

SAVING BUTTERNUT

Carolyn C. Pike¹, Martin Williams², Andrea Brennan³, Keith Woeste⁴, James Jacobs⁵, Sean Hoban³,
Melanie Moore⁵, Jeanne Romero-Severson⁶

¹ USDA Forest Service Eastern Region State and Private Forestry, West Lafayette IN

² Canadian Forest Service, Ottawa ON

³ The Morton Arboretum, Lisle IL

⁴ USDA Forest Service Northern Research Station, West Lafayette IN

⁵ USDA Forest Service Forest Health Protection, St Paul MN

⁶ Professor, University of Notre Dame, South Bend, IN 46556

Butternut is a relatively uncommon hardwood tree native to eastern North America. Butternut abundance has declined over the past fifty years, primarily due to the invasive pathogen *Ophiognomonia clavigignenti-juglandacearum* and loss of suitable habitat for regeneration. Despite steep population declines, genetic diversity range-wide remains fairly high. While there is little evidence for even moderate resistance in native butternut, hybrids with Japanese walnut, a closely related species, display enough resistance to persist on the landscape without protection and bear abundant nut crops year after year. Cryostorage of native embryogenic axes has yielded promising initial results as a strategy for gene conservation, but additional action is needed to conserve the remaining native gene pool. We describe a practical recurrent selection strategy for resistance breeding in butternut, using sources of resistance from naturally occurring hybrids, hybrids in research orchards, sources of native trees from as many regions as possible, and targeted genotyping.