

# Second Trimonthly report of the Avifaunal survey carried out in 10 km radius area of Navi Mumbai International Airport (NMIA)

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## Second Tri-monthly report of the Avifaunal survey carried out in 10 km radius area of Navi Mumbai International Airport (NMIA)

**Summary:** The surveys were carried out during March to May 2012, in 10 km radius area of proposed Navi Mumbai International Airport (NMIA). Study period was summer season and therefore our aim was to study the distribution and movement of birds in survey area as compared to the previous survey carried out in winter. Due to shrinking of smaller water bodies, wetland birds were observed congregating in large numbers and moving towards larger water bodies. Such type of movement was seen mainly in N-W region of study area towards coastal side. It was also found that easy access to mangrove and mudflat enabled us to reach in remote areas.

**Keywords:** Navi Mumbai International Airport, Avifauna, winter, summer, Wetlands, birds.





## I. Introduction

### Background

Ministry of Environment and Forests (MoEF) has given the clearance to NMIA project on the basis of many conditions. One of the conditions (condition number xxxi provided under specific conditions) is that an avifaunal study shall be carried out in consultation with BNHS. First bird survey was carried out in 10 km radius area of Navi Mumbai International Airport (NMIA), during November 2011 to February 2012. This study was designed to document bird diversity and species composition in the various habitats of study areas. Thus first tri-monthly report was submitted in April 2012 based on study of near about 300 sq km area (Narwade & Rahmani, 2012).

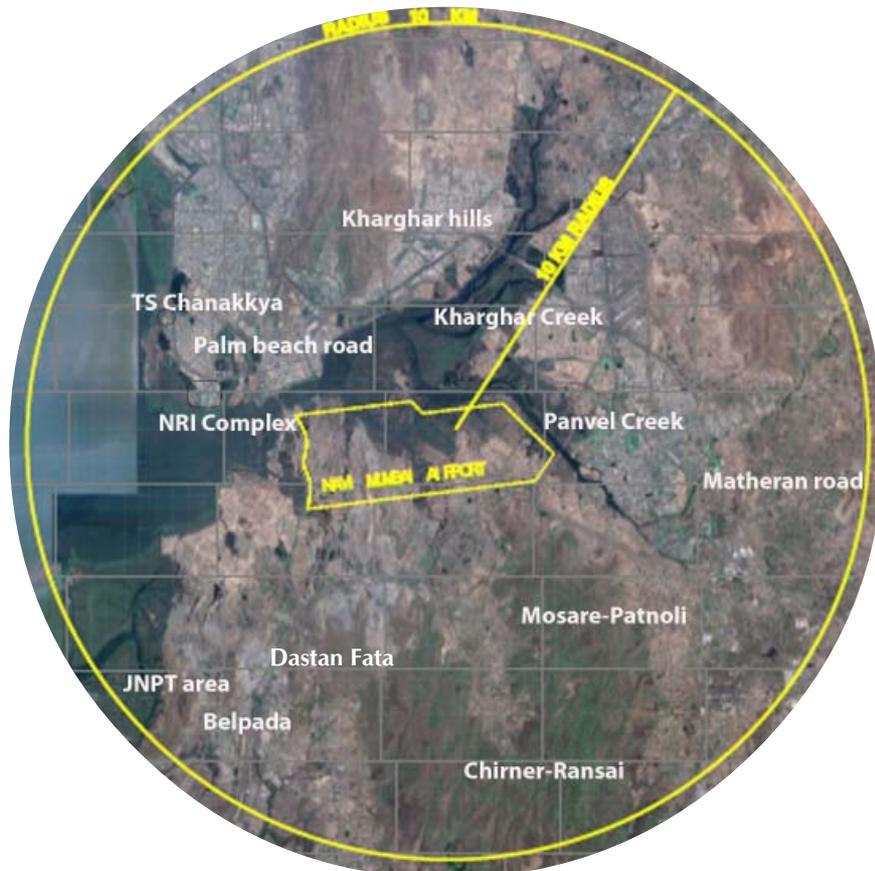
### II. Study area

Study was carried out in following areas excluding industrial areas and dense human habitations. For details, please see the maps provided on page no. 3.

- (1) Proposed site of NMIA – It includes mangroves and backwaters near villages such as Kombadbhuja, Ulve, Dungi, Pargaon, Chinchpada and Kopar, as well as creeks of Kharghar, Gadhi, Ulve, Kalamboli and Panvel. Data was collected from wetlands, creeks, paddy fields, mangroves, mudflats, open scrub/shrubland as well as from near human habitation.
- (2) North-West: This includes grass/shrubland and rocky seashore area behind TS Chanakya, water bodies in between NRI Complex-DPS School on Palm Beach Road, Belapur Pond and part of Parsik Hills.
- (3) North-East – This block includes areas of Taloja, Panvel, Tembhode, Kewale, Nere and Pali. Area near Pali and Nere is hilly.
- (4) South-West (Uran-JNPT area): Includes small wetlands and mangroves spread all over the region near the villages Jasai, Belpada, Gawhan, Uran, Jaskhar and Funde.
- (5) South-East (Hilly areas) – This block mainly consists of reserve forest patches in adjoining areas of villages such as Mosare, Patnoli and Ransai, etc. part of which comes under southern moist mixed deciduous forest patch was recently added to Karnala Bird Sanctuary.

Based on earlier studies of first tri-monthly surveys (December 2011 to February 2012), in summer (March-May 2012), we focussed on following areas for study of distribution and movement of birds.

