

THE BIOGEOGRAPHY OF BEECH BARK INVASION OF N. AMERICA

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Beech bark disease was accidentally introduced to Nova Scotia from Europe around 1900 and has since spread southwestward into New England, New York, Pennsylvania, and West Virginia. Spatial analysis of historical records of the disease spread in N. America indicates that it has maintained an average radial rate of spread of 19.3 km/year \pm 0.82 km/year. This slow rate of spread is presumably due to the limited dispersal capabilities of beech scale insects. The geographical distribution of American beech was mapped via krigging of ca. 20,000 forest inventory plots. The greatest concentration of beech is in the Adirondack Mountain region of New York though smaller concentrations existed in Maine, New Hampshire, Vermont, West Virginia, and northern Pennsylvania. Beech also exists at very low levels over a large range extending through most forested regions of the eastern U.S.A. There is no evidence that beech bark disease spreads faster in portions of N. America with higher concentrations of host trees. Comparison of forest inventory data with historical records of beech bark disease expansion indicates that the proportion of beech basal area that is dead or dying is greatest in newly infested stands; after the disease has been present in a stand for many years, beech mortality rates tend to diminish slightly.

Evans, Celia A., Lucas, Jennifer A. and Twery, Mark J. 2005. **Beech Bark Disease: Proceedings of the Beech Bark Disease Symposium.** Gen. Tech. Rep. NE-331. Newtown Square PA, US. Department of Agriculture Forest Service, Northern Research Station. 149 p.

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