

Outcalt, K.W.; Brockway, D.G. 2001. Response of a southern pine community to readjustment of stand structure. In: Abstracts of the 86th Annual Meeting of the Ecological Society of America; 2001 August 5-10; Madison, Wisconsin: 326 [Abstract].

OUTCALT, KENNETH W.¹ and DALE G. BROCKWAY.² ¹ USDA Forest Service, Athens, GA; ² USDA Forest Service, Auburn, AL. Response of a southern pine community to readjustment of stand structure.

Widespread treatments are needed to restore ecological integrity to southern forest, but reintroduction of fire into these altered communities, is difficult. This study measured the effect on plant community structure and composition of an alternative mechanical treatment. In April, diameter was measured for tree stems greater than 5cm, while cover and frequency of other plants were recorded in six mixed stands of longleaf (*Pinus palustris*), shortleaf (*P. echinata*), and loblolly pine (*P. taeda*) on the Kisatchie National Forest Louisiana. Half of each stand was treated with a mechanical chipper. Before treatment, pines dominated the tree layer of both treatment and control areas while hardwoods dominated the middle and understory layers. The mechanical treatment reduced the density of hardwoods in the midstory by 33% and the understory by 64%. The understory was dominated by the same species before the treatment and at the end of the first growing season. Understory species richness increased by 10 species on treated areas over the season, but only 2 species on control areas. Cover of grasses increased equally on both control and treated areas over the growing season while there was no change in cover of forbs or vines. Woody understory cover, however, increased by 13% on control areas and declined by an equal amount on treated areas. It appears that fire is required following mechanical reduction of hardwoods to stimulate herbaceous grass and forb species.