

Trees of the Huron River Watershed in a Changing Climate

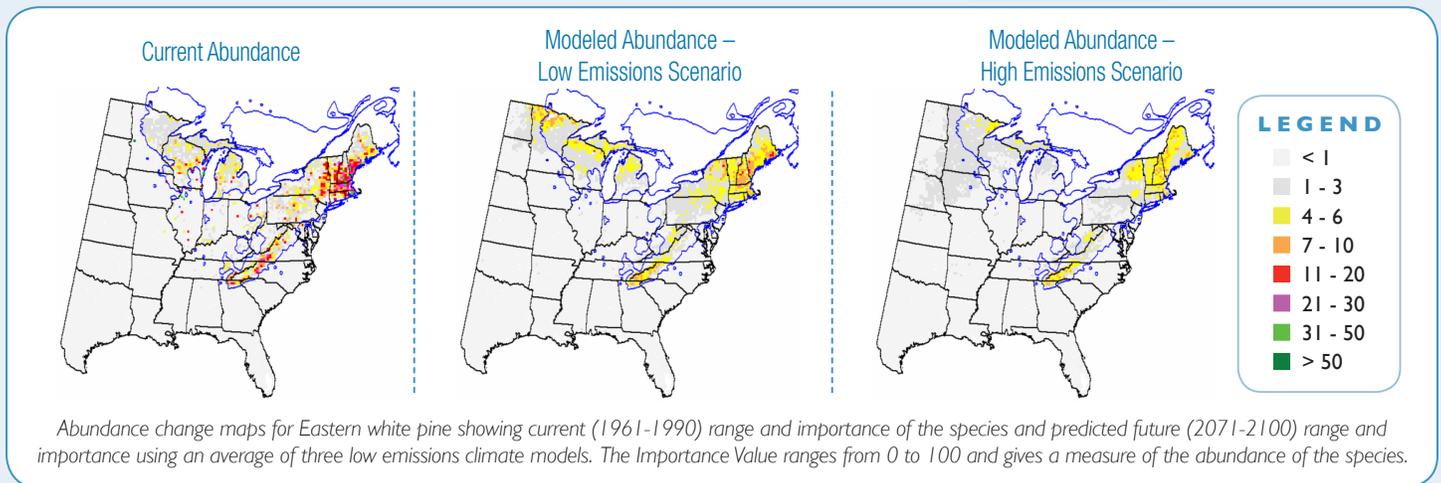
Eastern White Pine *Pinus strobus*

Description

Eastern white pine is a very large, long lived and fast growing conifer which is frequent from Detroit northward but is also often found planted as an ornamental tree in southern Michigan. It grows well on a variety of soil types from, poorly to well drained, and is moderately shade tolerant. White Pine is fire resistant and dependant. It is the only pine that can compete with hardwoods on poor soils due to its rapid growth, shade tolerance and large size.



Change Maps for Eastern White Pine¹



Implications of Climate Change

Models predict that the frequency of eastern white pine will decrease in southern Michigan due to increased competition from hardwoods and the absence of fire which will prevent their natural regeneration. The tree is likely to see declines in dry communities as they become drier but may be favored in more mesic communities as they dry (Barnes, 2009). The species may remain a good choice for landscaping because of its ability to grow in many soil and moisture conditions.

Natural Communities Associations²

Canopy dominant or associate in oak pine barrens. Canopy

associate in some occurrences of southern dry forest and dry mesic southern forest.

Vulnerability of Natural Communities³

Oak pine barrens are already rare systems with isolated occurrences in SE Michigan. The community may benefit from increased plant productivity and disturbance, however, its low dispersal potential and predicted range movement north will likely lead to declines in the Huron. Dry southern forest communities may be less vulnerable because of their wide extent and ability to tolerate warmer, drier conditions. While these communities are likely to persist, hardwoods are expected to increase and the conifer component decline.

¹Prasad, A. M., L. R. Iverson., S. Matthews., M. Peters. 2007-ongoing. A Climate Change Atlas for 134 Forest Tree Species of the Eastern United States [database]. <http://www.nrs.fs.fed.us/atlas/tree>, Northern Research.

²Michigan Natural Features Inventory. www.mnfi.anr.msu.edu/communities

³Lee, Y., M. A. Kost, J. G. Cohen, and E. H. Schools. 2012. Climate Change Vulnerability Assessment and Adaptation Strategies for Natural Communities in Michigan, Focusing on the Coastal Zone. Michigan Natural Features Inventory Report No. 2012-18, Lansing, MI.