- (1) Belpada – It is an area near village Belpada reachable from Panvel-JNPT road, 3-4 km from Jasai village. Main wetland is just 500 m from toll plaza towards Karal village. It is surrounded by a container yard on its backside and a large land filled area with grasses and shrubs on the other side. Towards the village area there are saltpans followed by mangroves and ultimately coastal mudflats where many waders were seen foraging during low tide. Such type of mixed habitats provides good habitat for large number of birds.



10 kms radius of proposed NMIA (Courtesy: Google Earth)

**BELPADA AREA**

**Mangrove areas exposed during summer**



**Salt pans where waders such as Common Redshank, Grey Plover and Lesser Sandplover were observed foraging during low tide**



**Shrinking water body at Belpada**



**Grass/shrub land becomes dry in summer**



**Dumping of garbage destroy natural habitat**

- (2) Panvel Creek – It lies on the boundary of the proposed airport area near Kopar and Pargaon villages. Waders were usually seen on rock bed which gets exposed during low tide.
- (3) Kharghar Creek – It lies between Kharghar and Mansarovar stations and is reachable by vehicle from Sion-Panvel highway.
- (4) Palm Beach road – The two most important wetlands in this region, one lies behind NRI Complex and second behind TS Chanakkya of Palm Beach road. These wetlands are followed by paddy fields, trees, mangroves and finally seashore from Palm Beach road towards seaside. It was observed that majority of water birds preferred to gather in this area during summer season.
- (5) Mosare-Patnoli – This area lies on eastern side of Panvel-JNPT road and consists of a rich forest with less human disturbance where many raptor species were observed.
- (6) Ransai-Chirner – This is one of the hilly areas and can be reached from two sides viz. from Panvel-JNPT road as well as from Panvel-Goa road (for details please see map).
- (7) JNPT area – There are many small scattered wetlands across the JNPT-Uran area used by waders during low tide. For example, in a wetland near Jaskhar village Black-tailed Godwit were observed till end of summer season.
- (8) Proposed NMIA site – As there is no construction activity going on in this area at the moment, many birds were observed in the mangroves interspersed by smaller water bodies.
- (9) Dastan fata-Uran: These are the series of small wetlands spread roadside on Panvel-JNPT road near Jasai and Karal villages.



**Caspian Tern - world's largest tern found in many wetlands in survey areas**

### UARN-DASTAN FATA AREA



Comb Ducks were observed only at a wetland near Dastan fata



Shrinking water bodies at Dastan fata



Seasonal changes at wetland near Jaskhar village (In winter and summer)



View of Kharghar Creek which is divided by railway track

**WETLAND AREAS AT PALM BEACH ROAD**



**Congregation of birds in shrinking water body behind NRI Complex**



**Wetland behind NRI Complex dries up completely in summer**



**Majority of water birds shift to a wetland behind TS Chanakya during summer**





### III. Methodology

The areas were surveyed using binoculars and digital camera for proper bird records from November 2011 to May 2012. The birds species were recorded (sighting or call) on the field. Direct observations were made by walking along roads, hills, forest paths, wetlands, mangroves and creek areas. Birds were identified following Ali & Ripley (1983), Grimmett *et. al* (2000) and Rasmussen & Anderton (2005). Photographs of unidentified birds were kept for future study. The list of birds was arranged family-wise following Manakadan & Pittie (2001). GPS locations were taken for preparation of distribution maps and details of the coordinates of the sites visited were collected. Detailed literature survey was incorporated in first tri-monthly report (Narwade & Rahmani, 2012) and which can be used as per the requirement.

Complete count method was used for collecting population data of water birds in wetland areas mentioned in the report. To study the movement of the birds, known roosting and foraging areas were monitored at the same time by the team members.

#### Abbreviations used

- 1) Habitats: P-Paddy field, GS-Mixed habitat of Grassland and Shrub land, RS – Rocky Seashore, W-Wetland, MD- Mudflats, MC-Mangrove and Creeks, NH – Near human habitation, F- forest (thick vegetation)
- 2) Threat categories: EN- Endangered, VU - Vulnerable, NT- Near threatened
- 3) Type of movements: R-Resident, M-Migratory
- 4) NMIA – Navi Mumbai International Airport, BNHS - Bombay Natural History Society, JNPT - Jawaharlal Nehru Port Trust, EIA - Environmental Impact Assessment



**Malabar White-headed Starling, one of the endemic birds of Western Ghats  
seen only behind TS Chanakya of Palm beach road**

## IV. Results

A total of 197 bird species was recorded during the above mentioned survey. Four species were found to come under threatened category as per IUCN. There were 47 bird families representing 197 species, out of which Muscicapidae family shows the highest number of species (27), followed by Scolopacidae (16), Accipitridae (13) and Anatidae (9). Variation in species occurrence and population observed during the study period indicates dynamic nature of the avifauna of the study area which is mainly affected by seasonal changes in water level and tide timing.

## V. Distribution and movement and of birds

For study of congregation and movement of birds, from each block as mentioned in the study area, we selected following sites shown in the map.



### (A) Resident birds

1. Storks, egrets and ibis - Birds such as Painted Stork (40-50), Eurasian Spoonbill (40-50) and Black-headed Ibis (30-40) were seen congregating at Belpada wetland till April end 2012. After shrinking of the water body these birds were observed moving to other areas such as Pargaon (NMIA site), Panvel Creek, behind NRI Complex and Kharghar Creek during day time and returning to Belpada for roosting. After Belpada wetland completely dried up in peak summer these birds were observed in other areas as mentioned above. Near about 200-300 mixed species of egrets were seen congregated at Belpada wetland which later shifted to wetlands of Palm Beach road area.
2. Resident Ducks – After small water bodies dried up Lesser Whistling-duck were seen gathering in large number in the wetland areas of Belpada and TS Chanakya. 15-20 Comb Duck were observed only at Dastan fata area. Spot-billed Duck were observed in all wetland areas.
3. Cormorants – Similarly Indian Shag and Little Cormorant were seen shuffling according to the tide level in all wetland areas. In summer these birds were seen in groups of 100-500 individuals.

