

Pest Alert

Beech Leaf Disease

Beech leaf disease (BLD) is a novel disease affecting the American beech (*Fagus grandifolia*) in North America. Symptoms of BLD have also been observed on European (*F. sylvatica*), Oriental (*F. orientalis*), and Chinese (*F. engleriana*) beech species, which are occasionally planted as ornamentals. The disease is found in areas throughout the northern edge of the range of the American beech. Recent detections in tree nurseries have caused significant concern among forest managers, homeowners, and nursery growers. BLD symptoms are caused by a newly recognized subspecies of the anguinid nematode, *Litylenchus crenatae mccannii*. Nematode infection mechanisms are not fully understood, but research indicates the nematode is associated with buds and leaves of beech of all age classes.

Identification and Description

Early symptoms of BLD include discolored stripes or bands between the lateral veins of leaves, which are visible immediately upon bud break in the spring (fig. 1). Affected leaves may be unevenly distributed in the lower canopy. Banding is most apparent when viewed from below and looking upward into the canopy. Leaves with severe symptoms are heavily banded, shrunken, and crinkled with a thickened, leathery texture (fig. 2), which often leads to



Figure 1—Banding appearance and shrunken leaves associated with beech leaf disease. Courtesy photo by Cleveland Metroparks.



Figure 2—Banding appearance associated with beech leaf disease. Courtesy photo by Tom Macy, Ohio Department of Natural Resources.

chlorotic banding later in the season (fig. 3). Aborted bud development and premature leaf drop result in a thinning of the canopy cover over time. Tree mortality within 2 to 7 years has been observed in all age classes but appears to be more common for smaller trees (less than 5 inches diameter at breast height).

Range

Symptoms of BLD were first observed in northeast Ohio in 2012 and have since been detected in Connecticut, Delaware, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, New York, North Carolina, Pennsylvania, Rhode Island, Vermont, Virginia, West Virginia, and the Canadian Province of Ontario (fig. 4). Recent increases in BLD detection may be a result of expanded search efforts in addition to true spread.

BLD has spread throughout the Northeastern United States except for a few counties in northern New England. The range now appears to be spreading toward the west and south based on the locations of new county detections in recent years. The nematodes are possibly dispersing aerially by wind and precipitation. Additional nematode dispersal modes currently being studied include insect and avian vectors as well as human-mediated movement. There is likely a delay between initial nematode infestation and BLD detection as *L. crenatae* has occasionally been confirmed in asymptomatic tissue at the molecular level before symptoms are observed.

Management

No operational, forest-scale treatments are currently available for trees affected by BLD. However, several chemical products, most notably those containing fluopyram or thiabendazole, have demonstrated efficacy in reducing symptoms in individual trees. The Forest Service is also evaluating phosphite products for potential use. These treatments may be suitable for high-value landscape trees, but they are not practical for broad forest applications due to cost, labor, and the need for repeated treatments. Common mitigation strategies remain important for reducing spread, including destroying infected plant material after removal and avoiding transport of soil or beech branches, twigs, leaves, or seedlings from affected areas.



Figure 3—Advanced symptoms of beech leaf disease with chlorotic striping. Forest Service photo by Cameron McIntire.

Reporting

If you observe symptoms of BLD, please contact your State or local forest health specialist.

For more information, contact your local forest health specialist or the authors:

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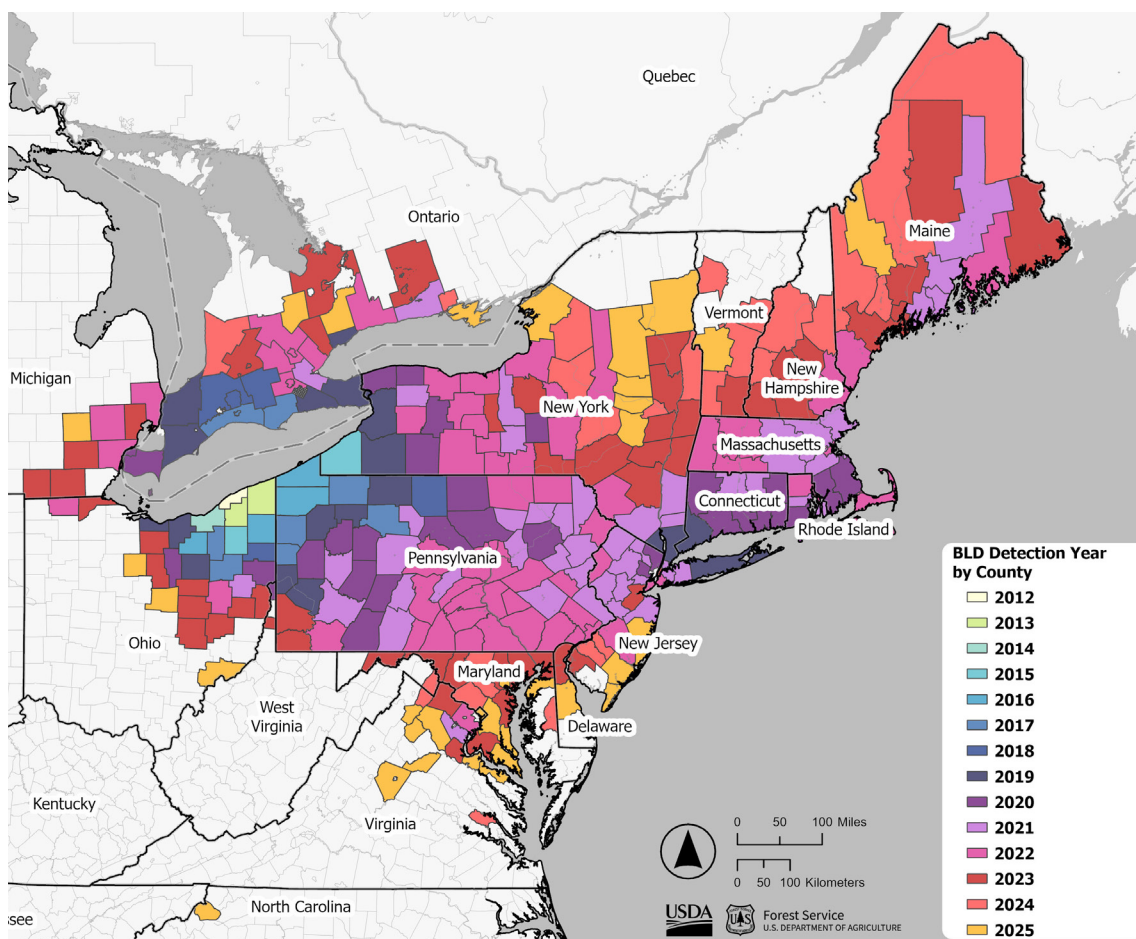


Figure 4—Known range of beech leaf disease, from its first detections in 2012 to latest detections as of 2025. Data are presented at the county scale; county-level detections range from a single infected tree to countywide spread.

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