Title: Diversity, relative abundance, and habitat association of avian species in Tara Gedam Monastery forest and adjacent habitats, Northwestern Ethiopia.

Authors: Endihnew Tessfa, Dessalegn Ejigu, Gezahegn Degife, and Nega Tassie.

Abstract

Birds are important bio-indicators and provide various ecosystem services including pollination, dispersal, and pest control. However, they are threatened by habitat loss, fragmentation, and degradation. Study on species diversity, relative abundance, and habitat associations of avifauna were conducted in Tara Gedam Monastery forest patch and associated habitats from July 2016 to April 2017. Stratified random sampling approach was used to classify habitats and select sampling plots based on vegetation type. Consequently, forest, bushland, farmland, and plantation habitats were used for data collection. Point count and line transect methods were used to collect data, and Shannon-Weiner and Simpson's diversity indices were used to estimate the avian species diversity. One-way ANOVA was conducted to compare avian relative abundance and richness among the different habitat types. A total of 98 species of birds belonging to 14 orders and 41 families were recorded in Tara Gedam Monastery forest and associated habitats. Eighty-seven resident bird species and eleven Palearctic migrants were identified of which seven species are endemic to Ethiopia and Eritrea. The highest avian diversity (H'=4.23) was recorded in the study area during the wet season.The highest species similarity index (SI=0.47) was recorded between forest and bushland habitats during the wet season, while the lowest similarity index (SI=0.07) was found between bush-land and farmland habitats during the dry season. Species richness and relative abundance of bird species varied between the wet and dry seasons. Besides birds, Tara Gedam Monastery forest supports a large number of other wild fauna species, which indicates the area's potential to support biodiversity. Therefore, there must be a collaborative work between the monastery and different governmental and non-governmental organizations to protect the entire ecosystem in order to conserve the whole biodiversity of the area in general and the avifauna in particular.

Keywords: Abundance, Avifauna, Forest, Species diversity, Species similarity.

Ethiopian Journal of Science and Technology 13, no. 1 (2020): 65-80.

DOI: https://doi.org/10.4314/ejst.v13i1.5

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