

Trees of the Huron River Watershed in a Changing Climate

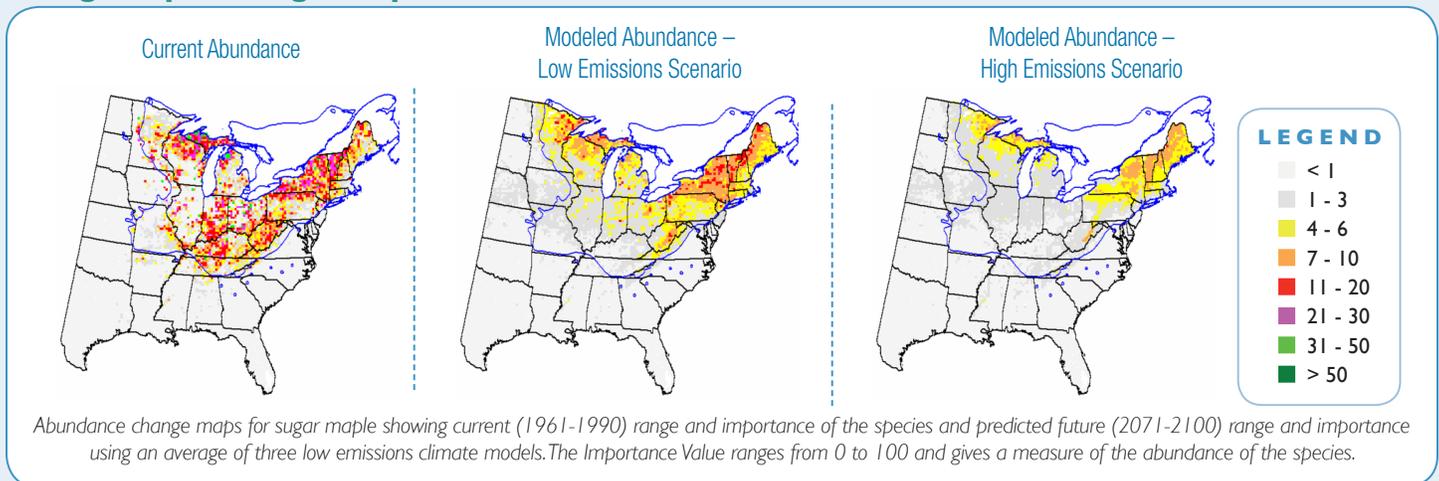
Sugar Maple *Acer saccharum*

Description

Sugar maple is found throughout the central Midwest states with its highest abundance in the north. It is a highly shade tolerant, long-lived, slow growing species that is found more in cool climates on rich, moist, well-drained sites. This species does best on highly fertile soils and can form almost pure stands. It is a keystone species of the mesic southern forest and therefore very important ecologically. It is also very economically valuable for timber and maple syrup production in the upper Midwest, New England and Canada.



Change Maps for Sugar Maple¹



Implications of Climate Change

Declines in this species have already been noted. Climate models show a dramatic and nearly complete loss of this species throughout the south-central Midwest including Michigan except in its northernmost latitudes. Under most scenarios, sugar maple will be far less abundant in the Huron River watershed. Given that both sugar maple and American beech are likely to decline in the area, the composition of mesic southern forest should be considered at risk and monitored for these and other changes. For planting and restoration purposes, red maple may be the best alternative.

Natural Communities Associations²

Canopy dominant in mesic southern forest. Canopy associate

in floodplain forests (above influence of floodwaters), southern hardwood swamp, and wet mesic flatwoods.

Vulnerability of Natural Communities³

Mesic southern forests, in which sugar maple are a dominant canopy species, are likely to expand in range northward. However, the sensitivity of sugar maple indicates that this species will not do well in lower Michigan and may only be a significant part of this community in its northernmost latitudes. Under drier, warmer conditions southern hardwood swamps and wet mesic flatwoods will be negatively impacted as local hydrology is altered.

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.