

2017 FOREST HEALTH HIGHLIGHTS: BLACK HILLS NATIONAL FOREST

Kurt Allen, Entomologist
Kendra Schotzko, Entomologist
Jim Blodgett, Pathologist
Al Dymerski, Forestry Technician

8221 S Highway 16, Rapid City, SD 57702
phone: 605-343-1567; kallen@fs.fed.us

- Mountain pine beetle continues to be the most frequent damage agent found across the forest, with 2,400 acres killed in 2016 compared to 16,000 killed in 2015 (**Fig. 3**). These numbers are taken from remote sensing techniques which are a year behind where the beetles are. Based on 2016 ground surveys done in the fall, mountain pine beetle-caused mortality of ponderosa pine will continue to decline in 2017. It appears the mountain pine beetle epidemic in the Black Hills has subsided, and that populations have returned to endemic levels. Preventive spraying of high value trees in campgrounds and landscape level thinning of forest stands have provided protection to remaining trees where these treatments have been implemented (**Fig. 1**).



Figure 1. Stands affected by mountain pine beetle in the Black Hills National Forest.

- Wood borer numbers have been high over the past few years, largely due to high levels of dead trees created by recent mountain pine beetle mortality. Borers do not attack live trees and actually compete with mountain pine beetles in infested trees for the same food resource.
- Pine engraver beetles (*Ips* spp.) are frequently found throughout the forest (**Fig. 2**). They often attack trees simultaneously with mountain pine beetle in addition to attacking other stressed or weakened trees. Mortality caused by engravers appeared to be increasing this past year, with many larger spots of mortality occurring, particularly on the Wyoming portion of the forest.

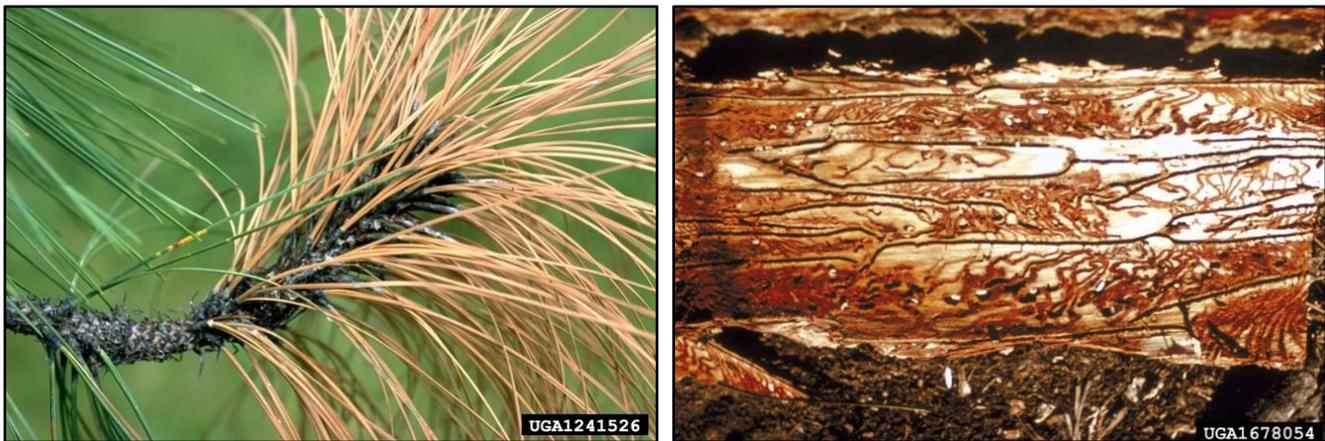


Figure 2. Diplodia shoot blight and canker disease (left) and *Ips* galleries (right). Photos by S. Hagle (left) and D. McComb (right), USDA Forest Service, Bugwood.org.

- Diplodia shoot blight and canker disease produced scattered branch mortality in crowns and some tree mortality of ponderosa pine throughout the forest (**Fig. 2**). More extensive branch mortality with some tree mortality was observed in the Northern Hills District. This disease can cause tree mortality, but repeated outbreaks are often required.
- Sooty bark canker continues to be the most damaging agent in aspen stands, followed by *Cytospora* canker and bronze poplar borer. White mottled rot is damaging in select aspen stands.
- White pine blister rust, an invasive fungal disease, recently killed three of the now 28 known live limber pine (*Pinus flexilis*) on USDA-Forest Service land (on and near Black Elk Peak). Six of the trees were infected with the rust, but infected branches were removed from four trees. Two trees have stem cankers that cannot be removed. Only two trees are large enough to be infested by mountain pine beetle. Verbenone pouches are being applied to protect the larger trees.

