

A COMPARISON OF BIRD POPULATIONS IN LIVE FENCES, RIPARIAN FORESTS, SHADE-GROWN CACAO, AND PRESERVED TROPICAL RAINFOREST IN NORTHEASTERN COSTA RICA

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How different species react to deforestation and conversion of tropical rainforest to agricultural land is very important to conservation. In this study bird population composition was compared in four habitats in a mixed agriculture, tropical rainforest ecosystem: organic cacao plantation, live fences in silvopasture, riparian forests in a silvopasture matrix, and preserved, secondary-growth forest. Twenty-five (25) m point counts were carried out over a two-month period along set transects (March-April, 2013). I recorded 167 species from 35 families. Mean number of identified species was greater in live fences ($=31.5$) and riparian forest ($=29.875$), than in cacao ($=24.0$) or secondary rainforest ($=19.875$) ($P=0.0002$). Analyses were run to determine how families, diet guilds, and foraging guilds varied between habitats, which showed significant variation in the composition of avian communities between different habitats in many families and guilds. Most variation was found in: the families Tyrannidae and Parulidae, the diet guilds small insects and fruit; small insects; nectar, small insects/spiders; omnivore; and fruits or fruits and seeds, and the foraging guilds shrub and understory. Since each habitat was shown to support a unique assemblage of species, a varied agricultural landscape should be maintained to provide habitat for maximum avian diversity and thus take advantage of their collective conservation benefits.