

TEMPORAL DYNAMICS OF FARMLAND AVIAN DIVERSITY: EVALUATING BIRD ASSEMBLAGES IN CROP FIELDS BEFORE AND AFTER HARVEST IN CENTRAL NIGERIA

Carlos Amissah¹, Soladoye Iwajomo², and JUSTUS DEIKUMAH¹

¹University of Cape Coast

²University of Lagos

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Abstract

Though agriculture has been linked to the decline in bird populations due to the associated changes in vegetation structure and composition, its potential to sustain birds has been explored over time. A sustainable agricultural landscape should be one that has the capacity to support bird species all year. To this end, we investigated the factors influencing pre- and post-harvest farm conditions on bird abundance, richness, and feeding guilds in three different crop fields in Jos-East and North, central Nigeria. We used line transects to survey birds and vegetation variables from 30 fields each of legumes, maize, and mixed (maize and soya bean) during the pre- and post-harvest periods in central Nigeria. We first compared the variation in bird species richness, abundance, and feeding guild abundance across the three field types over the two periods. We then modeled the effects of field conditions and vegetation parameters on feeding guild abundance, species abundance, and species richness as response variables. Our results revealed significant variations in bird species richness, abundance, and feeding guild abundance across field types. The omnivorous guild was significantly higher pre-harvest than post-harvest whereas insectivorous and granivorous were significantly higher in-field than at the edge. Bird species richness, abundance, and feeding guild abundance were significantly higher pre-harvest than post-harvest and in-field than at the edge. In addition, in-field tree density had a significant positive influence on bird abundance and species richness as well as feeding guild abundance. This study shows that pre- and post-harvest conditions of crop fields can moderate the number and richness of birds on farmlands while the retention of trees on farmlands contributes to higher bird assemblages.

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