

Observations on the Birds of Sandspit/Hawkesbay Coastal Wetland Complex, Karachi Coast

JAHANGIR DURRANEE, SYED ALI HASNAIN AND EJAZ AHMAD

WWF – Pakistan, Karachi

e-mail: Karachi@wwf.org.pk; ahasnain@wwf.org.pk; eahmad@wwf.org.pk

Abstract.- Sandspit/Hawkesbay area contains mangrove swamps, saline pond, estuaries, saltpan and the main coast (beach). These locations have immense significance in the coastal ecosystem, particularly for birds. This paper reports 114 species of birds, belonging to 14 Orders and 38 Families, recorded from the area during the period 2000 – 2004.

Key words: Coastal birds, coastal wetland, Arabian Sea, Mangrove swamps, Karachi coast

INTRODUCTION

Sandspit lies about 18 km southwest of Karachi City. It is one of the prime recreational sites for the citizens of Karachi. The area is a complex of coastal wetlands and contains shallow tidal lagoons, intertidal mudflats, salt pans, estuaries, saline pond, mangrove swamps and sandy beach (Fig. 1). The western part is open sandy beach extending for about 10 km. The Lyari River feeds the backwaters from the eastern side and sea water enters from the south as well as from Karachi harbour. The climate is arid subtropical with temperatures remaining 30° to 40°C in summer and 10° - 20°C in winter.

A GIS based land cover classification identified the extent of different classes in Sandspit, as Water, 182; Sparse Mangroves, 93; Dense Mangroves, 307; Tidal Mud Flats, 77; Terrestrial Vegetation, 15 and Dry Land, 106 (*Source: GIS Laboratory, WWF – Pakistan*) (WWF-P, 2004).

The area has significant ecological and biodiversity value. Mangrove forest provides good feeding, sheltering and breeding ground for many species of birds. The mangrove forest at Sandspit is equally important as it provides a representative wetland ecosystem close to the city. There is only one species of mangrove in the backwaters at Sandspit viz. *Avicennia marina*.

About 10 km stretch of the beach facing the Arabian Sea is sandy. The beach is about 100 to 200 meters wide. Sandspit beach is one of the important sites for marine turtle nesting (WWF-P, 2004).

0030-9923/2008/0004-0299 \$ 8.00/0

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The saline pond in the backwater and mudflats in particular are important roosting, feeding and staging grounds of water birds. The pond and the mudflat is frequented by large number of water birds in winter.

The salt pans occupy the area between Sandspit/Hawkesbay backwater. Sea water is pumped into these pans for salt production. Neither these nor the adjoining low lying salt affected areas support any vegetation due to high salinity and water logged soil. However, the area has special significance with regard to the biodiversity. The area inhabits important diversity of vertebrate and invertebrate species. Thousands of migratory shorebirds can be seen in salt pan areas in winter. It is assumed that they are attracted by the food from small crustacea, which can survive in high saline conditions.

The estuary of Lyari River alongwith other parts of the backwaters has been extensively damaged by the pollution of Lyari River. As a consequence, biodiversity is very limited here. Even the benthic deposits may also contain high level of toxic materials (WWF-P, 2004).

Various researchers have undertaken studies on the bird fauna of the region but the work done on the birds of Sandspit – Hawkes bay area needs to be updated regularly because of the importance of the site. Ticehurst (1923 – 24) has given a brief account on the coastal birds of Sindh, based on his work during 1917 – 20. Ali and Ripley (1968-74) have given the distribution and status of birds of the Indian subcontinent, but the particular information

on the birds of Sandspit-Hawkesbay is lacking. Roberts *et al.* (1988) have worked out the seasonal

