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A note on bird–habitat relationship in Kirala Kele, Sri Lanka

Wetlands and their associated biodiversity are threatened by habitat loss and fragmentation, invasive species, and global climate change (Fletcher, 2003). Knowledge of the bird distribution pattern with respect to the habitats is critically important in conservation and management of both birds and their habitats (Finch, 1991). Hence, an attempt was made to investigate the abundance and diversity of birds associated with selected habitats in the Kirala–Kele (K–K) marshland system with reference to the habitat characters between June 2010 and November 2010. K–K Eco touring zone is one such marshland type wetland situated in Matara, Southern Sri Lanka. It covers an area of about 1,800 ha of natural marsh areas and abandoned paddy fields. In this study K–K bird sanctuary was divided into five sites, differing in water retention and vegetation types, situated along the southwest – northeast trail at least 500 m apart from each other (Table 1). Point count was used to enumerate the birds as described by Jenkins & Ormerod (2002). Birds were identified based on Harrison's (1999) field guide. Bird foraging behaviors were observed according to the guidelines indicated by Remsen & Robinson (1990).

Table 1: Habitat characters of the five study sites in K–K marshland

Site	Dominant vegetation type	Dominant terrestrial species	Dominant wetland species	Remarks
1	terrestrial & wetland	*Leucene leucocephala* *Lantana camera* *Terminalia arjuna*	*Typha* sp. *Cyperus difformis* *Anona sp*	no human uses observed
2	terrestrial & wetland	*Anona* sp. *Terminalia arjuna*	*Typha* sp. *Cyperus difformis* *Pandanus* sp.	no human uses observed
3	wetland		*Typha* sp. *Cyperus difformis* *Pandanus* sp. *Cyathocalyx zeylanicus*	used for fisheries and buffalo grazing
4	wetland		*Typha* sp. *Cyperus difformis,* *Sonneratia caseolaris* *Nymphaea pubescens* *Nymphodes indica,* *Aponogeton* sp.	used for fisheries
5	terrestrial & wetland	*Gliricidia* sp. *Alstonia* sp. *Cocous nuscifera* *Terminalia arjuna*	*Typha* sp. *Cyperus difformis,* *Pandanus* sp. *Nelumbo nucifera*	used for fisheries and as cattle sheds

A total number of 83 bird species were recorded during the study period. The total number of species recorded at sites 1, 2, 3, 4 and 5 were 57, 61, 62, 42 and 41, respectively. Bird species were abundant at sites 1, 2 and 3 when compared to sites 4 and 5. The majority of birds foraged at sites 1, 2 and 3 while several bird species used sites 4 and 5 as feeding and roosting sites (Tables 2 & 3) indicating the importance of habitat heterogeneity for avian behavior. *Typha* sp. and *Cyperus difformis* were abundant at sites 1, 2 and 3 supporting a rich wader community and several terrestrial bird species. Shallow open water areas and plants at sites 4 and 5 provided feeding grounds for waders. Associated *Sonneratia caseolaris*

vegetation was used as roosting sites by egrets, herons, cormorants and darters. *Typha* sp. beds were used as roosting sites by white–breasted water hens, purple swamp hens, common moorhens and pheasant tailed jacanas. This data indicates vegetation diversity and habitat use by inhabiting birds in the study sites. Vegetation structure and area of the open water bodies might be key determinants of the bird composition in these five study sites. Further analysis is required for a deeper understanding of bird assemblages and habitats.

Table 2: Dominant bird species recorded in the study sites

Sites 1, 2 and 3		Sites 4 and 5
Anas querquedula	*Nycticorax nycticorax*	*Ardeola grayii*
Gelochelidon nilotica	*Amaurornis fuscus*	*Ardea purpurea*
Copsychus saularis	*Tringa totanuseurhinus*	*Corvus macrorhynchos*
Pycnonotus luteolus	*Butorides striatus*	*Dendrocygna javanica*
Columba livia	*Thriskiornis melanocephala*	*Egretta garzetta*
Pavo cristatus	*Saxicoloides fulicata*	*Amaurornis phoenicurus*
Prinia socialis	*Clamator jacobinus*	*Porphyrio poliocephalus*
Ardea cinerea	*Corvus splendens*	*Eudynamys scolopaceus*
Xantholaema rubricapilla	*Zosterops palpebrosa*	*Phalacrocorax niger*
Ibis leucocephalus	*Podiceps ruficollis*	*Bubulcus ibis*
Acrocephalus stentoreus	*Ixobrychus sinensis*	*Egretta imtermedia*
Haliastur Indus	*Gallinula chloropus*	*Himantopus himantopus*
Tchitrea paradise ceylonensis	*Prinia hodgsonii*	*Anastomus oscitans*
Prinia hodgsonii	*Amaurornis fuscus*	*Hydrophasianus chirurgus*
Actitis hypoleucos		*Ceryle rudis*

Table 3: Percentage of bird species foraging and roosting at study sites

	Site 1	Site 2	Site 3	Site 4	Site 5
Feeding	66.27	69.88	69.88	49.40	39.76
Roosting	0	0	0	20.48	13.25

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