

BROWSE RATES OF PLANTED OAK ON A RECLAIMED MINE

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Abstract—Horseshoe Mountain, a former mine site reclaimed in the 1990s, located in Claiborne County, TN, was planted in the late fall and winter of 2014 with white oak (*Quercus alba*), northern red oak (*Q. rubra*), southern red oak (*Q. falcata*), pin oak (*Q. palustris*), and chinkapin oak (*Q. muehlenbergii*). Prior to tree planting, soil compaction was relieved and then four different ground cover treatments (wildlife promoting, unpalatable to wildlife, herbicided, and control) were applied over three replicates (12 macroplots total; an area of about 23 acres). Sixty permanent FIA-style plots (24 feet radius) were installed in summer 2015 within the macroplots; all trees within the plots were measured for height, root collar diameter, vigor, and browse. Subsequent measurements were recorded twice a year until 2017; vegetation surveys were conducted on the same schedule. The probability of browse was found to be statistically significant in relation to the height of oaks in 2015. In the height class from 0.1-1.0 foot, 30 percent of 91 oaks were browsed; in the 1.1-2.0 feet height class, 29 percent of 253 oaks were browsed; in the 2.1-3.0 feet height class, 52 percent of 218 oaks were browsed; in the 3.1-4.0 feet height class, 52 percent of 23 oaks were browsed. When broken down by species, it was found that 40 percent of 113 *Q. muehlenbergii*, 38 percent of 269 *Q. rubra*, 38 percent of 113 *Q. palustris*, 48 percent of 25 *Q. falcata*, and 37 percent of 65 *Q. alba* were browsed.

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