

## The Use of SHE analysis to determine the contribution of species diversity of wintering birds in the Shadegan International Wetland

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Received date: 2018.01.10  
Reception date: 2019.10.04

### Abstract

The species diversity has two distinct components, the first component is related to the number of species in the sampling unit, which is said species richness, and the second component is the evenness that related to individuals' distribution of species in the environment. In this study, Waterfowls and Waders were counted in the fall and winter of 2016 using a direct observation census in 41 stations in the 500-meter range for species diversity analysis. The information about the number of species and populations, and the amount of biodiversity indicators (Shannon-Wiener species diversity, dominance of species, Simpson richness of species and SHE analysis) were calculated. The results showed that station 12 has the most species diversity and richness of waterfowls and waders in winter, with values of 2.82 and 0.9349 respectively. The station 18 is also the least species diversity and richness, with values of 0.82 and 0.415, respectively. On the other hand, Station 18 has the highest value of dominance with a value of 0.555. SHE analysis also showed that richness has a higher contribution to species diversity than evenness. Totally, it can be stated that Shadegan wetland during the studied period has significant fluctuations in the richness and species diversity of wetland birds. Therefore, it is necessary to study and analyze the causes and factors affecting the fluctuations of richness and species diversity in complementary studies and other habitat characteristics and appropriate methods should be considered for the restoration and conservation of this ecosystem.

**Keywords:** Species diversity, Waterbird census, Dominance, Evenness, SHE Analysis.