(72)

Habitat Utilisation of Waterbirds in and around Maduru Oya Reservoir

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Abstract

Wetlands are important bird habitats and waterbirds use them for feeding, resting, breeding and other social interactions. This study was conducted to determine the most important habitat types utilized by waterbirds to exhibit different behaviors, in and around Maduru Oya Reservoir in Maduru Oya National Park from January to December 2019. Bird survey was carried out using the point count method. A common ethogram was constructed to identify the behavior categories of waterbirds. Behavioral data were collected under the main categories of feeding, resting, breeding and comfort activities in three time slots per day; morning (0600-1000h), mid-day (1000-1400h) and evening (1400-1800h). Eight habitat types utilized by waterbirds in and around the reservoir were identified based on field observations; open water, grass, mud, rock, invasive plants, non-vegetative cover, dead trees/logs and trees. Percentage cover of each habitat type was estimated by laying quadrates in a systematic arrangement along three 300 m long fixed line transects once a month. Behavior at the first sight and the habitat type used by waterbirds to exhibit the particular behavior were recorded to determine the habitat utilization. Resting was the behavior category shown by highest number of waterbirds followed by feeding, breeding and comfort activities. Availability of habitat types varied greatly among the months. Percentage cover of grass had increased gradually from March to September with the highest in September (69.27%) while open water was the most prominent habitat type in rest of months. Open water cover was highest in December (91.14%). No invasive plant cover was observed from June to September. Rock cover was increasing from April to September with the highest in September (10.41%). The most utilized habitat type was trees (12982) while the most under-utilized habitat type being invasive plants (363). Significantly high number of individuals used areas of grass, open water and mud for feeding and exposed rocks, dead trees and logs for resting (One Way ANOVA, $p<0.05$). *Ludwigia sp*. was the most prominent invasive plant used by waterbirds for resting. Breeding was observed only on the trees. Present study revealed the importance of preserving this large reservoir as an important habitat for the conservation of water birds.

Keywords: Water bird assemblage, Aquatic avifauna, Wetlands, Conservation, Maduru Oya National Park