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Factors affecting the migrating waterfowls at the Annaiwilundawa Ramsar site of the northwestern Sri Lanka

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Abstract

Factors affecting the migrating waterfowls at three reservoirs of the Annaiwilundawa Ramsar site of Northwestern Sri Lanka were studied from October 2009 to March 2012. Populations of the waterfowls were recorded in each month using line transects method. The day was divided in to three time periods as morning (7:00 hrs - 10:00 hrs), afternoon (12:00 hrs – 14.00 hrs) and evening (15:00 hrs - 17:00 hrs) and the diurnal activities were recorded using “Focal animal sampling method” and the “Scan sampling method”. Any event causing the waterfowls to alter their behavior was recorded as a disturbance. Waterfowl were observed through a 15~60 x 25 spotting scope and 25 x 45 binocular. Garganey (*Anas querquedula*) was the only migratory waterfowl recorded. The number of Garganey gradually declined in number over the three year period with maximum in December 2009 (335 individuals and density 3350 birds / Km²). From November 2009 to February 2010 (winter season) average population of Garganey was 3188 Birds/ Km², from November 2010 to February 2011 it was 1358 Birds/ Km² and from November 2011 to February 2012 it was 760 Birds/ Km². Garganey abandoned the Annaiwilundawa Ramsar site when the reservoirs dried up in January and February 2012. Garganey (n = 3098) allocated most of their time for resting (morning 41%, mid day 55% and evening 35%). This was followed by preening (morning 33%, mid day 37% and evening 22%). ANOVA results revealed no significant differences in the diurnal activity budgets of Garganey during the three time periods of the study. (Sleeping $F_{(2,28)} = 0.186$, $p = 0.831$ Resting $F_{(2,28)} = 1.480$, $p = 0.254$, Feeding, $F_{(2,28)} = 2.783$, $p = 0.079$, Flying $F_{(2,28)} = 0.111$, $p = 0.896$, Swimming $F_{(2,28)} = 3.172$, $p = 0.057$, walking $F_{(2,28)} = 2.059$, $p = 0.146$, Preening $F_{(2,28)} = 0.124$, $p = 0.884$, Agnostic $F_{(2,28)} = 0.458$, $p = 0.637$, Alert $F_{(2,28)} = 0.363$, $p = 0.699$, Bathing $F_{(2,28)} = 1.307$, $p = 0.287$). Grass habitat (86%) was heavily used by Garganey for their diurnal activities followed by open water (9%). Habitat utilization of Garganey did not differ significantly during the study period (Invasive plant water hyacinth $F_{(2,21)} = 1.566$, $p = 0.232$, Salvinia $F_{(2,21)} = 0.681$, $p = 0.517$ Olu $F_{(2,21)} = 0.385$, $p = 0.685$, Open water $F_{(2,21)} = 1.390$, $p = 0.271$, Grass $F_{(2,21)} = 0.894$, $p = 0.424$, muddy Ground $F_{(2,21)} = 0.901$, $p = 0.421$). Garganey was heavily disturbed by Brahminy kite.

Key words: Waterfowl, diurnal activity budgets, Annaiwilundawa Ramsar site