1994. Moth catches indicate that the treatment was effective in reducing the population numbers, but remnants still exist and will be treated again in 1995.

Only 39 gypsy moths were trapped in Missouri in 1994, a twofold decrease from 1993. The majority of the catches were in the St. Louis area, and were single catches (one moth per trap). Single catches are usually the result of isolated moths imported on recreational vehicles or household goods, and usually do not indicate established populations. Two traps near Six Flags in Jefferson county had multiple moths in both 1994 and 1993, strongly suggesting a low density population in the vicinity. No egg masses have been found. If egg masses are found in future years, the area may need treatment. When numbers are low, mass trapping may prevent mating and eradicate the population, avoiding the need for additional treatment.

Dogwood anthracnose, caused by the fungus *Discula destructiva*, is a destructive disease of dogwoods that

apparently was introduced to the United States 15 to 20 years ago near New York and Seattle. Recently, flowering dogwood trees, some infected with the disease, were shipped from a Tennessee nursery and sold at several retailers in Missouri. The disease recently was found in a field of flowering dogwoods in a Missouri nursery. All known symptomatic trees found in Missouri in 1994 were destroyed.

Dogwoods of all ages are susceptible to dogwood anthracnose. Spores produced on dead leaves and stems provide abundant inoculum for spring infections. Infection is favored by cool, wet weather. Consecutive years of heavy infection can lead to extensive tree mortality. Once the disease is established, cultural practices and fungicides can be used to manage the disease in ornamental settings.

Many areas of the state experienced tree mortality associated with the **flood** of 1993. Aerial surveys of the Missouri and upper Mississippi river basins in 1994 showed that tree mortality was high (exceeding 60% of trees) on 20,564 acres in 12 counties. Moderate levels of mortality (30-60%) were evident on 30,124 acres scattered across 24 counties, while 31 counties sustained 10-30% mortality on 65,059 acres. Trees most heavily affected were those along drainages and behind levees where water levels remained high even after initial flood waters receded. In some places water levels exceeded 15 feet for over 10 weeks during the peak growing season. As a result of the flooding stress, tree mortality levels are likely to remain high for the next several years. Missouri is participating in a multi-state study to document how different tree species respond to flooding effects.

Other Issues

In contrast to the very wet growing season of 1993, a hot, dry period in June and July 1994 caused **scorch damage** to many trees and shrubs. **Dieback** of mature trees increased across the state in 1994, probably due to combined effects of extreme weather, tree age, and other stressors.

The incidence of most defoliating insects was low in 1994, but populations of **plant bugs** and other sucking insects were higher than usual. **Japanese beetle** has caused defoliation of basswood in the St. Louis area. Except for a known population in Merimec Park, this pest has not been detected in other parts of the state.

Populations of **pine needle scale**, which has become a serious pest on Christmas trees in the state in recent years, were also high. A survey conducted in 1994 indicates that this pest has three generations in Missouri, rather than two generations common to other regions. This may be contributing to the rapid increase of scale populations.

The overall incidence of **foliar diseases** was low in 1994, primarily due to drier weather conditions during the growing season. An exception to this was a high level of **oak leaf blister** on white oak.

Regional Surveys

Pine Shoot Beetle was surveyed for in 1994 and none were found in the state. APHIS and the MO Department of Agriculture will continue to survey for this pest through their nursery inspection program.

Butternut is being threatened over much of its range by **butternut canker**. Currently our information on butternut distribution in Missouri is limited because inventories do not sample intensively enough to make reliable estimates of species that occur in small numbers. We are interested in identifying healthy individuals in the hope that they are resistant to the disease and can be used in breeding and reintroduction efforts.

For More Information

Marvin Brown, State Forester
MO Dept. of Conservation
Box 180
Jefferson City, MO 65102

(315) 751 - 4115

Forest Health Protection
USDA Forest Service
1992 Folwell Avenue
St. Paul, MN 55018

(612) 649 - 5261

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