Study of relative abundance and biodiversity index of waterbirds in Harra protected area (A case study from 2007 to 2012)

Peyman Karami[1*]
Saber Ghsemi[2]
Maysam Ghasemi[3]
Majid Hosseini[4]

1. Faculty of Natural Resources, University of Hormozgan, Hormozgan, Iran
2. Department of Environment science, Islamic Azad University, Bandar Abbas Branch, Hormozgan, Iran
3. Hormozgan Department of Environment (DoE), Hormozgan, Iran
4. Department of Environment, Faculty of Environment, University of Gorgan, Iran

[*]Corresponding author
Peymankarami1988@gmail.com

Received date: 2013.08.25
Reception date: 2014.01.25

Abstract

Waterbirds are considered as most outstanding of the animal group for identifying of ecological variations in mangroves. A time gorge of six years (2007-2012) was studied for determination of variations rate in biodiversity index of waterbirds and their relative frequency in Harra Protected Area (HPA) using mid-winter census. The mean value abundance of the waterbirds during the period of study was found to be 12836±4464/340 individuals. The *Egretta gularis, Charadrius mongolus, Caldris alpine, Larus cachinnans* and *Sterna niticola* were the dominant species were from family Ardeidae, Charadriidae, Scolopacidae, laridae and Steridae at HPA, respectively. A similarity percentage (SIMPER) analysis indicated that total average similarity of waterbird species in HPA was 62.90%. Furthermore, The HPA was dominated by *Dromas ardeola, Calidris alpina* and *Numenius arquata* (SIMPER, percentage of contribution to similarity of 18.58%, 13.92%, and 10.69% respectively). Four species of Crab plover, Dunlin, Eurasian Curlew and Terek Sandpiper represented more than 50% of observations at HPA. The results of diversity patterns of waterbirds indicated that the diversity was higher in 2012 as compared to other years, where *Shannon-Wiener's* H, *Simpson'd* index and *McIntosh'd* index were 2.99, 14.31 and 0.74 respectively. The values for Species Abundance, *McIntosh E* and *Pielou J* were calculated to be 41, 0.85 and 0.73 for 2012 respectively. The results were confirmed using Rényi diversity profile. Furthermore, the SHE analysis showed that effective component over number index diversity was Evenness indices and species richness component.

Key words: Waterbirds, Biodiversity, Relative abundance, Harra Protected Area.