LEGISLATIVE RESEARCH OFFICE

SNAPSHOT

A policy brief from the Legislative Research Office

A Very Bad Bug | Emerald Ash Borer in Nebraska

By Kate Gaul

In 2016 Nebraska became the 27th state to find the emerald ash borer (EAB) within its borders. While this is not a group of states we ever wanted to join, foresters and entomologists have long expected it.

Since first being identified in the United States in 2002 near Detroit, the metallic-green beetle from Asia has steadily spread its destructive reach, killing tens of millions of ash trees. By 2014, all 99 of neighboring Iowa's counties were under quarantine. The clock was ticking for Nebraska.

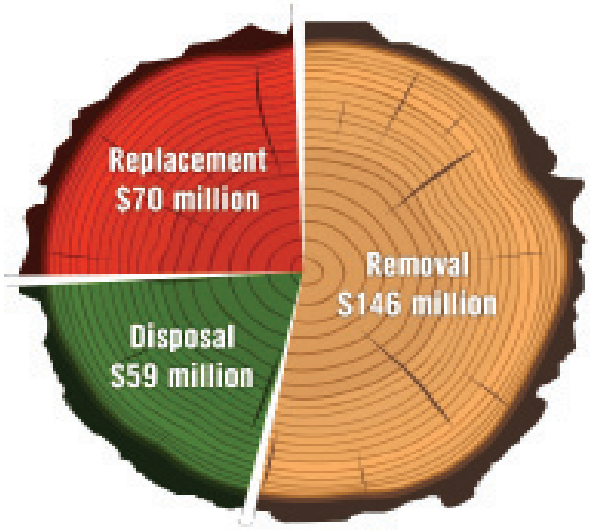
Nebraska has an estimated 44 million ash trees, several species of which are native to the state. The Nebraska Forest Service calculates, on a statewide average, ash trees comprise 16 percent of the trees shading Nebraska cities—up to 40 percent in some communities—and nine percent of trees in rural areas, including critical agricultural windbreaks, shelterbelts, and riparian areas.

A Hidden Killer

EAB spends much of its life hidden from human view, often present in ash trees three to four years before visible damage becomes apparent. Between years five and eight, the EAB population explodes. Adult EABs will fly only a few miles from where they emerge, but transporting infested firewood and nursery stock allow it to spread uncontrollably.

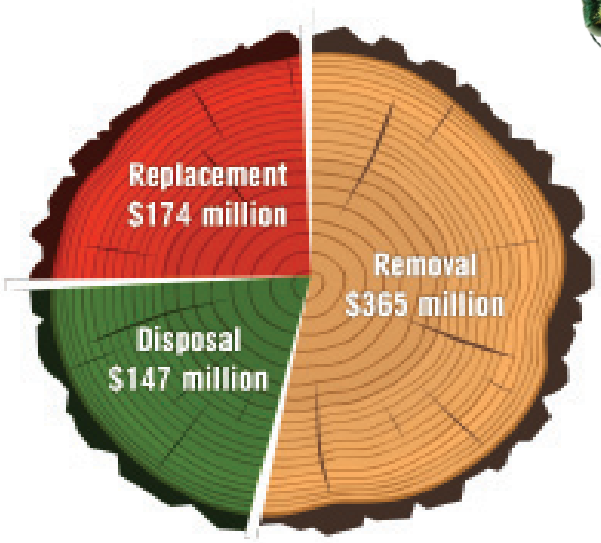
Nebraska has previously experienced widespread tree mortality. In the 1960s, Dutch elm disease decimated the iconic American elm and, more recently, pine wilt continues to ravage our most planted conifers. Yet,