### B) Migratory birds

1. Black-tailed Godwit and Marsh Sandpiper – These birds were mainly observed in two wetlands, one at Sanjivani International School area of Kharghar and the second at Belapada wetland. After attaining breeding plumage by April end these birds were not seen in the study area.
2. Common Redshank- Flock of 200-300 Common Redshank was observed roosting at Kharghar Creek and seen feeding in nearby wetland areas during low tide.



3. Migratory Ducks – Duck species such as Northern Shoveler, Northern Pintail, Common Teal, Garganey were observed mainly in Belpada wetland and occasionally in Kharghar Creek area till May 2012.
4. Gulls and terns – In winter these birds were seen all over the wetland areas but in summer only in couple of areas such as Panvel Creek and wetlands near Palm Beach road.
5. Lesser Sandplover and Curlew Sandpiper – These birds were seen congregating in thousands at the wetland behind NRI complex during high tide and feeding in all other mudflats during winter. In summer they were seen mainly at wetlands and seashore area of Palm Beach road and occasionally in Airoli Creek.
6. Lesser Flamingo – 5000-7000 Lesser Flamingo were observed on large tract of mudflats of seashore from Palm Beach road to Airoli Creek and were observed moving towards Trombay jetty during high tide. It was interesting to note that the population of flamingos was less than that observed in winter at Sewri-Mahul area. Based on these observations and enquiry with local fishermen we came to know that flamingos gradually shift to the study area from Sewri-Mahul.
7. Pacific Golden Plover – In winter these birds were observed mainly at rocky seashore of Palm Beach road while in summer they were observed with breeding plumage in Panvel Creek in May 2012.

## VI. Note on threatened and endemic birds of study area

### (A) Threatened birds of study area

Flock of 40-50 Painted Stork *Mycteria leucocephala* (NT) was observed roosting at Belpada wetland during winter. In summer these birds were seen in areas near creeks and larger water bodies. Black-headed Ibis *Threskiornis melanocephalus*(NT) were observed in group of 3-4 birds all over the area at creeks and mangrove areas. Flock of near about 200-250 Black-tailed Godwit *Limosa limosa* (NT) was observed near a wetland opposite to Sanjivani International school as well as at Belpada wetland. Great Spotted Eagle was observed at Uran and Mosare area.

### (B) Endemic birds of Western Ghats seen in study area

Birds endemic to Western Ghats such as Indian Scimitar babbler was observed at Mosare-Patnoli area and heard calling at Chirner. Malabar Lark was seen almost all over. Activity of flock of 7-8 Malabar White-headed Starling was observed only in 2 sq. km area opposite to TS Chanakya, Palm Beach road. Red Spurfowl and White—cheeked Barbet were seen at Chirner and Kharghar hill areas.

**RESIDENT BIRDS**



**Black-crowned Night-heron was commonly seen flying in mangrove areas**



**Red-wattled Lapwing nesting in an open area of Kharghar Creek**



**Common Woodshrike was seen in forest areas of Ransai and Mosare**



**Congregation of herons and egrets at Belpada wetland**



**Crested Serpent-eagle – a common birds of prey seen in the area**



**Eurasian Spoonbill roosting at day time at Belpada**





**Indian Pond-heron in breeding plumage was seen in almost all water bodies**



**Indian Reed-warbler – one of the noisy bird was observed in all mangrove areas**



**Painted Stork mainly seen in Belpada wetland during winter and observed using adjoining wetlands in summer**



**Congregation of Lesser Whistling-duck at Belpada lake in summer**

**MIGRATORY BIRDS IN BREEDING PLUMAGE**



**Flock of Lesser Sandplover in flight**



**40-50 Pacific Golden Plover at Panvel Creek**



**Single Dunlin sighted at seashore area of Palm Beach road**

**MIDGRATORY BIRDS IN BREEDING PLUMAGE**

**Reddish color of Curlew Sandpiper can be clearly seen**



**Black-tailed Godwit was seen till April end**

**FLAMINGOS IN SURVEY AREA**



**Thousands of flamingos were observed feeding at seashore area of Palm beach road**



**Roosting area of Flamingo – wetland behind TS Chanakya at Palm Beach road**



**Flamingos seen floating on water during high tide at Airoli bridge**





## VII) Threats and conservation of birds

Apart from the threats discussed in first tri-monthly report such as hunting, trapping, impact of stone quarries, human disturbance, rapidly changing environment, etc. (Narwade & Rahmani, 2012) we would like to discuss some other threats to the avifauna in study area as following.

1. Chasing of water birds by stray dogs – it was observed twice that stray dogs chase the water birds at wetland areas of Belpada and Palm Beach road. Though we did not see any bird killing by dogs, the birds were disturbed.
2. Spreading of garbage, especially plastic bags in natural habitat of the birds.
3. Land filling – land filling activity was observed commonly at wetland areas of Jasai, Belpada, Palm Beach road, etc. after decreasing of water level, in summer.

### Measures to be taken

1. Development of a system for proper disposal of the garbage, especially the plastic waste.
2. Control on stray dogs especially in summer season at the sites used by the water birds for congregation.
3. Land filling activities should be regulated strictly, especially at important bird sites such as wetlands of Belapada and Palm Beach road area.

## VIII) Discussion

The recent developmental activities in Navi Mumbai have resulted in rapid changes in natural habitats and subsequently the movement and distribution of birds. Thus, it is the need of the hour to monitor the area systematically on a long-term basis with focused study on the status and distribution of birds, with the objective of conservation of their habitats.

