

# Water Bird Diversity of Dumas Coastal Line, Surat (Guj.), India.

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**ABSTRACT:** The western part of Surat district is bounded by Arabian sea. Throughout this whole coastal line, Dumas is one of the richest areas in view of avifaunal diversity. This coastal line was studied for one-year period, from January 2015 to December 2015, for determining the species diversity of aquatic avifauna which is inhabited by a variety of coastal birds, wading birds and shore birds. Fluctuation of temperature in different seasons affected the avifaunal diversity in the study area. This habitat attracted 38 avifaunal species belonging to 03 orders; 09 families, out of which 11 species were resident and 27 species were found to be winter migratory. Among these, Scolopacidae and Laridae are the dominating families of the aquatic birds. Eurasian oystercatcher was first time recorded in this study area during study period. During winter season, avifaunal diversity was maximum, while minimum in monsoon season.

**KEYWORDS:** Water birds, Diversity, Residential Migratory, Migratory, Occurrences

## I. INTRODUCTION

Wetlands, the home of water animals, birds and amphibians, cover diverse and heterogeneous assemblage of habitats such as lakes, rivers, mud flats, inter tidal areas, estuaries, mangroves, coastal areas and others. Amongst different geographical conditions, some parts of Gujarat fall in Arid, Semiarid, Western Ghats and Coastal regions. The special significance of Gujarat is that it has the longest coastal line among Indian states. Because of 1600 kms coastal line and the number of coastal wetlands in Gujarat is highest in western region. One of the major migratory route passes through the Gujarat state, which receives enormous congregation of migratory birds from the countries like Europe and Siberia. Generally, coastal line has rich diversity of small and large wading birds as well as aerial foragers which are good indicators of this habitat. The south western coastal line of Gujarat supports rich diversity of shore birds hence study was carried out in this field.

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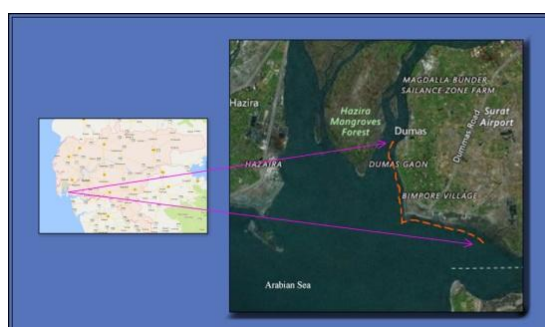
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## II. STUDY AREA

Dumas coastal line area is a semi urban sandy beach along the Arabian sea located about 23 km south west of Surat city. It is situated on 21°05'22.52"N & 72°42'48.74"E (fig: 1).

**Fig: 1 Google satellite image of Gavier lake, Surat district, Gujarat**



This study area covers approx. 8 km along the sea and is highly affected by high and low tide variation which directly influence avifaunal population in particular area. Human disturbance on the beach is major problem because of popularity of holistic place. Mangroves plantation provides best habitat for many aquatic species. Local people of surrounding villages are called "Macchhimar community" depends on coastal area for fishing.

## III. METHODOLOGY

The aquatic avifaunal survey of Dumas costal line was conducted by using binocular (10-30×70mm). The weekly study was carried out for the period of one year from January 2015 to December 2015. Identification was done with the help of field guides given by Ali Salim (1996), Grimmett and Inskipp (1999). Regular surveys were done by systematically walking on fixed routes through the study area. Birds were mostly observed during the most active period (approx. tidal timings) of the day, i.e., from 6:00 am to 9:00 am and from 4:00 pm to 6:00 pm. Some extra visits were also made for observations according to convenience. The detailed study was made with the help of photographs taken by Sony Alpha A 77-M II camera. Observations were recorded viz. types of habitat, seasons and frequency of occurrence.