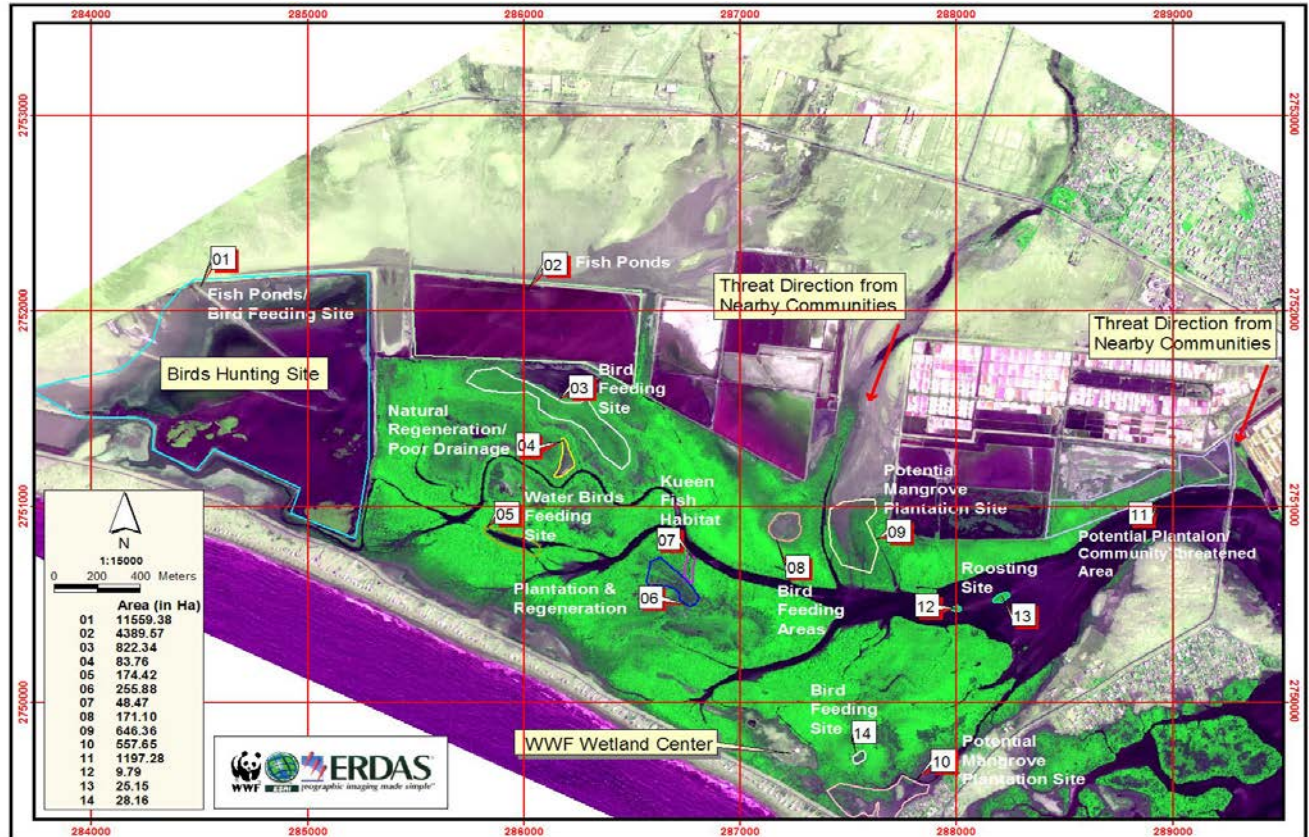


Fig. 1. Different types of ecosystems in Sandspit/Hawkesbay area.

abundance and occurrence of resident and migratory birds on Karachi coast in general. Hirschfeld *et al.* (1988) have given a brief account of the avifauna of Karachi coast. Khanam and Ahmed (1988) listed the waterbirds of Karachi coast based on their brief four months survey. Ahmad *et al.* (1988) have reported the occurrence of waterfowl from the mangrove areas of Sindh province under a project on the Vertebrate fauna of Mangrove Swamps of Sindh. Roberts (1991-92) has given the description, habitat, habits and biology of the birds of Pakistan including brief information on the birds of Karachi coast. Ghalib and Hasnain (1994) have worked on the Waterfowl of Karachi coast. Hasnain (1996) recorded the distribution and migration pattern of gulls and terns on Karachi coast. Ghalib and Hasnain (1997a) recorded the waterbirds of Clifton beach of Karachi coast. Hasnain and Ghalib (1997b) worked on the waders of Karachi coast. Siddiqi *et*

al. (2001) have given birds population in different coastal areas of Sindh. These year-long studies by the present authors have never been undertaken previously in the area. Study was possible through the Wetland Centre of WWF – Pakistan at Sandspit.

MATERIALS AND METHODS

The study area was visited at least once every month for five years (January 2000 to December 2004) to record the bird fauna. Spottingscope (15 X 60 mm) mounted on tripod and binoculars (10 X 50 mm) were used for observations. The identification of birds in the field was carried out with the help of Heinzel *et al.* (1972), Sonobe and Usui (1993) and Grimmett *et al.* (1999).