In summer we observed that movement of the water birds in study area was increased in N-W block of NMIA site towards coastal area. Appearance of thousands of flamingos and congregation of waders at wetlands of Belpada and Palm Beach road areas indicate importance of focused study on seasonal movements of the wetland birds in these areas.

**THREATS**



**Loss of wetland habitat due to land filing,  
for example at a site behind TS Chanakya, Palm Beach road**



**Spreading of garbage, especially plastic waste in natural habitats**



**Human disturbance – many times people were found throwing cans and bottles at remote places after funfair parties**



**Disturbance to the bird by stray dogs**



**Release of industrial effluents in creeks**



**Collection of fire wood**



Table 1: Family wise bird species count (N = 47)

Sr. No.	Family	No. of species	Sr. No.	Family	No. of species	Sr. No.	Family	No. of species
1.	Podicipedidae	1	17.	Laridae	7	33.	Alaudidae	3
2.	Phalacrocoracidae	3	18.	Columbidae	5	34.	Hirundinidae	2
3.	Ardeidae	8	19.	Psittacidae	2	35.	Campephagidae	4
4.	Ciconiidae	4	20.	Cuculidae	5	36.	Laniidae	3
5.	Threskiornithidae	3	21.	Tytonidae	1	37.	Muscicapidae	22
6.	Anatidae	9	22.	Strigidae	1	38.	Paridae	1
7.	Accipitridae	13	23.	Caprimulgidae	2	39.	Motacillidae	7
8.	Falconidae	1	24.	Apodidae	2	40.	Nectariniidae	2
9.	Pandionidae	1	25.	Alcedinidae	4	41.	Emberizidae	2
10.	Phasianidae	1	26.	Meropidae	2	42.	Estrildidae	5
11.	Phonoecopteridae	1	27.	Coraciidae	1	43.	Passeridae	3
12.	Rallidae	5	28.	Upupidae	1	44.	Sturnidae	3
13.	Recurvirostridae	1	29.	Bucerotidae	1	45.	Oriolidae	2
14.	Jacanidae	2	30.	Capitonidae	2	46.	Dicruridae	2
15.	Charadriidae	7	31.	Picidae	1	47.	Corvidae	3
16.	Scolopacidae	15	32.	Pittidae	1			



**Whiskered Tern (above) is often confused with the Black-bellied Tern because of its black belly in breeding plumage**

## Annexure I: List of birds observed during surveys carried out in 10km radius area of NMIA

Sr. No.	Common and scientific names of the birds	Habitat	WPA schedule	IUCN status	R/M	Sites
<b>Family – Podicipedidae</b>						
1.	Little Grebe <i>Tachybaptus ruficollis</i>	W	IV	LC	R	Dastan Phata, DPS lake, Belapur pond
<b>Family –Phalacrocoracidae</b>						
2.	Little Cormorant <i>Phalacrocorax niger</i>	W	IV	LC	R	All wetland areas
3.	Great Cormorant <i>Phalacrocorax carbo</i>	W	IV	LC	R	Ulve
4.	Indian Cormorant or Indian Shag <i>Phalacrocorax fuscicollis</i>	W	IV	LC	R	All wetland areas
<b>Family – Ardeidae</b>						
5.	Eastern Cattle Egret <i>Bubulcus coromandus</i>	W/P	IV	LC	R	All wetland areas
6.	Intermediate Egret <i>Egretta intermedia</i>	W/P	IV	LC	R	All wetland areas
7.	Great Egret <i>Egretta alba</i>	W	IV	LC	R	All wetland areas
8.	Little Egret <i>Egretta garzetta</i>	W/P/C	IV	LC	R	All wetland areas
9.	Grey Heron <i>Ardea cinerea</i>	W/C	IV	LC	R	All wetland areas
10.	Indian Pond Heron <i>Ardeola grayii</i>	W	IV	LC	R	All wetland areas
11.	Purple Heron <i>Ardea purpurea</i>	W/C	IV	LC	R	All wetland areas
12.	Western Reef Egret <i>Egretta gularis</i>	W/MD	IV	LC	M	Dastan Phata, Nere, Belpada
13.	Black-crowned Night-heron <i>Nycticorax nycticorax</i>	W	IV	LC	R	Kharghar creek, Panvel creek
14.	Striated Heron <i>Butorides striatus</i>	W	IV	LC	R	Uran
<b>Family – Ciconiidae</b>						
15.	Painted Stork <i>Mycteria leucocephala</i> Palm Beach road	W	IV	NT	R	Belpada, Kopar, wetlands at
16.	Asian Openbill <i>Anastomus oscitans</i>	W	IV	LC	R	Dastan Phata,
17.	Woolly-necked Stork <i>Ciconia episcopus</i>	W	IV	LC	R	Dastan Phata, Mosare
18.	Black Stork <i>Ciconia nigra</i>	W	IV	LC	M	Ransai dam
<b>Family – Threskiornithidae</b>						
19.	Oriental White Ibis <i>Threskiornis melanocephalus</i>	W/C	IV	NT	R	All wetlands and mangroves
20.	Eurasian Spoonbill <i>Platalea leucorodia</i>	W	I	LC	R	Jasai, Sanjivani Sch, Belpada
21.	Glossy ibis <i>Plegadis falcinellus</i>	W	IV	LC	M	Karal
<b>Family – Phoenicopteridae</b>						
22.	Greater Flamingo <i>Phoenicopeterus major</i>	W	I	LC	M	Belpada, NRI
23.	Lesser Flamingo <i>Phoenicopeterus minor</i>	W	I	NT	M	Wetlands and Seashore of Palm Beach road
<b>Family – Anatidae</b>						
24.	Ruddy Shelduck <i>Tadorna ferruginea</i>	W	IV	LC	M	Jasai, Sanjivani Sch, Belpada
25.	Northern Pintail <i>Anas acuta</i>	W	IV	LC	M	Belpada
26.	Common Teal <i>Anas crecca</i>	W	IV	LC	M	Belpada
27.	Spot-billed Duck <i>Anas poecilorhyncha</i>	W/C	IV	LC	R	All
28.	Garganey <i>Anas querquedula</i>	W	IV	LC	M	Belpada
29.	Northern Shoveler <i>Anas clypeata</i>	W/C	IV	LC	M	Kharghar creek
30.	Comb Duck <i>Sarkidiornis melanotos</i>	W	IV	LC	R	Dastan Phata
31.	Lesser Whistling-duck <i>Dendrocygna javanica</i>	W	IV	LC	R	Dastan Phata, Belapur pond, Belpada, Palm Beach road
32.	Cotton Teal <i>Nettapus coromandelianus</i>	W	IV	LC	R	Dastan Phata, Belapur pond



