OS I-03

Effects of ash loss on forest vegetation: long-term monitoring at primarily undergraduate institutions (PUI's)

Jason S. Kilgore[1]*, Benjamin J. Dolan[2]

[1] *Washington & Jefferson College*
[2] *The University of Findlay*

Initially detected in North America in 2002, emerald ash borers (EAB, *Agrilus planipennis*) have since been detected in 29 US states and 2 Canadian provinces where the phloem-feeding beetle causes widespread mortality of all native ash (*Fraxinus* spp.). The loss of an entire plant genus from the forest flora is a major disturbance but with varying effects due to differences in ash dominance and remaining species. We are investigating impacts of changes in light availability on seedling density and composition, sapling growth rates, and invasive plant community. We utilize long-term research plots developed for the Permanent Forest Plot Project of the Ecological Research as Education Network (EREN), a consortium of over 230 primarily undergraduate institutions (PUI's). We developed variables to quantify ash condition (EAB Impacts Study) and understory light environment and plant community (cVeg); all protocols can be found online at erenweb.org. At each site, data are collected by faculty and undergraduate students; on-site meetings and web-based technologies are used to enhance interinstitutional communication. Although this project is recently (2012) initiated with variable EAB infestation and frequency of data collection at the seven sites, we have observed positive associations of ash loss with seedling density, proportion of shade-intolerant tree species in the understory, and invasive plant density. As EAB continues to spread through forests of North America and data from additional sites are contributed to this collaborative project, we expect to further elucidate the role of factors such as prior vegetation composition, soil differences, and geographic location.

Presenting Author: jkilgore@washjeff.edu