RESULTS AND DISCUSSION

During the five years, 114 species of birds,

belonging to 14 Orders and 38 Families were recorded from the area (Table I). Majority of them

Table I.- List of birds recorded from Sandspit/Hawkes bay coastal wetland complex

No.	Orders	Families	Name of species	Common name	Status	Habitat
1	Podicipediformes	Podicipedidae	<i>Tachybaptus ruficollis</i>	Little Grebe	Rare, Occasional Winter visitor	Saline pond
2			<i>Podiceps nigricollis</i>	Black-necked Grebe	Rare, Occasional Winter visitor	Saline pond
3			<i>Podiceps cristatus</i>	Great Crested Grebe	Rare, Occasional Winter visitor	Saline pond
4	Pelecaniformes	Pelecanidae	<i>Pelecanus crispus</i>	Dalmatian Pelican	Vulnerable, Winter visitor	Coast/pond
5			<i>Pelecanus onocrotalus</i>	White or Rosy Pelican	Common, Winter visitor	Coast, marshes, pond
6		Phalacrocoracidae	<i>Phalacrocorax carbo</i>	Large Cormorant	Common, Resident	Coast, marshes, estuaries
7			<i>Phalacrocorax fuscicollis</i>	Indian Shag	Rare, Winter visitor	Coast
8			<i>Phalacrocorax niger</i>	Little Cormorant	Common, Winter visitor	Mangroves, pond, marshes
9	Ciconiiformes	Ardeidae	<i>Ardea cinerea</i>	Grey Heron	Common, Resident	Mangroves, marshes, mudflats, pond
10			<i>Ardea purpurea</i>	Purple Heron	Rare, Resident	Mangroves
11			<i>Ardeola grayii</i>	Indian Pond Heron or Paddy Bird	Common, Resident	Mangroves, marshes, pond, mudflats
12			<i>Bubulcus ibis</i>	Cattle Egret	Common, Resident	Mangroves
13			<i>Ardeola striatus</i>	Little Green Heron	Resident, Rare	Mangroves
14			<i>Egretta alba</i>	Great White or Large Egret	Common, Resident	Marshes, mudflats, pond, mangroves, coast
15			<i>Egretta garzetta</i>	Little Egret	Common, Resident	Marshes, mudflats, pond, mangroves, coast
16			<i>Egretta gularis</i>	Western or Indian Reef Heron	Common, Resident	Marshes, mudflats, pond, mangroves, coast
17			<i>Egretta intermedia</i>	Intermediate Egret	Common, Resident	Marshes, mudflats, pond, mangroves, coast
18			<i>Nycticorax nycticorax</i>	Night Heron	Common, Resident	Mangroves
19		Threskiornithidae	<i>Plegadis falcinellus</i>	Glossy Ibis	Rare, Winter visitor	Marshes, pond, estuaries

Continued

No.	Orders	Families	Name of species	Common name	Status	Habitat
20			<i>Platalea leucorodia</i>	Spoon bill	Rare, Winter visitor	Marshes, estuaries, mangroves, pond
21	Phoenicopteriformes	Phoenicopteridae	<i>Phoenicopus ruber</i>	Greater Flamingo	Common, Resident	Pond, estuaries
22	Anseriformes	Anatidae	<i>Tadorna tadorna</i>	Shelduck	Rare, Winter visitor	Saline pond
23			<i>Anas acuta</i>	Pintail	Rare, Winter visitor	Saline pond
24			<i>Anas clypeata</i>	Shoveller	Rare, Winter visitor	Saline pond
25			<i>Anas crecca</i>	Common Teal	Rare, Winter visitor	Saline pond
26			<i>Anas penelope</i>	Wigeon	Rare, Winter visitor	Saline pond
27			<i>Anas platyrhynchos</i>	Mallard	Rare, Winter visitor	Saline pond
28			<i>Anas strepera</i>	Gadwall	Rare, Winter visitor	Saline pond
29			<i>Aythya ferina</i>	Common Pochard	Rare, Winter visitor	Saline pond
30			<i>Aythya fuligula</i>	Tufted Duck	Rare, Winter visitor	Saline pond
31	Accipitriformes	Accipitridae	<i>Milvus migrans</i>	Common Kite	Common, Resident	Mangroves, marshes, coast, plains
32			<i>Haliastur indus</i>	Brahminy Kite	Common, Resident	Mangroves
33			<i>Accipiter badius</i>	Shikra	Rare, Resident	Mangroves, estuaries
34			<i>Buteo buteo</i>	Common Buzzard	Rare, Winter visitor	Mangroves, marshes, pond
35			<i>Circus aeruginosus</i>	Marsh Harrier	Rare, Winter visitor	Mangroves, coast
36		Pandionidae	<i>Pandion haliaetus</i>	Osprey	Common, Winter visitor	Mangroves, marshes
37	Galliformes	Phasianidae	<i>Coturnix coturnix</i>	Common Quail	Rare, Local migrant	Coast
38	Gruiformes	Rallidae	<i>Fulica atra</i>	Coot	Winter visitor	Saline pond
39	Charadriiformes	Haematopodidae	<i>Haematopus ostralegus</i>	Eurasian Oyster Catcher	Common, Winter visitor	Coast, estuaries, mudflats
40		Rostratulidae	<i>Rostratula benghalensis</i>	Painted Snipe	Rare, Partially Resident	Estuaries
41		Dromadidae	<i>Dromas ardeola</i>	Crab Plover	Rare, Winter visitor	Mudflats
42		Recurvirostridae	<i>Himantopus himantopus</i>	Black Winged Stilt	Common, Resident	Marshes, coast, mangroves, estuaries, mudflats, pond
43			<i>Recurvirostra avosetta</i>	Pied Avocet	Rare, Winter visitor	Saline pond
44		Burhinidae	<i>Esacus recurvirostris</i>	Great Stone Plover	Rare, Winter visitor	Coast