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Sr. No.	Common and scientific names of the birds	Habitat	WPA schedule	IUCN status	R/M	Sites
<b>Family – Accipitridae</b>						
33.	Black-shouldered Kite <i>Elanus caeruleus</i>	All	I	LC	R	All areas
34.	Black Kite <i>Milvus migrans</i>	All	I	LC	R	All areas
35.	Brahminy Kite <i>Haliastur indus</i>	W/P	I	LC	R	Belpada, Dastan Phata
36.	Shikra <i>Accipiter badius</i>	All	I	LC	R	All areas
37.	White-eyed Buzzard <i>Butastur teesa</i>	F	I	LC	R	Jasai
38.	Oriental Honeybuzzard <i>Pernis ptilorhynchus</i>	F	I	LC	R	Mosare
39.	Common Buzzard <i>Buteo buteo</i>	F	I	LC	R	Ransai, Chirner
40.	Long-legged Buzzard <i>Buteo rufinus</i>	F	I	LC	R	Mosare
41.	Western Marsh Harrier <i>Circus aeruginosus</i>	W	I	LC	M	All areas
42.	Crested Serpent-eagle <i>Spilornis cheela</i>	F	I	LC	R	Ransai, Mosare
43.	Short-toed Snake-eagle <i>Circaetus gallicus</i>	GS	I	LC	R	Chirner road
44.	Booted Eagle <i>Hieraaetus pennatus</i>	F	I	LC	M	Mosare
45.	Greater Spotted Eagle <i>Aquila clanga</i>	F	I	VU	M	Belpada, Mosare
<b>Family – Falconidae</b>						
46.	Common Kestrel <i>Falco tinnunculus</i>	V	I	LC	R	
		GS	IV	LC	R	Chirner road
<b>Family – Pandionidae</b>						
47.	Osprey <i>Pandion haliaetus</i>	W/C	I	LC	R	Kharghar creek, Belpada
<b>Family – Phasianidae</b>						
48.	Red Spurfowl <i>Galloperdix spadicea</i>	F	-	LC	R	Kaharghar hills
49.	Jungle Bush-quail <i>Perdica asiatica</i>	F	-	LC	R	Ransai, Chirner Road
<b>Family – Rallidae</b>						
50.	White-breasted Waterhen <i>Amaurornis phoenicurus</i>	W/C	IV	LC	R	Dastan Phata, Pargaon
51.	Purple Swampphen <i>Porphyrio porphyrio</i>	W	IV	LC	R	Dastan Phata, Pargaon
52.	Common Moorhen <i>Gallinula chloropus</i>	W	IV	LC	R	Belapur pond, Dastan Phata
53.	Eurasian Coot <i>Fulica atra</i>	W	IV	LC	R	Belapur pond, Dastan Phata
54.	Slaty-breasted Rail <i>Gallirallus striatus</i>	W/C	IV	LC	R	Kharghar creek, Panvel Creek
55.	Ruddy-breasted Crake <i>Porzana fusca</i>	W/C	IV	LC	R	Kharghar creek
<b>Family – Jacanidae</b>						
56.	Bronze-winged Jacana <i>Metopidius indicus</i>	W	IV	LC	R	Belapur pond, Dastan Phata
57.	Pheasant-tailed jacana <i>Hydrophasianus chirurgus</i>	W	IV	LC	R	Belapur pond, Dastan Phata
<b>Family – Charadriidae</b>						
58.	Red-wattled Lapwing <i>Vanellus indicus</i>	ALL	IV	LC	R	All areas
59.	Lesser Sand Plover <i>Charadrius mongolus</i>	W/MD	IV	LC	M	All Mudflats in study area
60.	Greater Sand Plover <i>Charadrius leschenaultia</i>	W/MD	IV	LC	M	Behind NRI complex
61.	Little Ringed Plover <i>Charadrius dubius</i>	W/MD	IV	LC	R	All wetlands
62.	Pacific Golden Plover <i>Pluvialis fulva</i>	W/MD	IV	LC	M	Behind TS Chanakya, Panvel creek
63.	Kentish Plover <i>Charadrius alexandrinus</i>	W/MD	IV	LC	..	All wetlands



