

2013

Shagbark Hickory (*Carya ovata*) Status at the Gordon Natural Area

Carl Cummins

West Chester University of Pennsylvania

Greg Turner

West Chester University, gturner@wcupa.edu

Follow this and additional works at: http://digitalcommons.wcupa.edu/gna_shd_series



Part of the [Forest Biology Commons](#)

Recommended Citation

Cummins, C., & Turner, G. (2013). Shagbark Hickory (*Carya ovata*) Status at the Gordon Natural Area. Retrieved from http://digitalcommons.wcupa.edu/gna_shd_series/1

This Poster is brought to you for free and open access by the Shagbark Hickory Distribution Study at Digital Commons @ West Chester University. It has been accepted for inclusion in Shagbark Hickory Distribution Study Documents by an authorized administrator of Digital Commons @ West Chester University. For more information, please contact wcressler@wcupa.edu.



Shagbark Hickory (*Carya ovata*) Status at the Gordon Natural Area

Carl Cummins & Greg Turner

Department of Biology, West Chester University, West Chester, PA



Abstract

Among the more successfully regenerating native trees in the Delaware Valley, which includes those at the Gordon Natural Area (GNA), is Shagbark hickory (*Carya ovata*). This species has been able to regenerate due to its resistance to many pathogens and pests, unlike such other natives as white ash (*Fraxinus americana*), flowering dogwood (*Cornus florida*), and many oak (*Quercus*) species. To determine shagbark's local status, the species was surveyed in the GNA. 216 trees were found, equaling almost 3 trees per ha, in mostly clumped but widespread distributions. Nearly half were saplings (i.e. DBH <15 cm), though many were large older trees, and all were healthy. Unlike many native species, shagbark is recruiting well and may thus represent a greater proportion of native hardwoods at the GNA in the future.

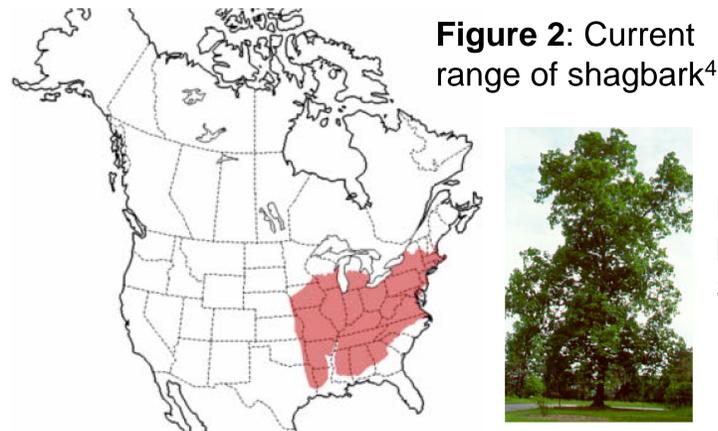


Figure 2: Current range of shagbark⁴



Figure 3: Mature Shagbark⁵

Study Area & Methods

The study was conducted in upland and riparian habitats at the Gordon NA. Every shagbark tree found in the preserve (see map, Figure 5) were located using a walking survey. Each tree was numbered and given coordinates using a GPS device, and from these each shagbark was mapped relative to one another. Tree sizes were determined by measuring diameter at breast height (DBH) for each, and were then placed into size classes that include saplings and canopy trees. Each tree crown was observed and given a subjective measure of crown vigor (i.e. 0-5 where 0 = dead and 5 = very healthy).



Figure 1: "Shaggy" bark¹ (left) and leaves & fruits (right)².

Introduction

Shagbark is a key native tree species of eastern forests. It is slow growing and long-lived, and survives in a range of soil types. It provides valuable food and nesting sites for wildlife and mature trees produce strong, flexible wood that is commercially valuable for use as tool handles and for smoked food charcoal³. Because the tree is resistant to many pathogens and pests, and saplings are avoided by white-tailed deer, its importance is evident given that many native tree species are declining in the region. Given this importance, this study sought to assess the density, distributions, size, and health status of shagbark at the Gordon Natural Area, to help manage the species at the preserve into the future.