## IV. RESULTS & DISCUSSION

The coastal line avifauna constitute an important group of wetland species. Total 38 species were recorded during the study period, out of which 23 species were winter migratory, 09 species were residential migratory and 06 were residential species. Aquatic avifauna at this location belong to order Charadriiformes, Ciconiiformes and Anseriformes, distributed into 09 families (Graph - 1).

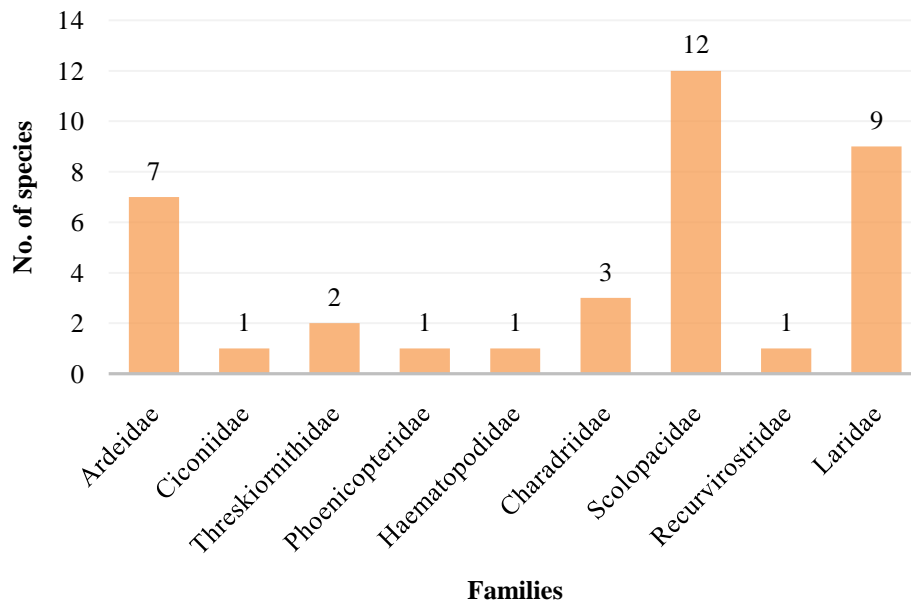
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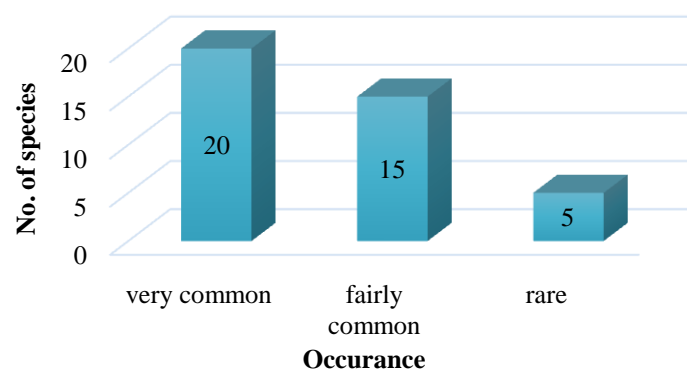
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**Graph - 1. Showing family wise distribution of species in study area**



All these species reached at their pick in numbers during the month of October, November and December. The most abundant and very common winter migratory (Graph-2) species recorded during study were Common sandpiper, Eurasian curlew, Common redshank, Common greenshank, Terek sandpiper, Little stint, Brown headed gull and Gull billed tern. Normally, Eurasian oystercatcher is common winter migratory species in North Western area of Gujarat but in South West coastal line this species is recorded as isolated species. During this study, Eurasian oystercatcher recorded first time and only single bird is noted at Dumas coastal line.

**Graph - 2. Showing occurrence of different species in study area.**



These birds depend more on shallow water and mud flats. It's important to note that avifauna used this habitat maximum during low tide. The study made by Puttick,1981; Evans and Dugan, 1984 revealed that mudflats and swallow water are the most important habitat for shorebirds which provide good site for foraging and availability of prey.