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Sr. No.	Common and scientific names of the birds	Habitat	WPA schedule	IUCN status	R/M	Sites
64.	Grey Plover <i>Pluvialis squatarola</i>	W/MD	IV	LC		Belpada, wetlands of Palm Beach Road area
	<b>Family – Scolopacidae</b>					
65.	Common Snipe <i>Gallinago gallinago</i>	W	IV	LC	R	Belpada, Dastan Phata
66.	Common Redshank <i>Tringa tetanus</i>	W/MC	IV	LC	M	All (congregation at Kharghar creek)
67.	Wood Sandpiper <i>Tringa glareola</i>	W/MC	IV	LC	M	All wetlands
68.	Common Sandpiper <i>Tringa hypoleucos</i>	W/MC		LC	R	All wetlands
69.	Common Greenshank <i>Tringa nebularia</i>	W/RS	IV	LC	M	Seashore of Palm Beach road, Belpada
70.	Terek Sandpiper <i>Xenus cinereus</i>	W/MC	IV	LC	M	Kharghar Creek, Kopar
71.	Green Sandpiper <i>Tringa ochropus</i>	W/MC	IV	LC	M	Belpada
72.	Marsh Sandpiper <i>Tringa stagnatilis</i>	W		LC	M	All wetlands (more at belpada)
73.	Black-tailed Godwit <i>Limosa limosa</i>	W	IV	LC	M	Belpada, Sanjivani Sch
74.	Eurasian Curlew <i>Numenius arquata</i>	W	IV	LC	M	Behind NRI complex
75.	Ruddy Turnstone <i>Arenaria interpres</i>	RS	IV	LC	M	Behind TS Chanakya,
76.	Temminck's Stint <i>Calidris temminckii</i>	W		LC	M	All (Large congregation behind NRI complex)
77.	Little Stint <i>Calidris minuta</i>	W	IV	LC	M	All wetland areas
78.	Curlew Sandpiper <i>Calidris ferruginea</i>	W	IV	LC	M	Belpada, Dastan Phata, Sanjivani sch (congregation of 2000 birds behind NRI complex)
79.	Ruff <i>Philomachus pugnax</i>	W	IV	LC	M	Belpada, dastan phata
80.	Dunlin <i>Calidris alpina</i>	W	IV	LC	M	Seashore of Palm Beach road
	<b>Family – Recurvirostridae</b>					
81.	Black-winged Stilt <i>Himantopus himantopus</i>	W	IV	LC	R	All wetland areas
	<b>Family – Laridae</b>					
82.	Gull-billed Tern <i>Gelochelidon nilotica</i>	W	IV	LC	M	All wetland areas
83.	Caspian Tern <i>Sterna caspia</i>	W/C	IV	LC	M	Wetlands of Kamothe, Panvel, Palm Beach Road
84.	Saunders's Tern <i>Sterna saundersi</i>	W/C	IV	LC	M	Wetlands of Palm Beach Road
85.	Whiskered Tern <i>Chlidonias hybridus</i>	W/C	IV	LC	M	Wetlands of Palm Beach Road, Panvel Creek
86.	White-cheeked Tern <i>Sterna repressa</i>	W	IV	LC	M	Jasai
87.	Brown-headed Gull <i>Larus brunnicephalus</i>	W	IV	LC	M	All wetland areas (more than 200 at DPS lake)
88.	Black-headed Gull <i>Larus ridibundus</i>	W	IV	LC	M	All wetland areas
	<b>Family – Columbidae</b>					
89.	Rock Pigeon <i>Columba livia</i>	All/NH		LC	R	All areas
90.	Yellow-footed Green-pigeon <i>Treeron phoenicoptera</i>	F	IV	LC	R	Ransai
91.	Little Brown Dove <i>Streptopelia senegalensis</i>	All	IV	LC	R	All areas



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Sr. No.	Common and scientific names of the birds	Habitat	WPA schedule	IUCN status	R/M	Sites
92.	Eurasian Collared Dove <i>Streptopelia decaocto</i>	GS	IV	LC	R	Uran
93.	Spotted Dove <i>Streptopelia chinensis</i>	All	IV	LC	R	All areas
<b>Family – Psittacidae</b>						
94.	Rose-ringed Parakeet <i>Psittacula krameri</i>	All	IV	LC	R	All areas
95.	Plum-headed Parakeet <i>Psittacula cynocephali</i>	F	IV	LC	R	Ransai
<b>Family – Cuculidae</b>						
96.	Asian Koel <i>Eudynamys scolopaceus</i>	All	IV	LC	R	All areas
97.	Greater Coucal (Southern Coucal) <i>Centropus sinensis</i>	All	IV	LC	R	All areas
98.	Common Hawk Cuckoo <i>Hierococcyx varius</i>	All	IV	LC	R	Mosare, Ransai
99.	Blue-faced Malkoha <i>Phaenicophaeus viridirostris</i>	All	IV	LC	R	Mosare
100.	Sirkeer Malkoha <i>Phaenicophaeus leschenaultia</i>	All	IV	LC	R	Mosare
<b>Family – Tytonidae</b>						
101.	Common Barn-owl <i>Tyto alba</i>	NH	IV	LC	R	Kharghar
<b>Family – Strigidae</b>						
102.	Spotted Owlet <i>Athene brama</i>	F/NH	IV	LC	R	Mosare, Ransai
<b>Family – Caprimulgidae</b>						
103.	Indian Little Nightjar <i>Caprimulgus asiaticus</i>	A/GS	IV	LC	R	Ransai
104.	Indian Jungle Nightjar <i>Caprimulgus indicus</i>	F	IV	LC	R	Ransai
<b>Family – Apodidae</b>						
105.	Little or House Swift <i>Apus affinis</i>	NH		LC	R	All areas
106.	Asian Palm-swift <i>Cypsiurus balasiensis</i>	F/NH		LC	R	All areas
<b>Family – Alcedinidae</b>						
107.	Lesser Pied Kingfisher <i>Ceryle rudis</i>	W	IV	LC	R	Kopar
108.	White-breasted Kingfisher <i>Halcyon smyrnensis</i>	All	IV	LC	R	All areas
109.	Common Kingfisher <i>Alcedo atthis</i>	W	IV	LC	R	All areas
110.	Black-capped Kingfisher <i>Halcyon pileata</i>	W/F	IV	LC	R	Ransai
<b>Family – Meropidae</b>						
111.	Little Green Bee-eater <i>Merops orientalis</i>	All		LC	R	All areas
112.	Blue-tailed Bee-eater <i>Merops philippinus</i>	F/MC		LC	R	Kharghar creek, Mosare
<b>Family – Coraciidae</b>						
113.	Indian Roller <i>Coracias benghalensis</i>	All	IV	LC	R	All areas



