

# Nebraska Forest Health Highlights

## 2010

### The Forest Resource

Nebraska is home to several important forest types. Ponderosa pine dominates the forests in the Panhandle of western Nebraska including the Wildcat Hills in the central Panhandle and the Pine Ridge in the north. Upland deciduous forests are present in the east along the Missouri and Nemaha Rivers. In northern Nebraska, the Niobrara Valley contains an ecologically unique mix of ponderosa pine, eastern redcedar, central hardwood forests (oak and walnut) and remnants of the northern boreal forest (aspen and birch). Riparian forests of cottonwood, elm and ash protect river and stream corridors throughout the state.

The current estimate of forest land area in Nebraska is 1.3 million acres. Windbreaks, shelterbelts and narrow wooded riparian strips account for an additional 423,000 acres of tree-covered land, while community forests add 470,000 acres to the state's total forest resources. In total 3.3 million acres of forested and treed land occurs in the state.



Ponderosa pine in the Wildcat Hills of Nebraska

### Pests of Concern in Nebraska

#### Diplodia blight

Diplodia blight continues to increase in Nebraska in both urban and rural landscapes. Stressed trees are more susceptible, such as those in overcrowded stands. In 2010 large areas of trees sustained extensive crown damage caused by Diplodia following hail storms in many areas of the state, particularly on native ponderosa pine in the Pine Ridge and Niobrara Valley. Planted Austrian pine was also damaged.



Diplodia damaged trees near Keller State Park in northcentral Nebraska following a hail storm.



## Pine wilt

Pine wilt is caused by the pinewood nematode, a pathogen native to most of North America. The disease has killed thousands of Scotch pine in Nebraska annually since the late 1990s. Pine wilt occurs in scattered locations throughout much of the state, but is prevalent in the east and south-central. The Nebraska Forest Service no longer recommends using Scotch pine in long-term plantings in the southeast portion of the state.



Scotch pine windbreak with pine wilt in eastern Nebraska.



Converting a native bur oak woodland to a park disturbs the root system, which contributes to oak decline.

## Oak decline

Several biological and environmental factors appear to be involved in a general decline of bur oak in northern and eastern areas of the state. Environmental factors include root disturbance and soil compaction from livestock or human activities, herbicide exposure, and long term effects of drought. These factors have stressed trees and made them more susceptible to pests such as cankers, borers and root decays (including *Armillaria*). Oak wilt and bur oak blight (*Tubakia* sp.) are also contributing to the decline in many cases.

## Dutch elm disease

Dutch elm disease continues to cause mortality in American elm throughout the state, particularly in riparian areas and communities. Vectors include the European elm bark beetle (*Scolytus multistriatus*), the native elm bark beetle (*Hylurgopinus rufipes*) and potentially a new exotic species, the banded elm bark beetle (*S. schevyrewi*).



### **Thousand cankers disease**

One of the newest pests of national concern is thousand cankers disease of black walnut, which has killed thousands of trees in nine states in recent years. In 2010, street-side surveys of black walnut were conducted in seventeen communities in Nebraska, and no evidence of the disease was found. In addition, a new program was developed to train citizens to survey for thousand cankers disease. These volunteer “Tree Pest Detectors” greatly increased detection efforts across the state. A quarantine of walnut wood from infested states is in effect to prevent the movement of this disease and its vector into Nebraska.



Eastern black walnut trees killed by thousand cankers disease near Denver, Colorado.

### **Mountain pine beetle**

Mountain pine beetle caused scattered mortality in the Wildcat Hills and the Pine Ridge in ponderosa and Scotch pine in both rural and urban areas. Advanced insect development (adult emergence from green trees in late autumn) was noted in some trees. The beetle was not collected in detection traps placed in the Niobrara Valley in north-central Nebraska.



Ponderosa pine in the Pine Ridge killed by mountain pine beetle.

### **Zimmerman pine moths**

Three species of *Dioryctria* (Zimmerman pine moth) continued to cause branch and tree mortality in Nebraska. The insects are present in western and central Nebraska, as well as in the Lincoln and Omaha areas. Ponderosa, Austrian and Scotch pine are commonly attacked, and young trees generally sustain more damage than mature trees.

## **Emerald ash borer**

Emerald ash borer remains at the top of the list for economic impact to Nebraska's forest resources. New inventory estimates place the number of ash trees in the state at 44 million. Detection trapping and park/campground surveys are ongoing efforts. A new citizen monitoring program was developed in 2010 to engage volunteers in survey efforts. These "Tree Pest Detectors" donated over 500 hours this summer in surveys for emerald ash borer and thousand cankers disease.



Left: The Tree Pest Detector program trained citizen volunteers to survey for emerald ash borer and thousand cankers disease. Right: Trainees learned to take close-up digital photos.

## **Gypsy moth**

Annual detection trapping for gypsy moth is conducted each year in the state. Traps are placed among potential hosts at state parks, rest areas and nurseries. In 2010, positive catches were found in Brown, Douglas and Lancaster Counties.

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**For further information on Forest Health in Nebraska, please visit the websites listed below.**



Nebraska Forest Service  
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[www.nfs.unl.edu/program-foresthealth.asp](http://www.nfs.unl.edu/program-foresthealth.asp)



USDA Forest Service—Rocky Mountain Region  
Forest Health Protection (FHP)  
[www.fs.usda.gov/goto/r2/fh](http://www.fs.usda.gov/goto/r2/fh)