



Nebraska Forest Service



University of Nebraska-Lincoln

Forest Health Highlights 2020

Laurie Stepanek, Forest Health Specialist, Nebraska Forest Service

The Forest Resource

Nebraska has 1.5 million acres of forestland and an additional 1.3 million acres of non-forestland with trees. Ponderosa pine forests dominate the west and represent the eastern-most range of this species in the U.S. Central hardwood forests typical of the eastern U.S. are found in the eastern part of the state, and the birch/aspen forests in northern Nebraska are representative of northern boreal forests. These forest types, combined with elm-ash-cottonwood riparian forests, mixed conifer forests, conservation tree plantings and urban forests, create a highly diverse and unique array of tree and forest resources growing within an agricultural and range landscape.



Figure 1: State tree of Nebraska: eastern cottonwood

The dominant species of Nebraska's non-forestland with trees (defined as less than one acre, less than 120 feet wide and less than 10% stocked) are eastern redcedar, Siberian elm, hackberry, red mulberry and ash; although by cubic volume, cottonwood/poplar species dominate (figure 1). Trees on non-forestland provide unique benefits such as wind protection, snow drift management, energy savings, livestock protection, crop protection and yield increases, water quality and soil protection, wildlife habitat and other ecosystem services, as well as aesthetic benefits and make communities more livable. Although not large units individually, these areas are important components in Nebraska's urban and rural landscapes.

Pests and Problems of Note in 2020

Fall 2019 and Spring 2020 Freezes

Extremely low temperatures (teens/single digits) occurred in fall of 2019, followed by late spring freezes in 2020. These conditions likely stressed trees and may have contributed to evergreen browning and even some mortality. Young redcedar windbreaks seemed hard hit. The late spring freeze affected leaf-out of many broadleaf trees.

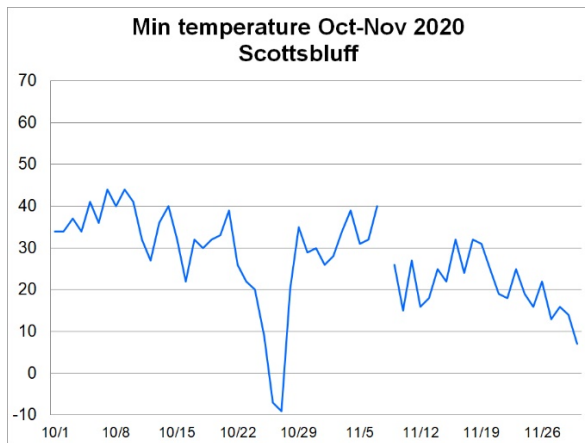


Figure 2: Early extremely low temperature in fall 2019 occurred statewide and likely led to conifer browning in spring 2020.

Dying redcedar in young windbreaks reported in the northeast appeared to have various causes. Some trees appeared to have an unidentified canker low on the mainstem, killing the top but with roots still healthy. Others appeared to have been damaged near the ground line in previous years and had sloughed bark. Root issues due to wet soils and fabric interference may have also stressed trees. Sudden freezes and other stressful conditions can trigger development of latent fungal cankers.



Figure 3: Young redcedar with dead trunk but healthy roots.

Spruce Issues

In early June 2020, extremely hot windy days resulted in newly emerging shoot tips of spruce to curl over and die. Many areas of the state experienced severe drought, which may have contributed to extensive needle drop and in some cases mortality.



Figure 4: Hot dry winds in early June desiccated young shoots on spruce (image courtesy Pat Evans).

Herbicide Damage

Damage to trees likely due to herbicide exposure was common again in 2020. Growth regulator-type herbicides such as 2,4-D and dicamba are used in agricultural fields and urban landscapes and often drift or volatilize and damage trees nearby. Oaks, hackberry, maples, and legumes such as redbud are commonly affected.



Figure 5: Leaf curling and browning in hackberry likely due to herbicide exposure (image courtesy Ron Seymour).

Foliar Diseases

Conifer foliar diseases have been building in recent years, including *Cercospora* needle blight and *Gymnosporangium* rusts on eastern redcedar and Rocky Mountain juniper and *Dothistroma* needle blight on pines. Rusts have been severe also on ornamentals like hawthorn, pear, and crabapple.



Figure 6: Rust on ornamental pear (images courtesy Yuris Dzenis).

Kermes Scale

Some branch dieback was noted in pin oaks in 2020, and kermes scale was present. Although kermes is associated with drippy blight in Colorado, no evidence of this disease was noted in Nebraska.



Figure 7: Kermes scale on pin oak causing twig dieback.

Emerald Ash Borer (EAB)

Four new counties were added to the list of EAB-infested counties in 2020. Two were in the eastern part of the state adjacent to other infested areas, but the other two were in central Nebraska: in the cities of Kearney and Grand Island. Infested counties now include: Buffalo, Cass, Dodge, Douglas, Hall, Lancaster, Saunders, Seward, and Washington. The state EAB quarantine was lifted in 2020, however detection activities will continue and new county infestations will continue to be reported.

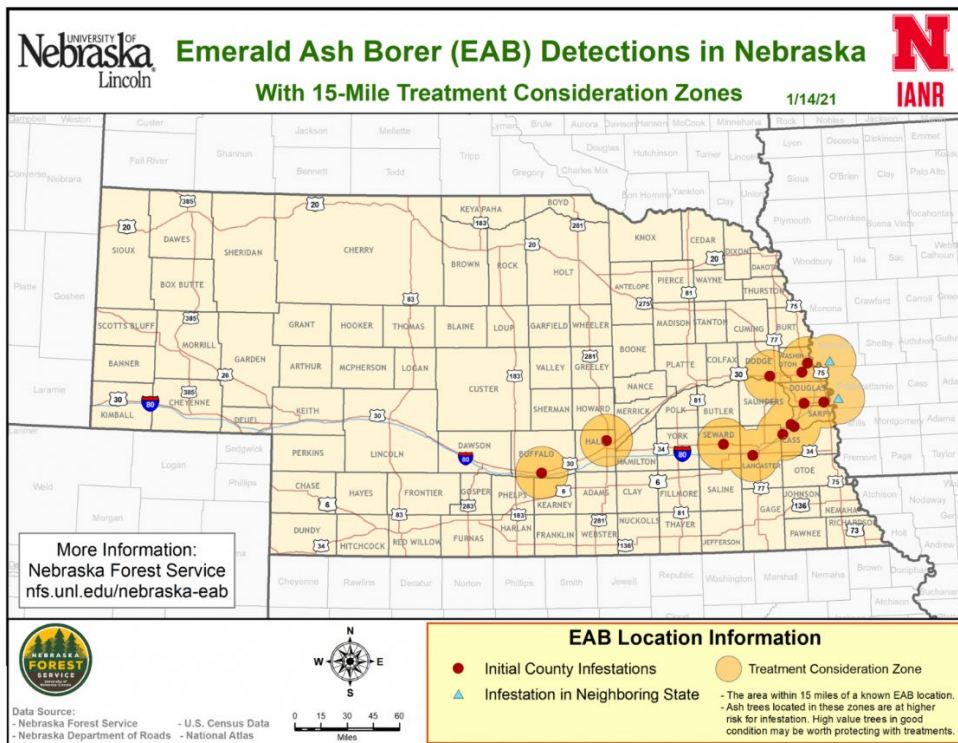


Figure 8: Emerald ash borer in Nebraska.

For more information on forest health in Nebraska, please visit the Nebraska Forest Service website:

www.nfs.unl.edu