Continued

No.	Orders	Families	Name of species	Common name	Status	Habitat
45		Charadriidae	<i>Hoplopterus malabaricus</i>	Yellow wattled Lapwing	Rare, Summer visitor	Marshes, pond, estuaries
46			<i>Hoplopterus indicus</i>	Red wattled Lapwing	Common, Resident	Marshes, pond, estuaries, mangroves
47			<i>Chettusia leucura</i>	White-tailed Lapwing	Winter visitor, less common	Saline pond
48			<i>Pluvialis squatarola</i>	Grey Plover	Common, Winter visitor	Mudflats, coast
49			<i>Charadrius hiaticula</i>	Ringed Plover	Common, Winter visitor	Mudflats, coast
50			<i>Charadrius dubius</i>	Little Ringed Plover	Winter visitor, few over-summering	Mudflats, coast, mangroves
51			<i>Charadrius alexandrinus</i>	Kentish Plover	Common, Winter visitor, few over-summering	Mudflats, coast, mangroves
52			<i>Charadrius mongolus</i>	Lesser Sand Plover	Common, Winter visitor	Mudflats, coast, mangroves
53			<i>Charadrius leschenaultii</i>	Large or Greater Sand Plover	Common, Winter visitor	Mudflats, Sandflats
54	Scolopacidae		<i>Limosa limosa</i>	Black-tailed Godwit	Common, Winter visitor	Sandflats, Pond
55			<i>Limosa lapponica</i>	Bar-tailed Godwit	Common, Winter visitor	Sandflats, Pond
56			<i>Numenius phaeopus</i>	Whimbrel	Common, Winter visitor	Mudflats
57			<i>Numenius arquata</i>	Eurasian Curlew	Common, Winter visitor	Mudflats
58		<i>Tringa erythropus</i>	Spotted Redshank	Rare, Winter visitor	Mudflats	
59		<i>Tringa nebularia</i>	Greenshank	Common, Winter visitor	Mudflats, mangroves, coast	
60		<i>Tringa ochropus</i>	Green Sandpiper	Rare, Winter visitor	Marshes	
61		<i>Tringa stagnatilis</i>	Marsh Sandpiper	Rare, Winter visitor	Marshes	
62		<i>Tringa totanus</i>	Redshank	Common, Winter visitor	Coast, mudflats, marshes, mangroves	
63		<i>Xenus cinereus</i>	Terek Sandpiper	Common, Winter visitor	Mudflats, marshes, coast	
64		<i>Actitis hypoleucos</i>	Common Sandpiper	Common, Winter visitor	Mangroves, marshes, coast	
65		<i>Gallinago gallinago</i>	Common or Fantail Snipe	Rare, Winter visitor	Mangrove channel	
66		<i>Phalaropus lobatus</i>	Red-necked Phalarope	Rare, Winter visitor	Coast, offshore	
67	<i>Calidris alba</i>	Sanderling	Rare, Winter visitor	Coast, mudflats		
68	<i>Calidris alpina</i>	Dunlin	Common, Winter visitor	Coast, mudflats		

