

Trees of the Huron River Watershed in a Changing Climate

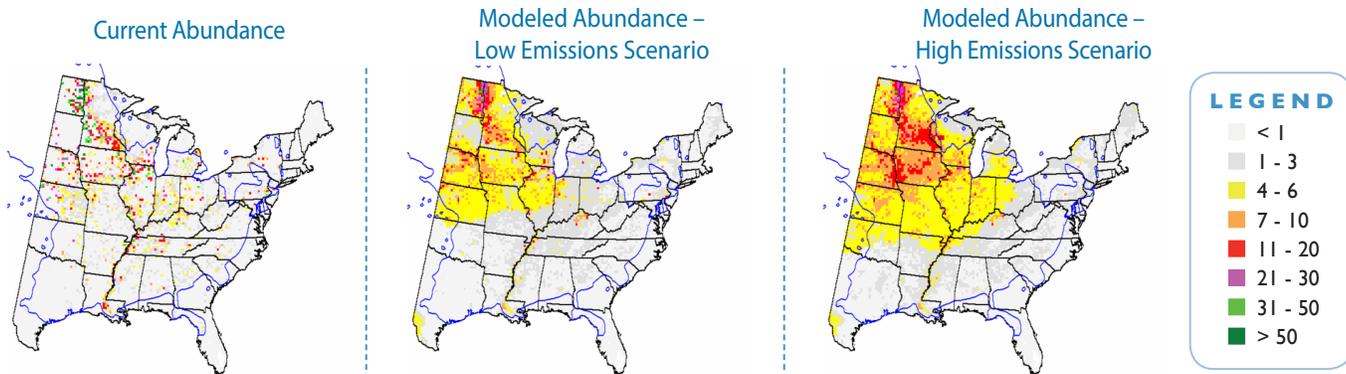
Boxelder *Acer negundo*

Description

Boxelder is a very common aggressive native maple species that is often encouraged by disturbances such as flooding and silting and can outcompete many native species. It is a shade intolerant, short lived species. It does have ecological value in terms of the number of insects it hosts, however it has become a weedy native and threatens fire dependent natural communities through invasion and shading.



Change Maps for Boxelder¹



Abundance change maps for boxelder 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

According to the model predictions this species may see significant increases in abundance, particularly in its northern and western range in the Midwest. Due to its tolerance of a wide range of conditions and ability to colonize disturbed areas, boxelder may be a species that will not only survive climate change, but may benefit. It may require management to support maintenance of other, more vulnerable native species.

Natural Communities Associations²

Canopy associate in floodplain forests.

Vulnerability of Natural Communities³

Floodplain forests are restricted to river channels and therefore have limited migration potential. Forests may experience more frequent or larger flood events but it is not known whether this will positively or negatively impact this community. If dryer, warmer summers result in lower groundwater tables and baseflows, this moisture-dependant community could be negatively impacted. Because boxelder is a disturbance species, increased flooding, drought, fire and pests, it may become a more dominate species in floodplain forests.

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.