

Central Asian Flyway Action Plan for Waterbirds and their Habitat

Country Report - INDIA

A. Introduction

India situated north of the equator covering an area of about 3,287,263 km² is one of the largest country in the Asian region. With 10 distinctly different bio geographical zones and many different habitat types, the country is known amongst the top 12 mega biodiversity countries. India is known to support 1225 species of bird species, out of these 257 species are water birds. India remains in the core central region of the Central Asian Flyway (CAF) and holds some crucial important wintering population of water bird species. India is also a key breeding area for many other water birds such as Pygmy cormorant and Ruddy-shelduck, globally threatened water birds such as Dalmatian Pelican, Lesser White-fronted Goose, Siberian crane, oriental white stork, greater adjutant stork, white winged wood duck etc.

Being located in the core of the CAF, and several important migration routes the country covers a large intra-continental territory between Arctic and Indian Ocean. Being aware of the importance of the wetlands within the geographic boundary of the India for migrating avifauna, India has developed a wetland conservation programme. India currently has 19 RAMSAR sites. India has identified more than 300 sites which has the potential to be consider as the RAMSAR sites. However, being the second most populus nation in the world with agricultural economy, wetlands are one of the most used habitat with water bird and human interface. Much of the Indian landmass also being dependent to the normal monsoonal rainfall for precipitation is also subjected to extremes of drought and flood making the wetlands vulnerable to drastic ecological changes. It is, therefore, necessary to monitor the wetlands as well as the water birds dependent there on.

India considers its resident water birds as well as wintering waterfowls as national heritage and has developed supportive legislations to protect them. India also has bilateral arrangements with neighbouring nations as well as multilateral agreements to safeguard the migratory waterbirds which migrate beyond national jurisdiction. While under its own National Wildlife Action Plan, conservation and management of water birds is a priority. India also considers it a priority to join hands with regional and international community for developing a frame work and an action plan for proper conservation and management of migrating waterfowls.

The country report detail below summarizes the current state of conservation measures, activities and action plans that are relevant to water bird conservation in the CAF region.

B. National administrative structures for migratory waterbirds and wetlands

The Ministry of Environment and Forests, Government of India is the nodal agency at the federal level for developing strategy, action plan and managing any national, regional and international programmes on water birds and wetlands conservation. The implementation of the action plans are through the states environment and forests agencies with complementing activities provided by a host of academic institutions, NGO-conservation organizations, professional institutions and international agencies. The details are provided below.

Table 1: National administrative structures responsible for managing migratory waterbirds and wetlands

Name of Agency (with contact details)	Geographic scope	Thematic Focus	Principle outputs on waterbirds and wetlands
Ministry of Environment & Forests, Government of India. Contact detail: Director, Wildlife Preservation and Additional Director General (Wildlife), Ministry of Environment & Forests, Paryavaran Bhawan, CGO Complex, Lodhi Road, New Delhi – 110003. ,	Indian mainland, Andaman & Nicobar Islands, and Lakshadweep Island.	Establishment of National Wetland Protected Areas Network, RAMSAR Site Network and Monitoring of key indicator migratory water birds within the country.	<ol style="list-style-type: none"> 1. Compilation of status report on water fowl and wetlands. 2. Supporting research monitoring and management of wetlands and indicator waterfowls.

C. National policy and legislation relating to migratory waterbirds and wetlands

The National Wildlife Action Plan dually supported by the Indian Wildlife (Protection) Act, 1972 provides the legislation relating to migratory water birds and wetlands. In addition, various other legislations such as Environmental Protection Act, Indian Forest Act, Pollution Control Act, Coastal Zone Regulatory Act are some of the additional legislations supporting wetland and migratory waterfowl habitats

managements. Further, India is signatory to CITES, CMS, and such other regional and bilateral agreements with respect to migratory water birds and wetlands.