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**Table - 1. Checklist of aquatic avifauna at Dumas coastal line, Surat.**

No.	Common name	Scientific name	Status	Occurrence	IUCN status
1	Grey heron	<i>Ardea cinerea</i>	RM	VC	LC
2	Black crowned night heron	<i>Nycticorax nycticorax</i>	RM	VC	LC
3	Indian pond heron	<i>Ardeola grayii</i>	R	VC	LC
4	Western reef egret	<i>Egretta gularis</i>	R	VC	LC
5	Large egret	<i>Casmerodius albus</i>	R	VC	LC
6	Intermediate egret	<i>Mesophoyx intermedia</i>	R	VC	LC
7	Little egret	<i>Egretta garzetta</i>	R	VC	LC
8	Painted stork	<i>Mycteria leucocephala</i>	RM	VC	NT
9	Black necked white ibis	<i>Threskiornis melanocephalus</i>	RM	VC	NT
10	Eurasian spoonbill	<i>Platalea leucorodia</i>	RM	FC	LC
11	Lesser flamingo	<i>Phoenicopterus minor</i>	M	FC	LC
12	Eurasian oystercatcher	<i>Haematopus ostralegus</i>	M	RA	NT
13	Kentish plover	<i>Charadrius alexandrinus</i>	M	FC	LC
14	Little ringed plover	<i>Charadrius dubius</i>	M	VC	LC
15	Lesser sand plover	<i>Charadrius mongolus</i>	M	FC	LC
16	Sanderlings	<i>Calidris alba</i>	M	FC	LC
17	Little stint	<i>Calidris minuta</i>	M	FC	LC
18	Temminck's stint	<i>Calidris temminckii</i>	M	FC	LC
19	Eurasian curlew	<i>Numenius arquata</i>	M	VC	LC
20	Terek sandpiper	<i>Xenus cinereus</i>	M	VC	LC
21	Common sandpiper	<i>Actitis hypoleucos</i>	RM	VC	LC
22	Wood sandpiper	<i>Tringa glareola</i>	M	RA	LC
23	Green sandpiper	<i>Tringa ochropus</i>	M	RA	LC
24	Marsh sandpiper	<i>Tringa stagnatilis</i>	M	RA	LC

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25	Curlew sandpiper	<i>Calidris ferruginea</i>	M	FC	LC
26	Common redshank	<i>Tringa tetanus</i>	M	VC	LC
27	Spotted redshank	<i>Tringa erythropus</i>	M	FC	LC
28	Common greenshank	<i>Tringa nebularia</i>	M	VC	LC
29	Black winged stilt	<i>Himantopus himantopus</i>	RM	VC	LC
30	Brown headed gull	<i>Larus brunnicephalus</i>	M	VC	LC
31	Pallas's gull	<i>Ichthyaetus ichthyaetus</i>	M	FC	LC
32	Heuglin gull	<i>Larus fuscus heuglini</i>	M	RA	LC
33	River tern	<i>Sterna aurantia</i>	R	VC	LC
34	Gull billed tern	<i>Gelochelidon nilotica</i>	RM	VC	LC
35	Common tern	<i>Sterna hirundo</i>	M	VC	LC
36	Whiskered tern	<i>Chlidonias hybridus</i>	RM	FC	LC
37	Black bellied tern	<i>Sterna acuticauda</i>	M	FC	LC
38	Caspian tern	<i>Sterna caspia</i>	M	FC	LC

**Abbreviations :** FC - Fairly common, VC - Very common, RA - Rare, RM - Residential migratory, M - Migratory, R - Residential, LC - Least concern, NY - Near threatened

### V. CONCLUSION

The present work establishes the richness of the Dumas Coastal line area in respect of bird fauna which are excellent indicators of ecological health. However, the future of this avian fauna is in danger due to anthropogenic activities and tourism place development.

### VI. ACKNOWLEDGEMENT

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