Cost to Taxpayers



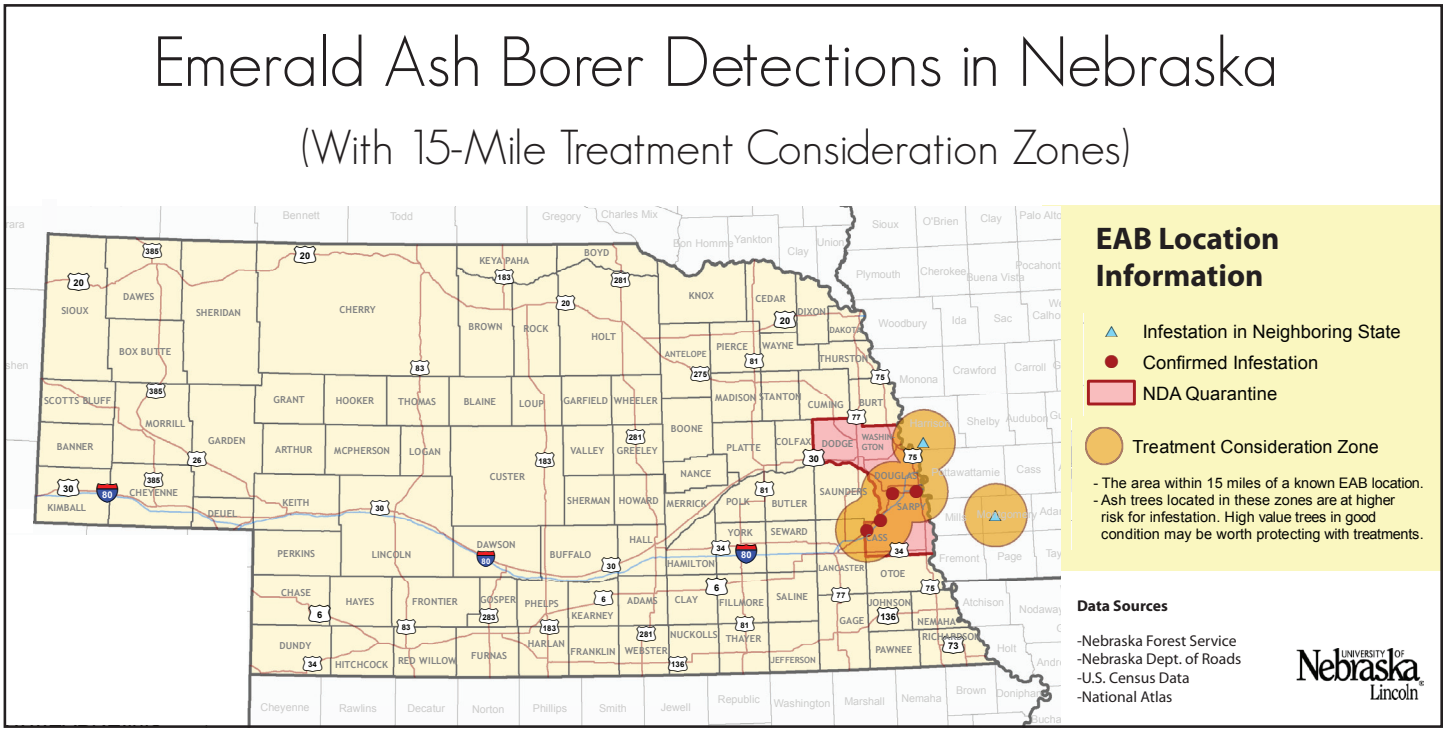
256,000 trees lost | Cost: $275 million

Cost to Homeowners



640,000 trees lost | Cost: $686 million

Source: Nebraska Forest Service. NFS used two surveying projects to arrive at the estimated total number of ash trees in the state. Then, based on industry averages for tree removal, disposal, and replacement, arrived at a total of nearly $1 billion in total state damages from EAB. NFS believes costs represented in this graphic to be conservative estimates.



experts say, EAB is different and worse because:

- EAB kills every North American species of ash, unlike the nematode at the heart of pine wilt, which prefers Scotch pine. (EAB has been found elsewhere in white fringetree, but this is not a commonly planted tree in Nebraska.)
- Infested ash become increasingly brittle as they deteriorate, making the trees hazardous to remove, susceptible to falling in the wind, and posing a threat to utility lines, roads, property, and people.
- EAB is hard to detect until damage is apparent. The beetles are not drawn to pheromone traps often set out to ensure early detection of insect pests. This allows them to become well-established prior to the first signs of tree decline.
- Insecticides are not effective in controlling EAB populations.

Waiting and watching in Nebraska

As EAB tore through other states, Nebraska officials had the opportunity to see the damage and how affected states responded. According to the Nebraska Forest Service, the experience of other states favors a proactive response.

This response includes (1) removing older, unhealthy ash trees prior to EAB's arrival; (2) treating a percentage of trees targeted for future removal to delay their mortality after EAB is confirmed in a community; and (3) swiftly removing dead and dying trees. This approach spreads out the costs over a longer time frame, preserves canopy while newly planted trees grow, slows the rate of EAB spread, and reduces the risk to people and property from falling trees.

If no action is taken to manage EAB, 10 percent of ash trees are typically killed in the first four years after EAB is discovered. Yet, years six through eight after identification concern state experts most. That's when communities experience the "death curve," a massive uptick in dead trees that has overwhelmed municipal budgets in the earlier affected states.

In 2006, representatives from both public and private sectors formed the Nebraska Emerald Ash Borer Working Group to craft a state EAB response plan. Updated in 2015, the full plan can be found online at: https://nfs.unl.edu/NebraskaEABResponsePlan.pdf.

The Nebraska Department of Agriculture (NDA) and the Game and Parks Commission are members of the EAB working group, along with the University of Nebraska departments of Entomology and Agronomy and Horticulture, the Nebraska Forest Service, and

the Nebraska Statewide Arboretum. Additionally, the U.S. Department of Agriculture (USDA), trade groups representing arborists and nurseries, and the Arbor Day Foundation participate.

Now that EAB has been found in Nebraska, NDA plays the lead role in issuing quarantines and also responding to requests from communities and landowners when they suspect EAB in their trees.

Going forward after detection

As of August 2018, EAB infestation has been confirmed at two locations in Omaha, in Greenwood, and Mahoney State Park. Five counties are currently under state and federal quarantines: Douglas, Dodge, Cass, Washington, and Sarpy. Ash and certain other hardwood materials cannot be transported out of quarantined areas. Quarantine guidelines can be found online: www.nda.nebraska.gov/plant/entomology/eab.

