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Water Birds Diversity Variations in Tidal and Non-tidal Wetland Habitats in East Al_Hammar Marsh South of Iraq

Aqeel Laftah Al-Emarah and Mufid Kassim Abou-Turab*
Biology Department, College of Education for Pure Sciences, University of Basrah, Basra, Iraq
✉ mufid.mohammed@uobasrah.edu.iq

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Abstract: Waterbird diversity and its distribution are deemed as one of the essential issues in the ecological conservation of wetlands areas. However, the differences in the diversity of waterbirds in tidal and non-tidal wetlands have been underestimated. This study aimed to identify the variations in bird diversity between tidal and non-tidal areas in East Al-Hammar marsh to guide the efforts of bird and habitat conservation. The bird survey was extended from August 2020 to March 2021, in three selected sites; Slien (non-tidal area), Al-Sallal and Al-Burqa (tidal areas). Twenty-nine species were observed. These species were classified into three categories: migrant 68.96, resident 6.90% and migrants and residents 24.14%. Species richness indices included; number of species, Margalef and Menhienk indices indicated that the highest values were in the Slien site, there were 19, 3.191 and 1.254, respectively. Similarly, Shannon Weiner and Berlion's indices showed the highest values in Slien. However, the Berker-Berker dominance index revealed the highest value in the Slien site 0.193. Interestingly, the Jaccard similarity index showed the highest measure of 0.791 between Al-Sallal and Al-Burqa, while the highest dissimilarity index of Whittaker was between Slien and Al-Sallal. In sum, the current data analysis demonstrated that non-tidal areas supported higher diversity of waterbirds than tidal marshes.

Key words: Bird biodiversity, tidal marshes, non-tidal marshes.

Introduction

Wetlands have been recognised as significant habitats that support numerous wildlife (Shahidullah et al., 2020). Long et al. (2021) stated that wetlands are the most biologically diverse of all ecosystems, cradle to a wide variety of plant and animal life, as they provide water and primary productivity.

The marshes are one of the wetland types and in turn classified into two types (Hussain and Sabbar, 2020). the first is called tidal marshes, which are found along the coasts and affected by tides and often fresh water from surface runoff, rivers or groundwater and are characterized by a great diversity of plant and animal organisms. The second category is the non-tidal marshes, which are often found in poorly drained depressions, floodplains, and shallow water areas along the edges of lakes and rivers, and usually derive most of their water from surface water in addition to underground water (Hussain and Sabbar, 2020). The non-tidal marshes are characterized by the fact that the majority of them are fresh or salty water, and the water level is seasonally varied. Plants vary as well including sedge, reeds and club-rush (Caponera and Kiviat, 2020). Ramli and Norazlimi (2016) emphasised that tidal wetlands supplement adequate habitats for shorebird occurrence and diversity.

*Corresponding Author