# ESTABLISHMENT SUCCESS OF CONSERVATION TREE PLANTATIONS IN INDIANA

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In the Central Hardwood Forest region, variable success of privately-owned hardwood plantations has been attributed to competing vegetation and damage due to animal browse. Although specific silvicultural practices are known to mitigate these pressures, few studies have addressed how the management behavior of private landowners translates into establishment success. This research (i) examined landowner motivations for establishing hardwood plantations in Indiana between 1997 and 2001, (ii) characterized landowners according to the values they hold for their land, (iii) described the silvicultural practices employed within these plantations, (iv) quantified plantation establishment success, as defined by seedling survival and vigor, and (v) related these motivations, ownership characteristics, and silvicultural practices to overall plantation establishment success. Motivations to plant and ownership characteristics were assessed through a statewide telephone survey, through which each landowner provided detailed silvicultural histories. Field data were collected from 87 of these plantations to assess seedling survival, vigor, and abundance of surrounding vegetation. Landowners valued their land for the privacy it provides, as a place of residence, and as a legacy for future generations. They plant trees primarily to provide for future generations, provide food and habitat for wildlife, and to conserve the natural environment. Plantation establishment success was lowest on sites owned by citizens who did not value their land as a legacy for future generations. Many NIPF owners engaged in requisite behaviors to ensure plantation establishment success. Survival was highest on sites that were treated with herbicide prior to planting and had been mechanically planted. The percentage of trees with evidence of dieback was highest on sites at which browse protection measures had been used. Sites planted by a professional forester and those with herbicide applied subsequent to planting had a higher percentage of trees deemed free-to-grow.

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