Tree habitat heterogeneity and its utilization pattern by Bird community at Pakke Tiger Reserve, Arunachal Pradesh

Anurag Vishwakarma1, Awadhesh Kumar2

1,2 Wildlife Resource & Conservation Lab, Department of Forestry, North Eastern Regional Institute of Science and Technology (Deemed to be University), Nirjuli 791109, Itanagar, Arunachal Pradesh, India

**Keywords**: Avifauna, habitat heterogeneity, Pakke Tiger Reserve

Understanding the ecology of tropical bird communities improves conservation efforts. Functional changes from distinct habitats such as lowland forests, bamboo habitats and riverine ecosystems are of great interest in tracing the alteration of birds' ecosystem services. Habitats are an essential ecosystem of all kinds of bird species, from ground feeding to aerial feeding. Pakke Tiger Reserve is a stratified landscape comprising various small river catchment areas, bamboo habitats and classified forests. Pakke Tiger Reserve (PTR), located between 920 7.5' to 920 22' E and 260 3.7' E to 270 16.2' N, covers 861.95 km2 in the Pakke Kessang district of Arunachal Pradesh. The principal objective was to monitor and determine the density, diversity and abundance of avian species in the stratified habitat of PTR. The point count distance sampling method was used to estimate bird species in selected habitats, i.e. riverine, bamboo and forest. Habitat was assessed in pre-selected point counts, and the forest was found to be as dominating habitat, followed by riverine and Bamboo. The highest number of tree species was recorded in forest habitat, 53 species, followed by riverine, 35 species, and least in bamboo habitat, ten species. The highest number of bird species was recorded from forest habitat, 169 sp, followed by bamboo habitat, 123 sp. and riverine habitat, 120 sp. Seven tree variables were selected to check out the interaction between tree and bird species richness, and the results direct the positive effect of the overall independent variables. The dependent variable showed a significant impact with overall independent variables, *F*6,14=2.89,  *p*=0.05, indicating that all independent variables can significantly increase bird species richness. Forests are the most dominating habitat used by birds because various bird species use the height of trees for their different foraging activity, courtship, mating, and nesting.