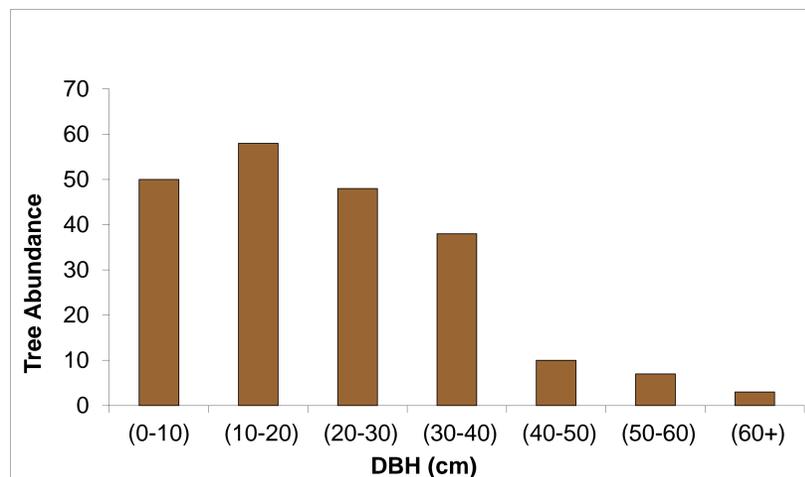
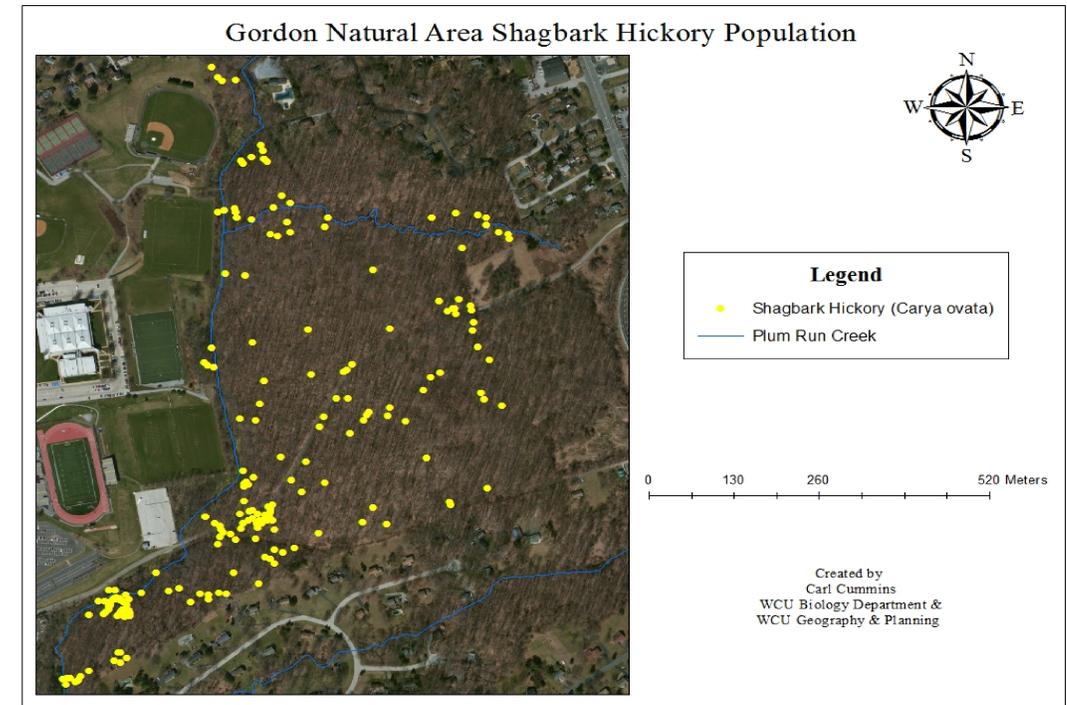


Figure 4: Shagbark frequencies per size class (cm) based on diameter at breast height (DBH).

Figure 5: Map of the forest study site showing each shagbark encountered.



Findings & Conclusions

- 216 trees were located = 3.2 trees per ha, with greatest abundance found in the Handle.
 - While low in density, shagbark was more abundant in the GNA forest than are most other natives.
 - Most were clustered in the Handle section of the forest, while others were randomly dispersed in the older Big Woods section and along portions of the southern preserve boundary.
 - Most trees were classed as saplings, but many were canopy trees, with more larger trees found in the Big Woods and along that southern boundary.
 - Most trees were healthy as only 17 / 216 received a crown vigor (CV) score < 5.
- Given our results, shagbark will likely become a more important native species at the GNA since many others are predicted to decline due to disease and pests. Further, shagbark may serve increasingly important roles of maintaining forest integrity (e.g. resisting storms) and by providing food and nesting/roosting sites for wildlife.

References

- (1) Accessed 3/13 at: <http://floridahillbilly.com/hickory-bark-syrup/>. (2) Gibson, A.L. 2012. Flora of Ohio. Accessed 3/13 at: http://floraofohio.blogspot.com/2012_09_01_archive.html. (3) Graney, D.L. 1990. *Carya ovata* (Mill.) K. Koch. Shagbark hickory. Accessed 3/20/13 at: http://www.na.fs.fed.us/pubs/silvics_manual/volume_2/carya/ovata.htm. (4) Accessed 3/13 at: <http://www.holidaykitchens.com/hkuniversity/Species/hickory.php>. (5) Accessed 3/13 at: http://www.oplin.org/tree/fact%20pages/hickory_shagbark/hickory_shagbark.html.

Acknowledgements

I thank the College of Arts & Sciences, West Chester University, for funding this study.