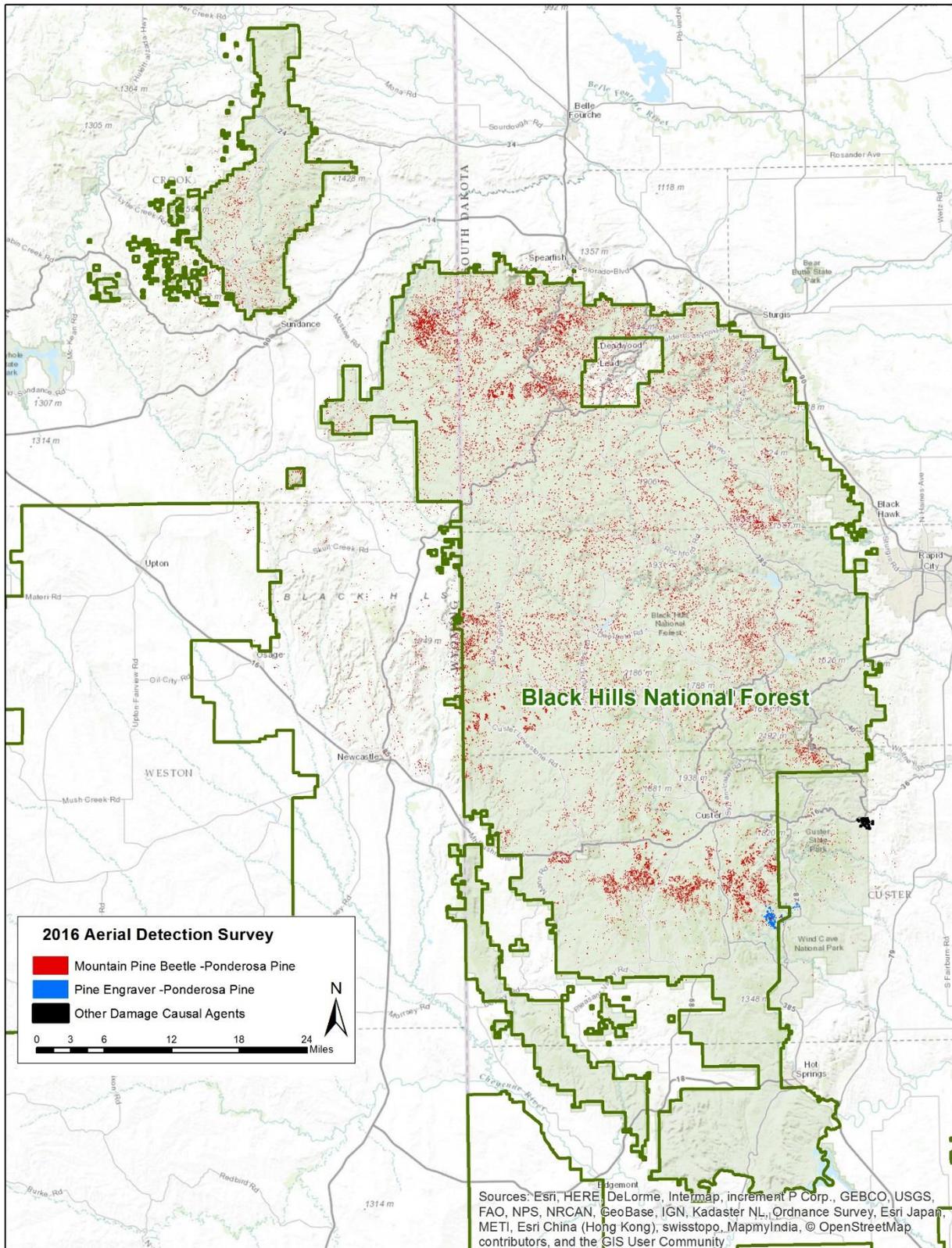


Figure 3. Aerial detection survey map of the Black Hills National Forest, 2016.