Climate Resilient Communities

Huron River Watershed Council

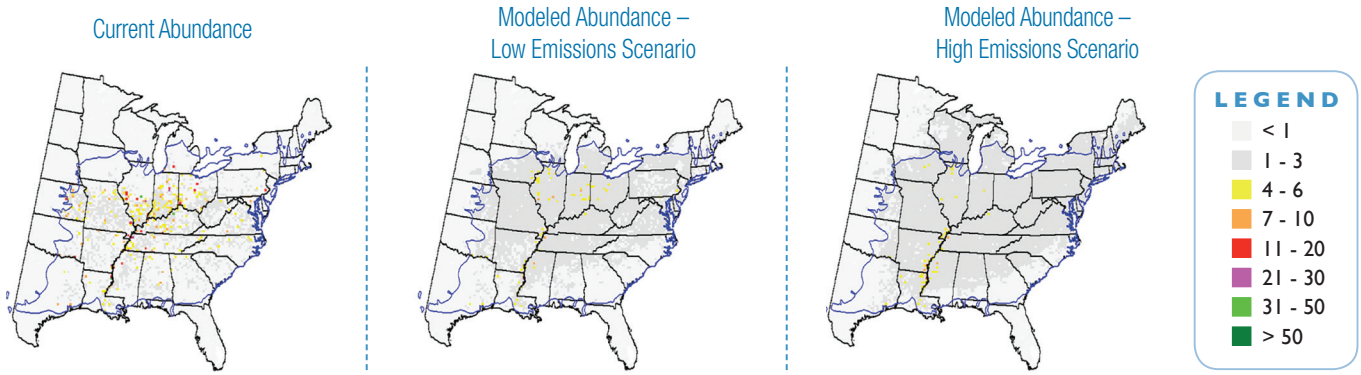
Trees of the Huron River Watershed in a Changing Climate

American Sycamore *Platanus occidentalis*

Description

The American sycamore is a large, fast-growing tree common in eastern deciduous forests and as a landscape tree. In Michigan, sycamore occurs most commonly, and in greatest abundance, in the southern Lower Peninsula. Common along streams and in bottomlands, it can grow on a variety of soils but prefers moist habitats where it will not be inundated for more than 2 weeks. Sycamore is also found in old fields and is considered a pioneer species. Sycamore is a common landscape tree.

Change Maps for American Sycamore[1]



Abundance change maps for serviceberry 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

Sycamore is at the northern most extent of its range in southern Lower Michigan. Climate change models predict the species range will expand northward and that sycamore will persist in southeast Michigan with similar importance as it maintains today. Sycamore is considered adaptable though increased precipitation during the growing season may negatively impact the species at some sites. The species is vulnerable to other factors such as invasive species, increased fire and disease which are expected to increase under climate change.

Natural Communities Associations[2]

Canopy associate in southern hardwood swamps, floodplain forests, and wet-mesic flatwoods

Vulnerability of Natural Communities[3]

Under drier, warmer conditions southern hardwood swamps and wet-mesic flatwoods will be negatively impacted as local hydrology is altered. Floodplain forests, due to their restriction to river channels, have limited migration potential. However, in these systems sycamore may benefit or suffer as flood regimes change depending on the timing and duration of flooding.

[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.