

# Nebraska Forest Health Highlights

## 2011

### 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.

### Pests and Problems of Concern in Nebraska

#### Flooding

Record flooding of the Missouri River inundated an estimated 21,650 acres of forested land in eastern Nebraska in 2011. The flooding impacted several urban areas and agricultural land as well. Much of the area was submerged for two to three months during the summer. The flooding resulted from snow melt from record snowfall in the Rocky Mountains plus heavy spring rains.

The long-term effects on flooded trees may be difficult to ascertain. Trees that survive the flooding may be stressed for many years and therefore more susceptible to pests and other problems.



Trees dying after three months of flooding by the Missouri River. *Picture courtesy of Lee Valley Auction & Realty*

## Mountain pine beetle

Mountain pine beetle continued to cause scattered mortality in the Wildcat Hills and the Pine Ridge in ponderosa and Scotch pine in both rural and urban areas. In an effort to slow the spread of the beetle and limit its impact, a cost-share program was implemented to help public and private landowners manage the insect. Monitoring continued in 2011 through trapping and scouting.



A pocket of ponderosa pine in the Wildcat Hills killed by mountain pine beetle.

## Pine wilt

Pine wilt is caused by the pinewood nematode, a pathogen native to most of North America. Recent research suggests that a bacterium carried by the nematode may play a significant role in the disease. Pine wilt has killed thousands of Scotch pine in Nebraska annually since the late 1990s. The disease 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.

## Diplodia blight

Diplodia blight continues to increase in Nebraska in both urban and rural landscapes. Damage is often seen in both Austrian and ponderosa pines. Stressed trees are more susceptible, such as those in overcrowded stands. In 2011 several acres of native ponderosa pine in the Pine Ridge sustained extensive crown damage caused by Diplodia blight following a hail storm.

## 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.

## 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 twelve states in recent years. In 2011, street-side surveys of black walnut were conducted in six communities in Nebraska, and no evidence of the disease was found. In addition, one hundred citizen volunteers have been trained in the past two years to survey for thousand cankers disease. These “Tree Pest Detectors” have 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.

### Nebraska Black Walnut Facts

- ✓ 1.5 million trees
- ✓ 40 million board feet of merchantable wood  
(value: \$40-80 million)
- ✓ 1 million board feet harvested annually  
(value to state's economy: \$3.5 million)
- ✓ 4,000 commercial nut-bearing trees
- ✓ 70,00 pounds of nuts produced annually  
(value to state's economy: \$1.2 million)
- ✓ valuable species for wildlife
- ✓ widely used landscape tree for tough sites

## 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.

### Bur oak bark shredding

In spring of 2011 bark shredding on young bur oak trees was reported in multiple locations in the state. The shredded bark contained numerous tiny cells. A gall wasp (possibly *Loxaulus* sp.) was found in a few undamaged cells. Downy woodpeckers are suspected of feeding on the larvae during winter, shredding the bark in the process. Affected branches failed to leaf out in spring. In some instances the entire tree died.



Young bur oak with shredded bark.

## **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*).

## **Emerald ash borer**

Emerald ash borer remains at the top of the list for potential 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. Citizen "Tree Pest Detectors" have been trained in emerald ash borer identification and survey methods and have assisted with survey efforts across the state. The insect has not been detected in the state.

## **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 2011, a single moth was trapped in Douglas County.

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



Nebraska Forest Service  
Mark Harrell, Forest Health Program Leader  
[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)