

WOOD-INFESTING INSECT ABUNDANCE AND COMMUNITY STRUCTURE IN RELATION TO BEECH BARK DISEASE

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The impacts of non-native forest insects and diseases on host tree species are measured extensively, yet impacts on other forest organisms are rarely quantified. The purpose of this research was to measure changes in wood-infesting insect communities in relation to beech bark disease. Beech bark disease causes mortality of American beech, producing a large increase in dead wood quantities within a stand in a relatively short time period. We propose that wood-infesting insects, as well as other insects collected when trapping wood infesting insects, may serve as useful study organisms for measuring changes in animal communities brought about by tree mortality associated with exotic pests and pathogens. Fifteen study sites were used during the summer of 2003; five sites each in beech forests with beech bark disease, beech forests without beech bark disease, and forests without beech in the Upper Peninsula of Michigan. Six flight intercept panel traps baited with ultra-high release ethanol lures were deployed in each study site. Traps were run from late May to early September and were emptied every two weeks. Trap contents were sorted into family groups for wood-infesting insects (Coleoptera: Scolytidae, Cerambycidae, Curculionidae, Buprestidae; Hymenoptera: Siricidae). In addition, another taxon consistently caught in these traps was also counted (Coleoptera: Elateridae). Preliminary data analyses revealed significant differences in scolytid abundance among site types, with beech bark disease sites having the lowest abundances over the course of the summer. In contrast, elaterids tended to be more abundant in sites with beech bark disease. Differences in wood-infesting insect abundances among site types are likely due to changes in dead wood quantity and quality brought about by beech bark disease caused tree mortality. Scolytids may be limited in their use of dead beech trees because of the presence of *Nectria* initiated cankers and necrotic tissues. Species identification is ongoing to further elucidate the impacts of beech bark disease on the community structure of wood-infesting insects.

Evans, Celia A., Lucas, Jennifer A. and Twery, Mark J. 2005. **Beech Bark Disease: Proceedings of the Beech Bark Disease Symposium.** Gen. Tech. Rep. NE-331. Newtown Square PA, US. Department of Agriculture Forest Service, Northern Research Station. 149 p.

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