

## **Effect of Water Quality Parameters of the Pond “Ariyakulam”, Jaffna on Avifaunal Diversity**

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### **Abstract**

Ponds are one of the important wetland ecosystems where birds are playing a major role in their stability. As far as avifauna of Jaffna is concerned there are few recent publications related to the bird diversity and their distribution in wetlands but no information are available for the pond inhabitants. The present study was designed to find out the effect of water quality parameters on diversity of avifauna of “Ariyakulam” Jaffna. The study area was the pond “Ariyakulam” (9°40'06.30" N and 80°01'07.57" E) located close to the Jaffna town. Water samples were collected twice a month from August, 2016 to January, 2017 and January 2018 and February 2018 and water quality parameters were recorded using standard equipment and protocols. Avifaunal abundance was counted for 30 minutes from 7.30 to 8.00am both by the naked eye and with a binocular and identified through the standard guides. Correlation coefficient for the water quality parameters against bird's diversity, richness and evenness were calculated with the help of MS Excel version 2010. During the study period altogether a total of 1274 birds were recorded in the pond and they were belonged to 10 species in 6 families with 16 human efforts. Pearson's correlation coefficients revealed a strong positive correlation between electrical conductivity with species diversity, dissolved Oxygen, and species richness ( $r > 0.8$ ) and species richness with nitrate nitrogen and species diversity ( $r > 0.8$ ). In 19 cases the correlation coefficient was negative among the parameters. Simpson's diversity index and evenness indicated that this pond acted as a good habitat for the avifaunal species.

*Keywords: Avifauna, Species diversity, Evenness, Water quality parameters*