D. National government institutions involved in migratory waterbirds and wetlands research/management

The Ministry of Environment & Forests, Government of India is the Nodal Agency relating to conservation and management of wetlands and water birds. To this end the MoEF, GOI has a network of National Institutions under its wing whose scope includes research, management, awareness raising, conservation of wetlands and monitoring of migratory water birds. Other Central Government Ministries who supports research on wetlands and water birds are the Ministry of Human Resource Development, Department of Science and Technology, Department of Ocean Development, and Ministry of Agriculture. A network of Universities in the country are also involved on ornithological research.

Table 2: National government institutions involved in migratory waterbirds and wetlands research/management

Name of Institution (with contact details)	Geographic scope	Thematic Focus or programmes	Principle outputs on waterbirds and wetlands
1. Zoological Survey of India, Kolkatta, India.	Entire Country	1. Taxonomic documentation of avifauna including water birds.	1. Inventorization of wetland fauna including water birds.
2. Salim Ali Centre for Ornithology and Natural History, Coimbatore, Tamil Nadu, India.	Entire Country	2. Planning a national network of wetlands Protected Areas. 3. Research on focal wetland fauna including water birds. 4. Impact Assessment studies on wetlands habitats and water birds.	2. Prepared the National Wetland Atlas. 3. Identified a National Network of Probable RAMSAR sites. 4. Prepared species specific action plan for certain water birds
3. Wildlife Institute of India, Dehradun,	Entire Country	1. Development of management plans for wetlands	1. Management plans. 2. Trained man power in the

Uttaranchal, India.		<ul style="list-style-type: none"> Protected Areas. 2. Capacity building and training of managerial capacity in wetlands management. 3. Research and monitoring of wetland habitats and threatened rare and endangered aquatic fauna including water birds. 4. Environmental Impact Assessment of developmental projects on wetlands and water birds. 	<ul style="list-style-type: none"> form of wetland managers and wetland biologists. 3. Status Report on key and indicator wetland habitats and water birds. 4. National Action Plan on resident and migratory cranes.
4. Indian Institute of Forest Management, Bhopal, Madhya Pradesh, India.	Entire Country	<ul style="list-style-type: none"> 1. Economic evaluation and participatory management of wetlands. 	Bhoj Wetland Economic Evaluation
5. Centre for Environment Education, Ahmedabad, Gujarat, India.	Entire Country	<ul style="list-style-type: none"> 1. Environment education and awareness on wetlands and water birds. 	Setting up several interpretation and education centers in important wetland areas including Chilka Lake and Bhoj Wetland.
6. Indian Institute of Economic Growth, New Delhi, India.	Entire Country	Economic evaluation of wetlands	Economic evaluation.
7. Indira Gandhi Institute of	Entire Country	Economic evaluation and policy formulation	Draft National Wetland Policy

Development and Research, Mumbai.			and conservation strategy and action plan
8. Indian Council of Agricultural Research, New Delhi.	Entire Country	Economic Ornithology	Crop damage by migratory water birds

E. Main non-government organizations and academic institutions involved in migratory waterbirds and wetlands research/management

India has over 2000 NGOs working actively in the environmental scenario. However, the Bombay Natural History Society (BNHS), the foremost and the oldest NGO of the country is largely working on water birds and wetlands. Organisations like WWF-India, Wetland International have been instrumental in focusing their attention in development of policy supports, awareness as well as bringing in international projects for wetland and water birds conservation.

Table 3: Main non-government organizations and academic institutions involved in migratory waterbirds and wetlands research/management

Name of non-government organization/ University (with contact details)	Geographic scope	Thematic Focus or programmes	Principle outputs on waterbirds and wetlands
1. Bombay Natural History Society, Mumbai, India.	Entire Country	<ol style="list-style-type: none"> 1. Ornithological studies of all kinds of waterfowls. 2. Migration studies through bird ringing. 3. Training on bird ringing and ornithology. 4. Coordination of Asian water fowl count in India. 5. Training capacity development for frontline staff of wetland 	<ol style="list-style-type: none"> 1. Production of Hand Book of Birds of Indian Subcontinent. 2. Production of Important Bird Areas (IBA) of India. 3. Production of Scientific Journal which includes water birds.