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Sr. No.	Common and scientific names of the birds	Habitat	WPA schedule	IUCN status	R/M	Sites
<b>Family – Upupidae</b>						
114.	Common Hoopoe <i>Upupa epops</i>	MC/GS		LC	M	All areas
<b>Family – Bucerotidae</b>						
115.	Indian Grey Hornbill <i>Ocyrceros birostris</i>	F	I	LC	R	Mosare, Ransai
<b>Family – Capitonidae</b>						
116.	Coppersmith Barbet <i>Megalaima haemacephala</i>	F	IV	LC	R	Mosare, Ransai
117.	Brown-headed Barbet <i>Megalaima zeylonica</i>	F	IV	LC	R	Mosare, Ransai
118.	White-cheeked Barbet <i>Megalaima viridis</i>	F	IV	LC	R	Mosare, Chirner
<b>Family – Pittidae</b>						
119.	Indian Pitta <i>Pitta brachyura</i>	F	IV	LC	R	Mosare
<b>Family – Picidae</b>						
120.	Eurasian Wryneck <i>Jynx torquilla</i>	F	IV	LC	R	Mosare
121.	Yellow-fronted Pied Woodpecker <i>Dendrocopos mahrattensis</i>	F	IV	LC	R	Mosare, Nere
<b>Family – Alaudidae</b>						
122.	Ashy -crowned Sparrowlark <i>Eremopterix griseus</i>	GS	IV	LC	R	Uran
123.	Rufous-tailed Finch-Lark <i>Ammomanes phoenicura</i>	All	IV	LC	R	All areas
124.	Malabar Lark <i>Galerida malabarica</i>	ALL	IV	LC	R	All areas
<b>Family – Motacillidae</b>						
125.	Citrine Wagtail <i>Motacila citreola</i>	W/M	IV	LC	M	All areas
126.	Yellow Wagtail <i>Motacila flava</i>	W/M	IV	LC	M	All areas
127.	Grey Wagtail <i>Motacila cinerea</i>	W	IV	LC	M	All areas
128.	White Wagtail <i>Motacila alba</i>	W	IV	LC	M	All areas
129.	Large Pied Wagtail <i>Motacia maderaspatensis</i>	W	IV	LC	R	All areas
130.	Tree Pipit <i>Anthus trivialis</i>	P/GS	IV	LC	M	All areas
131.	Paddyfield Pipit <i>Anthus rufulus</i>	ALL	IV	LC	R	All areas
<b>Family – Hirundinidae</b>						
132.	Wire-tailed Swallow <i>Hirundo smithii</i>	All		LC	R	All areas
133.	Barn Swallow <i>Hirundo rustica</i>	W		LC	R	All areas
<b>Family – Campephagidae</b>						
134.	Common Woodshrike <i>Tephrodornis pondicerianus</i>	F	IV	LC	R	Mosare
135.	Large Cuckooshrike <i>Coracina macei</i>	F	IV	LC	R	Patnoli
136.	Common Iora <i>Aegithina tiphia</i>	F	IV	LC	R	Ransai
137.	Red-vented Bulbul <i>Pycnonotus cafer</i>	All	IV	LC	R	All areas
138.	Red-whiskered Bulbul <i>Pycnonotus jocosus</i>	F/MC	IV	LC	R	All areas



