

Avian Assemblages Of Intensively Established Pine Plantations In Mississippi

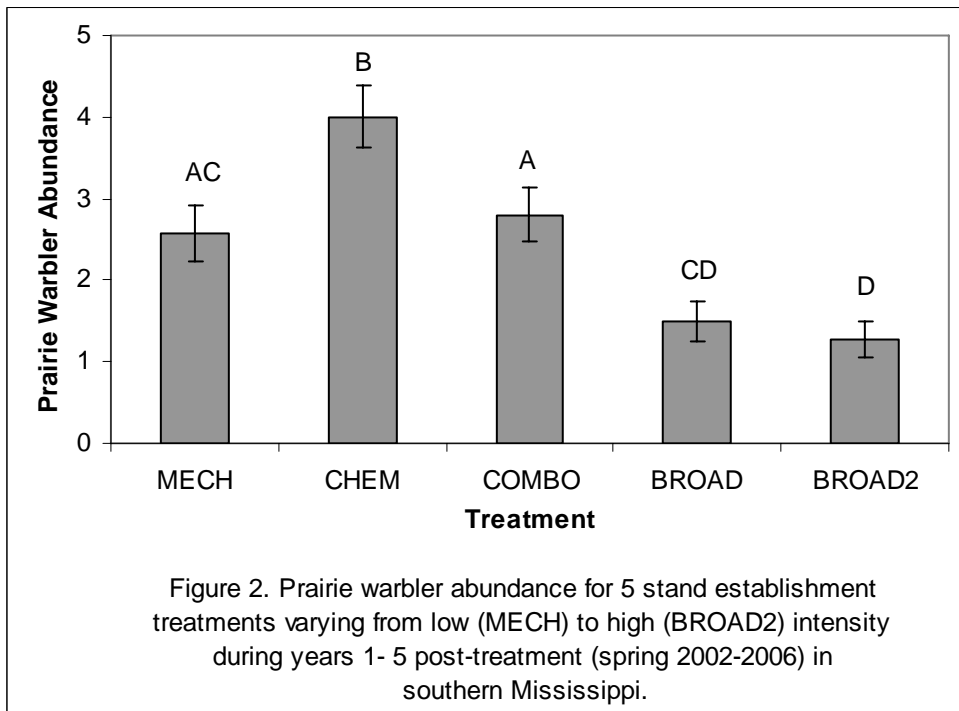
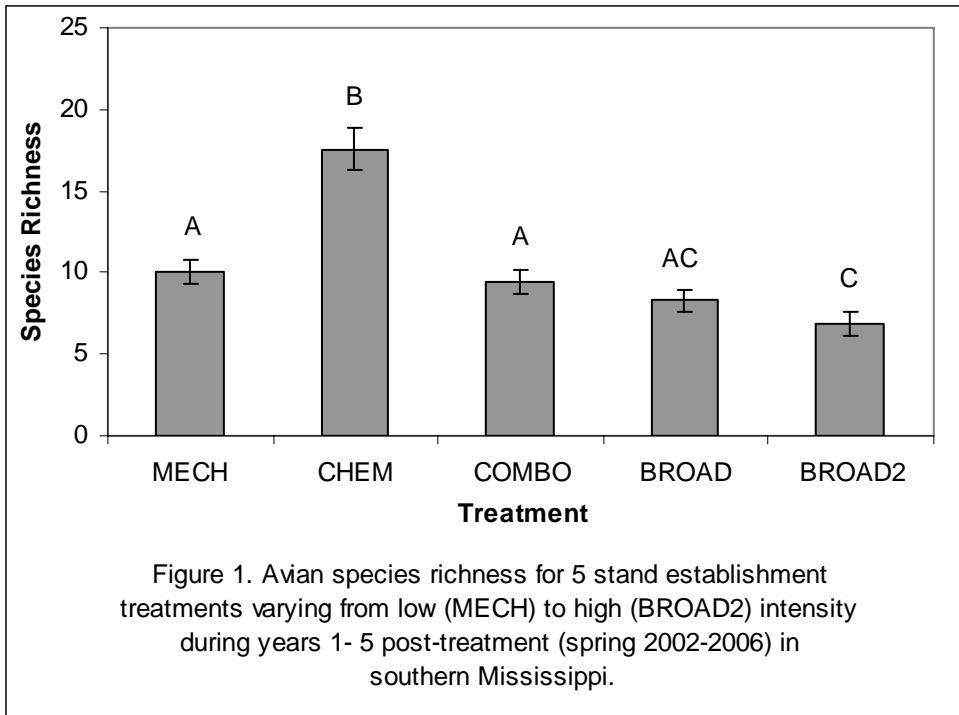
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Land area in intensive pine plantation management continues to grow in the southeastern United States. Due to concerns about reduced biodiversity and wildlife habitat quality, we assessed the effects of 5 pine establishment intensities on breeding birds during years 1 through 5 post-treatment in the Lower Coastal Plain of Mississippi (Table 1). After 5 years, species richness ($F_{4,72} = 33.20$, $P < 0.001$; Figure 1), total abundance ($F_{16,72} = 2.66$, $P = 0.003$), 2 conservation bird metrics ($F_{16,72} = 2.80$, $P = 0.002$; $F_{16,72} = 1.91$, $P = 0.033$), and abundance of 23 species were greatest generally in the herbicide-only site preparation with banded release treatment in comparison to other stand establishment methods. When there was a gradient in avian response to the establishment intensity scale, abundance commonly decreased within mechanically prepared treatments as herbicide intensity increased (Figure 2). For 13 species, there was no range in avian response to the mechanically prepared treatments (Figure 3). Tree retention in herbicide-only areas may have contributed to greatest avian abundance and richness. Our study implied that increasing stand establishment intensity can reduce avian habitat quality in southern pine plantations. Furthermore, residual trees, such as standing snags, may mitigate the negative impacts of intensive stand management on bird communities in the southeastern United States.