		Protected Areas. 6. Advocacy for conservation of water birds and wetlands.	4. Production of ENVIS Bulletin on water birds and wetlands.
2. WWF- India, New Delhi	Entire Country	<ol style="list-style-type: none"> 1. Advocacy for wetlands and waterfowls conservation and management. 2. Awareness and education through natural club movements. 3. Influencing policy initiatives for wetland conservation in India. 4. High Altitude Wetland Programme 	<ol style="list-style-type: none"> 1. RAMSAR sites identification and documentation for MoEF, GOI. 2. Directory of Indian Wetlands 3. Wetland management Handbook. 4. Education and awareness materials.
3. Wetland International South Asia, New Delhi.	Entire Country	<ol style="list-style-type: none"> 1. Advocacy for wetlands and waterfowls conservation and management. 2. Awareness and education through natural club movements. 3. Influencing policy initiatives for wetland conservation in India. 4. Research and coordination 	<ol style="list-style-type: none"> 1. Participatory management plan documents for Loktak, Chilka lake. 2. Economic evaluation.
Aligarh Muslim University, Aligarh	At Regional level	Conducting research on wetland and water birds as well as satellite telemetry study to document migration patterns of migrating	Status and ecology of wetland habitats and waterfowls as well as migratory routes of cranes and bar headed geese.

		cranes and bar headed geese.	
Andhra University Annamalai University Bharathidasan University, Trichy Calcutta University, West Bengal Delhi University Jawaharlal Nehru University (JNU), New Delhi Kerala University, Karyavattom, Trivandrum, Kerala Osmania University, Hyderabad Pondicherry University Punjabi University at Patiala, Punjab Saurashtra University, Rajkot, Gujarat University of Bombay, Mumbai Utkal University, Vani Vihar, Bhubaneshwar University of Pune, Pune	At Regional level	Conducting research on wetland and water birds	Status and ecology of wetland habitats and waterfowls

F. International Instruments

India is signatory to most of the important international instruments on conservation. However, with respect to wetlands and water birds the following are details of international instruments on which India is currently associated with.

Table 4: Main International Instruments (Treaties/Agreements) that are relevant to the migratory waterbirds and wetlands of the country

Instruments – formal	Geographic scope	Thematic Focus	Implementing Strategy or Action Plan
RAMSAR	Entire Country	Conservation of important wetlands that act as wintering ground for the migratory waterfowls	Preparation of conservation action plan for all important RAMSAR sites
Convention on Protection of Migratory Birds between India and Russia	Entire Country and CAF	<ol style="list-style-type: none"> 1. Protection of Migratory Birds between India and USSR through the Wildlife (Protection) Act and safeguarding their wintering grounds. 2. Initiating species specific research and monitoring programmes for certain identified migratory waterfowls. 	An action plan on migratory waterfowls between India and Russia developed (see Appendix I).
Convention on Migratory Species (CMS)	India and neighbouring countries	Determination of staging, wintering and breeding grounds of identified water	1. India is signatory to the CMS Agreement on conservation

		birds.	and management of Siberian Crane between the range countries. 2. Will consider to be a signatory for any such agreement developed under the CMS Convention.
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G. International Programs and Activities

Table 5: International activities involving the countries migratory waterbirds (initiated in or since 2000, earlier programmes may also be included)

Activity	Waterbird Group	International partners	Principle outputs
Siberian crane migratory information	Migratory birds	CMS, ICF, MoEF, GOI	Action plan on Siberian Crane
Bird ringing and monitoring	Both migratory and resident	BNHS- MoEF, GOI	Ringing and monitoring water birds
Satellite tracking technology transfer	Migratory water birds	US-FWS- Smithsonian Institution, MoEF (GOI), WII, BNHS, USGS, AMU	Migratory route information

Conservation of Migratory Birds between India and Russia	Migratory birds	Russia, MoEF, GOI	Convention on Protection of Migratory Birds between India and USSR
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H. List of Regular Breeding and Migratory Waterbirds

Around 257 species of waterfowls are recorded in India, of these, 46 species are rare in India. Of the listed waterfowls, three species are critically endangered, six species are endangered and 13 species are near threatened.