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<b>Family – Laniidae</b>						
139.	Bay-backed Shrike <i>Lanius vittatus</i>	All		LC	R	All areas
140.	Long-tailed Shrike <i>Lanius schach</i>	All		LC	R	All areas
141.	Southern Grey Shrike <i>Lanius meridionalis</i>	GS		LC	R	Chirner road
<b>Family – Muscipidae</b>						
142.	Orange-headed Thrush <i>Zoothera citrina</i>	F	IV	LC	R	Ransai
143.	Jungle Babbler <i>Turdoides striatus</i>	F	IV	LC	R	Ransai, Mosare, Patnoli
144.	Tawny-bellied Babbler <i>Turdoides hyperythra</i>	F	IV	LC	R	Mosare, Patnoli
145.	Yellow-eyed Babbler <i>Chrysomma sinense</i>	F	IV	LC	R	Chirner
146.	Indian Scimitar-babbler <i>Pomatorhinus [schisticeps] horsfieldii</i>	F	IV	LC	R	Chirner, Mosare
147.	Puff-throated Babbler <i>Pellorneum ruficeps</i>	F	IV	LC	R	Mosare, Patnoli
148.	Brown-cheeked Fulvetta <i>Alcippe poioicephala</i>	F	IV	LC	R	Ransai
149.	Black Redstart <i>Phoenicurus ochruros</i>	GS	IV	LC	M	Mosare
150.	Malabar Whistling-thrush <i>Myophonus horsfieldi</i>	F	IV	LC	M	Ransai
151.	Oriental Magpie-robin <i>Copsychus saularis</i>	All	IV	LC	R	All areas
152.	Common Stonechat <i>Saxicola torquatus</i>	All	IV	LC	M	All areas
153.	Pied Bushchat <i>Saxicola caprata</i>	All	IV	LC	R	Uran
154.	Indian Black Robin <i>Saxicoloides fulicatus</i>	All	IV	LC	R	All areas
155.	White-rumped Shama <i>Copsychus saularis</i>	F	IV	LC	R	Ransai
156.	Bluethroat <i>Luscinia svecica</i>	MC	IV	LC	M	Belpada, Kharghar creek, Pargaon
157.	Small Minivet <i>Pericrocotus cinnamomeus</i>	F	IV	LC	R	Mosare
158.	Blue Rockthrush <i>Monticola solitaries</i>	GS	IV	LC	M	Uran
159.	Zitting Cisticola <i>Cisticola juncidis</i>	MC	IV	LC	R	Kopar
160.	Plain Prinia <i>Prinia inornata</i>	All	IV	LC	R	All areas
161.	Ashy Prinia <i>Prinia socialis</i>	All	IV	LC	R	All areas
162.	Grey-breasted Prinia <i>Prinia hodgsonii</i>	All	IV	LC	R	Mosare
163.	Clamorous Reed-warbler or Indian Great Reed-warbler <i>Acrocephalus [strentoreus] bruniscens</i>	MS	IV	LC	M	All creeks and mangrove areas
164.	Common Tailorbird <i>Orthotomus sutorius</i>	All		LC	R	All areas
165.	Lesser Whitethroat <i>Sylvia curruca</i>	GS	IV	LC	M	Uran
166.	Red-breasted Flycatcher <i>Ficedula parva</i>	GS/F	IV	LC	M	Nere
167.	Asian Brown Flycatcher <i>Muscicapa dauurica</i>	MC	IV	LC	M	Kopar
168.	White-browed Fantail-flycatcher <i>Rhipidura albicollis</i>	MC	IV	LC	M	Khargahr creek



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<b>Family – Paridae</b>						
169.	Great Tit <i>Parus major</i>	NH	IV	LC	R	Uran
<b>Family – Nectariniidae</b>						
170.	Purple Sunbird <i>Cinnyris asiatica</i>	All	IV	LC	R	Uran
171.	Purple-rumped Sunbird <i>Leptocoma zeylonica</i>	GS	IV	LC	R	Uran
<b>Family – Emberizidae</b>						
172.	Red-headed Bunting <i>Emberiza bruniceps</i>	GS	IV	LC	M	Paragon
173.	Black-headed Bunting <i>Emberiza melanocephala</i>	GS	IV	LC	M	Paragon, Kharghar Creek
<b>Family – Estrildidae</b>						
174.	Indian Silverbill <i>Euodice malabarica</i>	P	IV	LC	R	All areas
175.	Red Avadavat <i>Amandava amandava</i>	W/MC	IV	LC	R	Belpada, TS Chanakya
176.	Black-headed Munia <i>Lonchura malacca</i>	MC	IV	LC	R	Kharghar creek, TS Chanakya
177.	Scaly-breasted Munia <i>Lonchura punctulata</i>	MC/F	IV	LC	R	Kharghar creek, TS Chanakya, Mosare
178.	White-rumped Munia <i>Lonchura striata</i>	F	IV	LC	R	Mosare
<b>Family – Passeridae</b>						
179.	House Sparrow <i>Passer domesticus</i>	All	IV	LC	R	All areas
180.	Baya Weaver <i>Ploceus philippinus</i>	All	IV	LC	R	All areas
181.	Black-breasted Weaver <i>Ploceus benghalensis</i>	All	IV	LC	R	All areas
182.	Yellow-throated Sparrow <i>Petronia xanthocollis</i>	F/GS	IV	LC	R	Uran, Mosare
<b>Family – Sturnidae</b>						
183.	Rosy Starling <i>Sturnus roseus</i>	All	IV	LC	M	Belpada, Nhava, Kharghar Creek, Pargaon, Kopar
184.	Brahminy Starling <i>Temenuchus pagodarum</i>	GS	IV	LC	R	Uran
185.	Grey-headed Starling <i>Temenuchus malabarica</i>	GS	IV	LC	R	Behind TS Chanakya
186.	Malabar White-headed Starling <i>Temenuchus blythii</i>	GS	IV	LC	R	Behind TS Chanakya
187.	Asian Pied Starling <i>Gracupica contra</i>	GS	IV	LC	R	All areas
188.	Common Myna <i>Acridotheres tristis</i>	All	IV	LC	R	All areas
189.	Jungle Myna <i>Acridotheres fuscus</i>	All	IV	LC	R	Mosare
<b>Family – Oriolidae</b>						
190.	Eurasian Golden Oriole <i>Oriolus oriolus</i>	All	IV	LC	R	All areas
191.	Black-hooded Oriole <i>Oriolus xanthornus</i>	F	IV	LC	R	Ransai



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<b>Family – Dicruridae</b>						
192.	Black Drongo <i>Dicrurus macrocercus</i>	All	IV	LC	R	All areas
193.	Ashy Drongo <i>Dicrurus leucophaeus</i>	F	IV	LC	R	Ransai
194.	White-bellied Drongo <i>Dicrurus caerulescens</i>	F	IV	LC	R	Ransai, Patnoli
<b>Family – Corvidae</b>						
195.	House Crow <i>Corvus splendens</i>	NH	V	LC	R	All areas
196.	Jungle Crow <i>Corvus macrorhynchos</i>	All	IV	LC	R	All areas
197.	Rufous Treepie <i>Dendrocitta vagabunda</i>	F	IV	LC	R	Mosare

