

# Mapping Forest Risk Associated with Beech Bark Disease

Andrew M. Liebhold<sup>1</sup>, Randall S. Morin<sup>1</sup>, Andrew Lister<sup>2</sup>, Kurt W. Gottschalk<sup>1</sup>,  
Eugene Luzader<sup>1</sup>, and Daniel Twardus<sup>3</sup>

<sup>1</sup>USDA Forest Service, Northeastern Research Station,  
180 Canfield St., Morgantown, WV 26505 USA

<sup>2</sup>USDA Forest Service, Northeastern Research Station, Forest Inventory and Analysis,  
11 Campus Blvd., Suite 200, Newtown Square, PA 19073 USA

<sup>3</sup>USDA Forest Service, Northeastern Area State and Private Forestry,  
180 Canfield St., Morgantown, WV 26505 USA

## Abstract

Beech bark disease is an alien pest species complex consisting of the scale insect, *Cryptococcus fagisuga*, and at least two species of *Nectria* fungi, *N. coccinea* var. *faginata* and *N. galligena*. The scales typically achieve large numbers feeding on sap in the inner bark and allow the pathogenic *Nectria* fungi to invade the xylem, often resulting in dieback or tree mortality. The disease was apparently introduced to North America near Halifax around 1890 and has been slowly expanding its range. As this disease invades new areas, large proportions of American Beech, *Fagus grandifolia*, are often killed. In order to plan for the management of beech bark disease in the future, there is a need to delimit the distribution of susceptible stands in areas that are currently uninfested. American Beech has a very large range and beech bark disease has only invaded a fraction of that area. While the greatest concentrations of this tree species occur in northeastern North America, this species exists through much of the Southeast as well. We expect that the impacts of this disease are likely to increase in the future.