

Regeneration niche of Ozark chinquapin (*Castanea ozarkensis*) in native Ozark forests

Jennifer Rosen

Matthew Albrecht

Abstract

The chestnut blight fungus (*Cryphonectria parasitica*) appeared within the range of the Ozark chinquapin (*Castanea ozarkensis*) in the 1950's, causing a large scale die-back of its healthy upper canopy trees and reducing subsequent trees to multi-stemmed subcanopy shrubs. Efforts are underway to produce blight-resistant chinquapin seeds, estimated to take 20 – 30 years, so that the ecologically significant species can be re-introduced to areas it formerly grew before the blight proliferated throughout its range. The goal of this study was to quantify chinquapin seed predation, emergence, survival, and growth in a managed Ozark woodland. Seeds were planted throughout ten sites consisting of varying microhabitats (shrub canopy and open canopy), with half of the seeds being subjected to consumer accessibility. Consumers dramatically reduced seed emergence. Seeds were removed at faster rates in shrub than open microhabitats, and larger seeds were more likely to be consumed than smaller seeds. Soil pH and light availability did not correlate with higher seedling growth during the eight week study. Given the high rates of seed consumption, effective consumer exclusion may be necessary for future Ozark chinquapin restoration projects.