Continued

No.	Orders	Families	Name of species	Common name	Status	Habitat
69			<i>Calidris minuta</i>	Little Stint	Common, Winter visitor	Coast, mudflats
70		Laridae	<i>Larus hemprichii</i>	Sooty Gull	Common, Summer visitor	Coast
71			<i>Larus argentatus</i>	Herring Gull	Common, Winter visitor	Coast, marshes
72			<i>Larus fuscus</i>	Lesser Black-backed Gull	Rare, Winter visitor	Coast, marshes
73			<i>Larus ichthyaetus</i>	Great Black-headed Gull	Common, Winter visitor	Coast, marshes, pond
74			<i>Larus brunnicephalus</i>	Brown-headed Gull	Rare, Winter visitor	Coast, marshes, pond
75			<i>Larus ridibundus</i>	Black-headed Gull	Common, Winter visitor	Coast, marshes, mangroves, pond
76			<i>Larus genei</i>	Slender-billed Gull	Common, Winter visitor	Coast, marshes
77		Sternidae	<i>Chlidonias hybridus</i>	Whiskered Tern	Rare, Year Round visitor	Marshes
78			<i>Gelochelidon nilotica</i>	Gull-billed Tern	Common, Winter visitor	Coast, estuaries, marshes, pond
79			<i>Sterna caspia</i>	Caspian Tern	Common, Year Round visitor	Coast, estuaries, marshes, pond
80			<i>Sterna hirundo</i>	Common Tern	Rare, Summer visitor	Coast
81			<i>Sterna repressa</i>	White-cheeked Tern	Rare, Summer visitor	Coast
82			<i>Sterna albifrons</i>	Little Tern	Common, Resident	Coast, pond
83			<i>Sterna bergii</i>	Large Crested Tern	Rare, Winter visitor	Coast, estuaries, pond
84			<i>Sterna bengalensis</i>	Lesser Crested Tern	Rare, Year Round visitor	Coast, estuaries, pond
85			<i>Sterna sandvicensis</i>	Sandwich Tern	Common, Post monsoon/Winter visitor	Coast, marshes, pond
86	Cuculiformes	Cuculidae	<i>Eudynamis scolopacea</i>	Koel	Common, Local Migrant	Plains
87	Caprimulgiformes	Caprimulgidae	<i>Caprimulgus europaeus</i>	European Nightjar	Rare, Resident	Mangroves
88	Apodiformes	Apodidae	<i>Apus affinis</i>	House Swift	Common, Resident	Plains
89	Coraciiformes	Alcedinidae	<i>Ceryle rudis</i>	Pied King Fisher	Common, Resident	Near water
90			<i>Alcedo atthis</i>	Common Kingfisher	Common, Resident	Near water
91			<i>Halcyon smyrnensis</i>	White-breasted Kingfisher	Rare, Resident	Near water
92		Meropidae	<i>Merops superciliosus</i>	Blue-cheeked Bee-eater	Rare, Resident	Mangroves
93			<i>Merops orientalis</i>	Little Green Bee-eater	Common, Resident	Mangroves
94		Upupidae	<i>Upupa epops</i>	Hoopoe	Rare, Resident	Mangroves
95	Passeriformes	Alaudidae	<i>Calandrella raytal</i>	Indian Sand Lark	Rare, Resident	Mangroves

Continued

No.	Orders	Families	Name of species	Common name	Status	Habitat
96			<i>Galerida cristata</i>	Crested Lark	Common, Resident	Plains
97		Hirundinidae	<i>Hirundo rustica</i>	Common or Barn Swallow	Common, Winter visitor, on passage	Open area near mangroves
98			<i>Hirundo daurica</i>	Red-rumped Swallow	Common, Winter visitor, on passage	Plains
99		Motacillidae	<i>Motacilla alba</i>	White Wagtail	Common, Winter visitor	Mangroves
100			<i>Motacilla cinerea</i>	Grey Wagtail	Common, Winter visitor	Mangroves
101			<i>Motacilla citreola</i>	Citrine Wagtail	Rare, Winter visitor	Mangroves
102			<i>Motacilla flava</i>	Yellow Wagtail	Common, Winter visitor	Mangroves
103		Pycnonotidae	<i>Pycnonotus cafer</i>	Red-vented Bulbul	Rare, Resident	Plains, mangroves
104			<i>Pycnonotus leucogenys</i>	White-cheeked Bulbul	Common, Resident	Plains, mangroves
105		Laniidae	<i>Lanius collurio</i>	Bay Backed Shrike	Common, Winter visitor	Mangroves
106		Turdidae	<i>Oenanthe picata</i>	Eastern Pied Wheatear	Common, Winter visitor	Plains, mangroves
107			<i>Saxicoloides fulicata</i>	Indian Robin	Resident	Mangroves
108		Sylviidae	<i>Prinia buchanani</i>	Rufous-fronted Wren Warbler	Common, Resident	Mangroves
109		Nectariniidae	<i>Nectarinia asiatica</i>	Purple Sunbird	Common, Resident	Mangroves
110		Zosteropidae	<i>Zosterops palpebrosa</i>	White Eye	Common, Resident	Mangroves
111		Passeridae	<i>Passer domesticus</i>	House Sparrow	Common, Resident	Plains, mangroves, human habitation
112		Sturnidae	<i>Acridotheres tristis</i>	Common Myna	Common, Resident	Near water
113			<i>Acridotheres ginginianus</i>	Bank Myna	Common, Resident	Near water
114		Corvidae	<i>Corvus splendens</i>	Indian House Crow	Resident, Common	Plains, mangroves

