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Using avian species richness and avian community composition as indicators of successful forest restoration

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This study was carried out to examine the effects of forest restoration on the species richness and composition of bird communities in northern Thailand. Bird surveys were carried out in framework species plantations, established by the Forest Restoration Research Unit at Ban Mae Sa Mai in Suthep-Pui National Park. Surveys were carried out from June 2002-July 2003. Point counts and the Mackinnon list technique were used to determine the species richness, diversity, abundance and density of birds in non-planted control plots and planted plots of different ages established in 1998, 2000 and 2002.

Eighty-eight bird species were recorded from 57 genera and 30 families, this included 69 resident and 19 species of migratory birds. Thirty-six bird species were observed in the non-planted control plots and 68 species in planted plots; 43, 45 and 47 species in recently planted plots, 2-year-old and 4-year-old planted plots respectively. Bulbul species e.g. Red-whiskered Bulbul, Sooty-headed Bulbul and Flavescent Bulbul were the dominant species in the planted plots. Chestnut-capped Babbler, Red-whiskered Bulbul and Grey-breasted Prinia were the dominant species in the non-planted control plots. The Mackinnon lists suggested that the highest species richness of birds was in the 2-year-old planted plots, followed by the control plots, recently planted plots and lastly 4-year-old planted plots. The point counts suggested that the planted plots had higher richness and diversity than control plots. Similarity indices suggested that the oldest planted plots were most similar to medium-aged planted plots and were most different from recently planted plots. Non-planted control plots had a higher density of birds of open areas than planted plots, whilst forest birds had a higher density in the planted plots.

This study showed that planting framework tree species increased bird species richness, and attracted several bird species which could disperse seeds into the planted areas and thus help to accelerate forest regeneration. In addition, tree planting attracted progressively more forest birds as the plots matured.