# Climate Resilient Communities

Huron River Watershed Council

## Trees of the Huron River Watershed in a Changing Climate

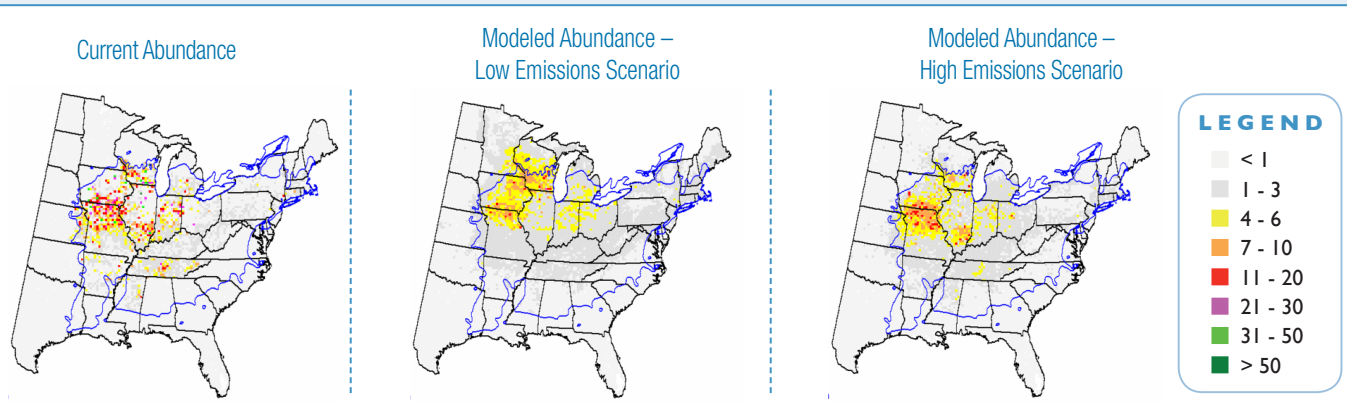
# Hickory *Carya spp.*



### Description

There are four hickory species native to Michigan. Hickories are large, long-lived trees with high quality wood. Shagbark Hickory (*Carya ovata*) and Pignut Hickory (*Carya glabra*) are the most commonly represented species in the Huron. Hickories can thrive in a variety of habitats. They tend to prefer well drained, upland sites. Despite their preference for good drainage, hickories grow best in a humid climate, adapting successfully to a wide range of temperature extremes and rainfall amounts.

### Change Maps for Hickory[1]




*Abundance change maps for hickories showing current (1961-1990) range and importance of the species and predicted future (2071-2100) range and importance using an average of three low emissions climate models. The Importance Value ranges from 0 to 100 and gives a measure of the abundance of the species.*

### Implications of Climate Change

The climate change models predict little change in the native range of the hickories, perhaps because they already exhibit a wide adaptability to warmer, southern climates. It may prove to be one of the few Michigan native tree species that can cope with warming trends with little impact on survival. Increased precipitation in spring may support hickories in flood prone areas.

### Natural Communities Associations[2]

Canopy dominant in dry-mesic southern forest and dry southern forest, wet mesic flatwoods. Canopy associate in foodplain forest, mesic southern forest and lakeplain oak openings, oak openings.

### Vulnerability of Natural Communities[3]

Dry to mesic southern forest systems are expected to have low vulnerability to climate change. Longer growing season and warmer temperatures may increase productivity. Because these systems are widespread, dispersal is more likely except in areas where fragmentation impacts dispersal potential. Communities supporting hickory that have high moisture requirements and/or occur as isolated occurrences such as wet mesic flatwoods and lakeplain oak openings have high vulnerability. Oak openings may benefit from climate change.

[1] Prasad, 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.

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

[3] Lee, 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.