

Trees of the Huron River Watershed in a Changing Climate

Swamp White Oak *Quercus bicolor*

Description

Long-living, fast-growing swamp white oak can be found throughout the southern Lower Peninsula of Michigan with some high density pockets. Its preferred habitat is lowlands, stream edges, and swamps subject to flooding and it can tolerate moderate shade. The species is most often a minor component of the canopy of the natural communities it occurs within. The sweet acorns are important biologically to wildlife, particularly ducks, and the wood has commercial value.



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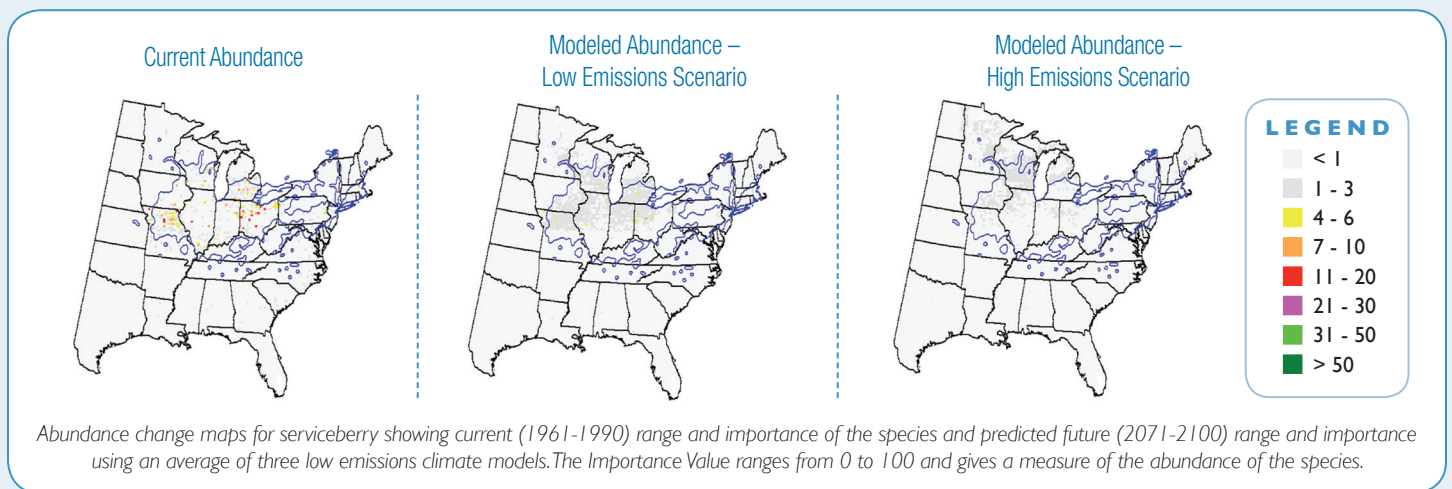


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Change Maps for Swamp White Oak¹



Implications of Climate Change

Climate models predict the range of swamp white oak to move northward. Because southeast Michigan is at the current northernmost extent of this species' range, models show its persistence in the area as climate changes though its importance value may decrease in some locations. The species is considered moderately adaptable. Drier warmer conditions will affect wet habitats preferred by swamp white oak.

Natural Communities Associations²

Canopy dominant in wet-mesic flatwoods and canopy associate in floodplain forest and southern hardwood swamp.

Vulnerability of Natural Communities³

Swamp white oaks occur in several communities with wet soils. Significant shifts in these communities are anticipated as the climate in the area becomes warmer, with drier summers. As moisture-dependent habitats, with fragmented distribution, wet-mesic flatwoods and southern hardwood swamp are vulnerable to climate change. Floodplain forests are expected to experience more frequent and larger flood events which may help swamp white oak persist in this natural community type.

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.