

Poster Title: Land-use legacies and invasive exotic plants in a southern Appalachian forest

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Description of Poster:

In this study we considered the relationship between land-use history and the distribution of invasive exotic plants at the Bent Creek Experimental Forest 10 mi. southwest of Asheville in western North Carolina. Areas that were previously in cultivation and abandoned between 1900 and 1910 were compared with nearby sites that were not formerly cultivated. Various biotic and abiotic characteristics were compared between the sites to determine which aspects most influence invasibility. Among these, soil chemistry (total N, organic matter, P, K⁺, Ca⁺⁺, Mg⁺⁺, and pH) and texture were measured, as well as overstory community composition. Land-use history was found to play a major role in determining patterns of invasion at Bent Creek. Soil chemistry, particularly regarding the exchangeable cations (and total N and pH to a lesser extent), was important in explaining the presence and abundance of invasive plants. The level of these soil nutrients was strongly correlated with the overstory community composition, particularly the abundance of *Liriodendron tulipifera*. We suggest that the agricultural land-use history at Bent Creek may be affecting invasibility by causing elevated soil nutrient levels (especially exchangeable cations) as a result of nutrient cycling by the long-lived, early-successional tree species *L. tulipifera*. If this is indeed the case, the effect of land-use legacies on invasion at Bent Creek is actually a secondary result of succession rather than a direct effect of the former land use itself.

Theme: “*Invasive Plant Management and Treatment Options that Work*”

Poster Style: Hanging