The area within a radius of 15 miles from a known EAB location falls within a "treatment consideration zone." Within these zones, ash trees are at higher risk for infestation and property owners with high value ash trees should decide whether to treat or remove their trees.

The Environmental Trust has awarded grants to the Nebraska Statewide Arboretum, which has funded EAB activities by private groups in Lincoln and Omaha. Both Lincoln and Omaha have allocated municipal funding to address publically owned trees in their communities. In 2017, Lincoln removed 600 ash trees.

From a statewide perspective, two measures to fund an EAB response have been introduced in the Legislature. In 2015, LB 461 proposed appropriating $3 million beginning in fiscal year 2015-16 and every year thereafter through a pre-existing but unfunded state program for tree removal, disposal, and replacement. An identical measure, LB 71, was introduced in 2017. Neither measure passed.

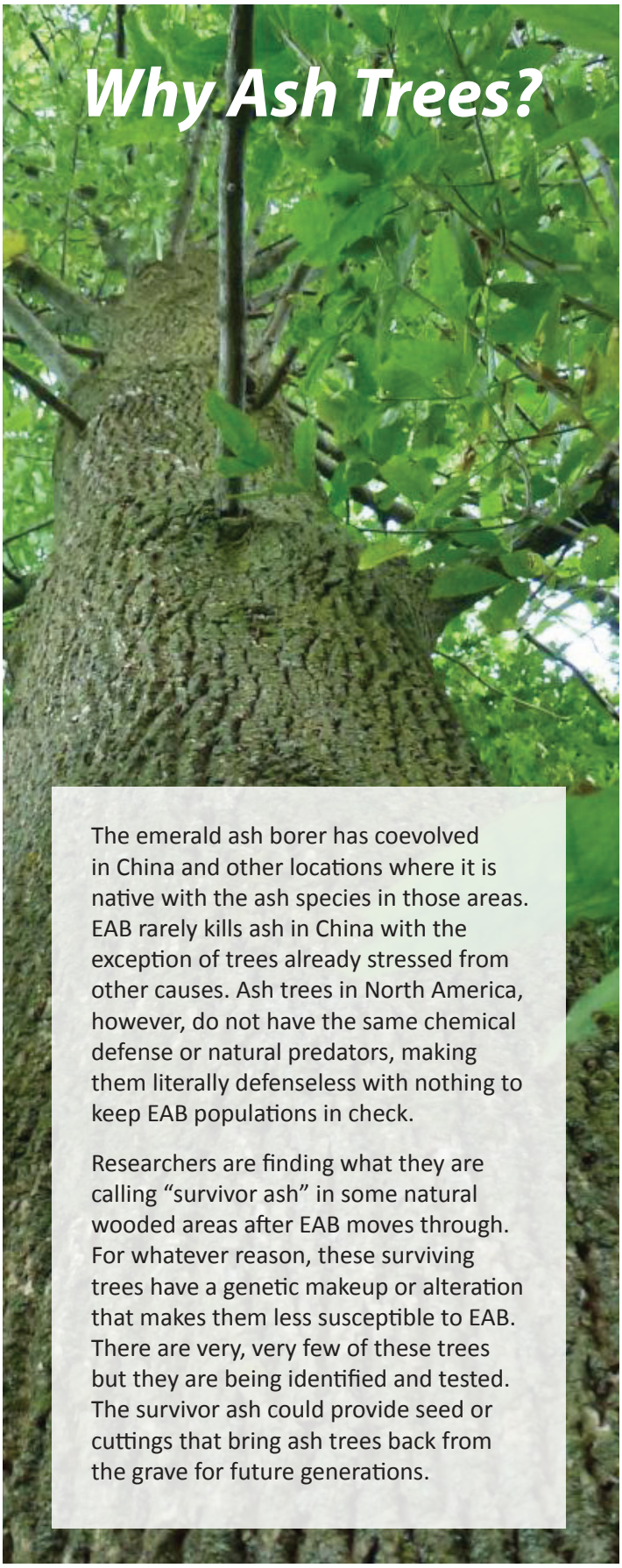
For more information

Nebraska's EAB webpage: www.EABNE.info.

Nebraska Forest Service, https://nfs.unl.edu/.

To report an EAB sighting, https://nfs.unl.edu/report-eab.

For a list of alternative trees to plant, https://nfs.unl.edu/landscapetrees.



Why Ash Trees?

The emerald ash borer has coevolved in China and other locations where it is native with the ash species in those areas. EAB rarely kills ash in China with the exception of trees already stressed from other causes. Ash trees in North America, however, do not have the same chemical defense or natural predators, making them literally defenseless with nothing to keep EAB populations in check.

Researchers are finding what they are calling "survivor ash" in some natural wooded areas after EAB moves through. For whatever reason, these surviving trees have a genetic makeup or alteration that makes them less susceptible to EAB. There are very, very few of these trees but they are being identified and tested. The survivor ash could provide seed or cuttings that bring ash trees back from the grave for future generations.