Waterbird species use artificial wetlands as an alternate habitat

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Abstract:【Objective】Wetlands are highly dynamic habitats for waterbird species due to floristic characteristics, mosaic microclimate, and occurrence of variety of food resources. Despite this, human involvement has put overwhelming pressure on wetlands thus making them less attractive for wide range of waterbird species. The current study aims to investigate that whether or not an artificial wetland serves as an alternative habitat for waterbird conservation and protection.【Method】For this purpose, two wetlands are selected from same province and species richness, abundance and waterbird community composition between natural and artificial were compared. From 2017 to 2022, field surveys were conducted at the mentioned two wetlands, from September to March of each year. Birds were surveyed from one to 15 vantage points using point count methods in each study area with binoculars and monocular. The birds were photographed with Nikon D7200 (150-600 lens) for five consecutive winter seasons. Observation sites were randomly selected along the shoreline within each wetland, with high points being preferred.【Result】The results showed that, Total, 23382 water bird species grouped into 9 orders and 14 families were observed in the conducted study sites. The richness of the species varied from 39 to 47 at different study sites. Natural wetlands harbored 14, 671 individuals representing 47 waterbirds species and 14 families, while artificial wetlands hosted 8711 individuals representing 39 species and 13 families. In total, 39 species were identified as least concerned, 5 were near threatened, and one species was endangered, one vulnerable, and one data was found deficient. According to national status 25 of 47 and 21 of 39 water bird's species were migratory which just pass through the region in winter season. The overall results of the study are H' (Shannon diversity index) 3.611, Lembda (Simpsons diversity index) 0.0314, and Evenness (H/ln S0.938. *Anas platyrhynchos* (mean ± s.e, 33.66 ± 3.38) and *Anas crecca* (mean ± s.e, 26.51 ± 1.38) were the foremost abundant species in natural wetlands. *Anas clypeata* (mean ± s.e, 15.09 ± 1.69) and *Anas crecca* (mean ± s.e, 15.51 ± 1.03) were the foremost prevailing species of artificial wetlands. *Porphyrio porphyrio, Alcedo atthis , Anser indicus, Aythya nyroca , Charadrius leschenaultia , Gallicrex cinerea , Gallinago media Platalea leucorodia* and *Vanellus leucurus* did not utilize artificial wetlands.【Conclusion】According to diversity indexes, natural wetlands draw a wider variety of waterbirds than man-made wetlands. The findings showed that natural wetlands had drawn more migratory birds than did manmade wetlands. Artificial wetlands, on the other hand, were home to a greater variety of resident waterbird species than natural wetlands. Therefore, we agree with the idea that a variety of waterbird groups may use manmade wetlands as an alternate habitat. Therefore, it is strongly advised that artificial wetlands be built to house a larger variety of waterbird species in order to stop the loss of wetland ecosystems and biodiversity across the nation.

Key Words: water birds; population; conservation status; natural wetland; feeding guilds.