are migratory; 66 species winter visitors and 4 species summer visitors. Winter visitors are non-breeding migrants and summer visitors are migrant in summer season but not breeding, usually seen from March to August. Besides, 3 species are year-round visitors that means non-breeding migrants seen through out the year and 2 species are local migrants. Only 39 species are resident in the area. Of 114 species, one species is vulnerable, 49 species

are rare or less common and 64 species are commonly observed. The species showing marked population decline in the area over the years or occurring in small, isolated population or in fragmented habitat have been considered as rare. The species that has the probability of disappearance from the area is vulnerable.

The area is important as some important species of birds like dalmatian pelican, avocet, little

green heron, crab plover, lesser-crested tern have been recorded from the area.

The migratory birds start arriving in the area in late August and early September and generally, the first to arrive here are little stints, dunlins and plovers. The majority of migratory birds leave by May. The peak season for birds is December to February. The most numerous birds on the coast are shorebirds or waders and a variety of gulls, which are seen throughout the year. June and July is the lean period. The birds are widely distributed in the area.

Though grebes and anatids (ducks) are rarely observed on the coast but they have regularly been observed on the saline pond in the backwater of the main coast. The area is a staging ground and the ducks stop over here for a short period during migration. As many as nine species of ducks and three species of grebes were recorded. Avocets and flamingos are regularly observed on the saline pond and flocks of more than a thousand birds are sometime seen there.

The charadriids (plovers) and scolopacids (sandpipers, stints, curlew, godwits) visit the area in large numbers. Some waders like curlew, whimbrel, dunlin, little stint, lesser sand plover, little ringed plover and Kentish plover are mainly winter visitors but some stay in summer also but there is no evidence of breeding of these birds in this area.

The gulls are opportunistic feeders and therefore, they are mostly observed near the fish landings and the areas where fish is easily available. According to the observations, black-headed gull, slender-billed gull and herring gull were most numerous. Brown-headed gull is less common and sooty gull is seen in summer in very small numbers. Among terns, sandwich tern, common tern and little tern were numerous. The least abundant species of terns were whiskered tern, white cheeked tern, crested tern and lesser crested tern.

Among birds of prey, black kite and brahminy kite are resident in the area. The area supports a large population of black kite. Brahminy kite and shikra are found mainly in the mangrove areas. Common buzzard is a rare passage migrant and winter visitor.

Pied and white-breasted kingfishers are common and usually seen sitting on the branches of

mangroves at the water's edge and flying over water and scanning it for food. The blue cheeked and little green bee-eater is also common and mainly found near mangroves.

Among passerines, crested lark, sand lark and white-cheeked bulbuls are common. Swallow, red-rumped swallow and bay backed shrike are common passage migrants in this area. White, grey, yellow and citrine wagtails are found in winter from September to April. The other passerines resident in the area, mainly near mangroves are Indian robin, rufous fronted prinia, purple sunbird and white-eye. The rufous fronted prinia has been found nesting in mangroves. Common and bank myna and house sparrow are also common in the area.

The area is very important as a unique wetland habitat. There are adverse impacts of pollution, habitat degradation, development and growing human habitation (Scott, 1989). Regular monitoring is necessary and an action plan is required to be prepared for the protection of the area and its biodiversity. The area may be declared as a nature reserve to protect the biodiversity of the important ecosystem.

ACKNOWLEDGEMENT

The authors are thankful to WWF – DGIS Tropical Forest Portfolio for support in establishing the Wetland Centre at Sandspit, through which this study could be made. HRH Prince Bernhard of the Netherlands is also acknowledged for providing support during 2002 – 2004 for carrying out this study.

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(Received 22 August 2007, revised 26 June 2008)