Table 1. Five stand establishment treatments varying from low (MECH) to high (BROAD2) intensity in the Mississippi Lower Coastal Plain.

	Treatment 1	Treatment 2	Treatment 3	Treatment 4	Treatment 5
Site Preparation	Mechanical	Chemical	Mechanical and Chemical	Mechanical and Chemical	Mechanical and Chemical
Chemical Release	Banded 2002	Banded 2002	Banded 2002	Broadcast 2002	Broadcast 2002 and 2003



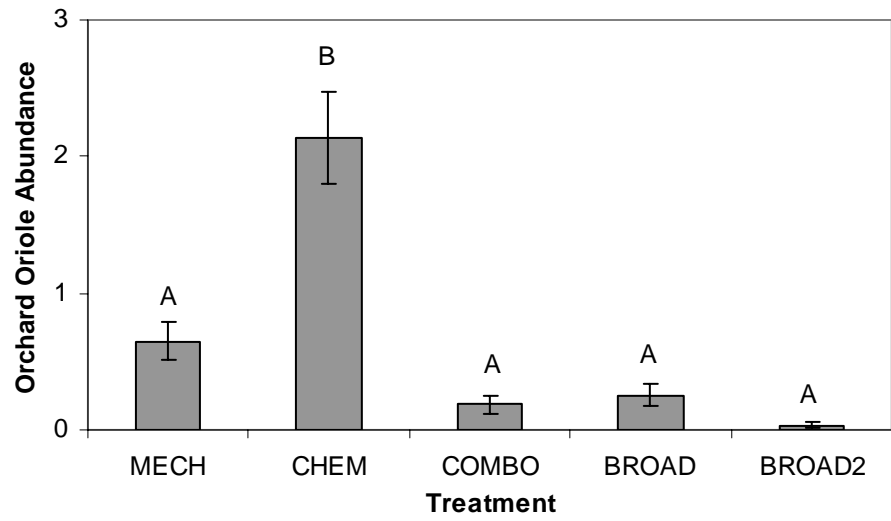


Figure 3. Orchard oriole abundance for 5 stand establishment treatments varying from low (MECH) to high (BROAD2) intensity during years 1- 5 post-treatment (spring 2002-2006) in southern Mississippi.