

# Nebraska Forest Health Highlights

## 2013

### 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 is present in the state.

### Pests and Problems of Concern in Nebraska

#### Drought

Drought conditions continued in Nebraska in 2013 with abnormally dry conditions or worse in more than 86% of the state during the entire year. Severe drought conditions existed in more than 26% of the state during the year.

Drought can cause significant tree losses in communities and rural areas as it kills trees outright when soil becomes too dry and when it makes trees more susceptible to serious disease and insect



pests because of the additional stress the drought causes. In 2013, drought conditions alone or as the primary agent killed hundreds of trees including ponderosa, eastern white, Austrian, and Scotch pines; Norway and Colorado blue spruces; and eastern redcedar.

White pine killed by the drought.

## **Pine wilt**

Pine wilt continued to kill thousands of Scotch and Austrian pines in eastern and south-central Nebraska in 2013. The disease occurs also in scattered locations in the central and southwestern parts of the state. The Nebraska Forest Service no longer recommends using Scotch pine in long-term plantings in the state.



Scotch pine windbreak and trees killed by pine wilt.



Austrian pines in various stages of decline from Diplodia blight.

## **Diplodia blight**

Diplodia blight continued to kill and damage many pines in Nebraska in 2013 in both urban and rural landscapes. Mortality and damage most often occur on Austrian and ponderosa pines. Stressed trees are more susceptible to the disease, such as those affected by drought and overcrowded stands, and urban landscape trees that have been poorly planted or poorly cared for.

## **Ips beetles**

Ips beetles caused significant mortality and damage in ponderosa pine in the Niobrara and Snake River valleys in north-central Nebraska in 2013. In some stands, more than half of the trees were killed by the beetles. Drought stress, and in some cases improper handling of logging slash, contributed to the beetle outbreak.



Ips beetle damage in ponderosa pine.

## **Mountain pine beetle**

Mountain pine beetle activity was much reduced in 2013. No live adults or larvae were found in the ground surveys that were conducted. Beetle populations in western Nebraska forests seem to have returned to the low levels that existed prior to the 2009 outbreak. Monitoring for the beetle will continue.

## Thousand cankers disease

Thousand cankers disease of black walnut has not been found in Nebraska. In 2013, street-side surveys and surveys in plantations of black walnut in Nebraska found no evidence of the disease or the twig beetle associated with it. A quarantine of walnut wood from infested states is in effect to prevent the movement of the 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



Large masses of resin indicate attack by *Dioryctria* species.

## Zimmerman pine moths

Three species of *Dioryctria* (Zimmerman) pine moth continued to cause branch and tree mortality in Nebraska. Symptoms include masses of pitch (resin) that form on the bark where the insects are inside tunneling. The insects are present in western and central Nebraska, as well as in the Lincoln and Omaha areas. Ponderosa, Austrian and Scotch pines are commonly attacked, and young trees generally sustain more damage than mature trees.

## 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.

## **Cytospora canker**

Cytospora canker of spruce has become more common in landscape plantings and windbreaks, probably because of the additional stress in the trees caused by this year's dry conditions and the multi-year drought that ended only a few years ago. Colorado blue spruce is the species most commonly affected. Branches and sometimes the tops of trees are killed by the disease.

## **Dutch elm disease**

Dutch elm disease continues to cause mortality in American elm throughout the state, particularly in riparian areas and communities.

## **Emerald ash borer**

Emerald ash borer has not been found in Nebraska, but it remains at the top of the list for potential economic impact to the state's forest resources. Detection trapping and surveys in parks and campgrounds are ongoing efforts.

---

**For more information on Forest Health in Nebraska, please visit the website:**

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



Mark Harrell, Forest Health Program Leader  
Nebraska Forest Service