Table 6. List of regular breeding and migratory water birds of India.

SEQ(BNHS)	COMMON NAME (BNHS)	SCI_NAME	Distribution status	ENDEMISM_SC	POPULATION
1	Red-throated Diver	<i>Gavia stellata</i>	X	non-breeder	vagrant
2	Black-throated Diver	<i>Gavia arctica</i>	V	non-breeder	vagrant
3	Little Grebe	<i>Tachybaptus ruficollis</i>	B	non-endemic	abundant
4	Red-necked Grebe	<i>Podiceps griseigena</i>	W	non-breeder	rare
5	Great Crested Grebe	<i>Podiceps cristatus</i>	B	non-endemic	fairly common
6	Horned Grebe	<i>Podiceps auritus</i>	V	non-breeder	vagrant
7	Black-necked Grebe	<i>Podiceps nigricollis</i>	B	non-endemic	uncommon
8	Cape Petrel	<i>Daption capense</i>	V	non-breeder	vagrant
9	Barau's Petrel	<i>Pterodroma barau</i>	V	non-breeder	vagrant
10	Bulwer's Petrel	<i>Bulweria bulwerii</i>	V	non-breeder	vagrant
11	Jouanin's Petrel	<i>Bulweria fallax</i>	O	non-breeder	rare
12	Streaked Shearwater	<i>Calonectris leucomelas</i>	O	non-breeder	rare
13	Wedge-tailed Shearwater	<i>Puffinus pacificus</i>	O	non-breeder	fairly common
14	Flesh-footed Shearwater	<i>Puffinus carneipes</i>	O	non-breeder	uncommon
15	Sooty Shearwater	<i>Puffinus griseus</i>	X	non-breeder	vagrant
16	Short-tailed Shearwater	<i>Puffinus tenuirostris</i>	O	non-breeder	rare
17	Audubon's Shearwater	<i>Puffinus lherminieri</i>	B	non-endemic	common
18	Persian Shearwater	<i>Puffinus persicus</i>	B	non-endemic	uncommon
19	Wilson's Storm-Petrel	<i>Oceanites oceanicus</i>	O	non-breeder	common
20	White-faced Storm-Petrel	<i>Pelagodroma marina</i>	PM	non-breeder	rare
21	Black-bellied Storm-Petrel	<i>Fregatta tropica</i>	V	non-breeder	vagrant
22	White-bellied Storm-Petrel	<i>Fregatta grallaria</i>	X	non-breeder	vagrant
23	Swinhoe's Storm-Petrel	<i>Oceanodroma monorhis</i>	V	non-breeder	vagrant
24	Grey-backed Tropicbird	<i>Phaethon aethereus</i>	O	non-breeder	rare
25	Red-tailed Tropicbird	<i>Phaethon rubricauda</i>	V	non-breeder	vagrant
26	Yellow-billed Tropicbird	<i>Phaethon lepturus</i>	V	non-endemic	uncommon
27	Great White Pelican	<i>Pelecanus onocrotalus</i>	B	non-endemic	fairly common
28	Spot-billed Pelican	<i>Pelecanus philippensis</i>	B	non-endemic	fairly common
29	Dalmatian Pelican	<i>Pelecanus crispus</i>	W	non-breeder	uncommon

30	Masked Booby	<i>Sula dactylatra</i>	O	non-breeder	rare
31	Red-footed Booby	<i>Sula sula</i>	V	non-breeder	vagrant
32	Brown Booby	<i>Sula leucogaster</i>	O	non-breeder	uncommon
33	Pygmy Cormorant	<i>Phalacrocorax pygmeus</i>	X	non-breeder	vagrant
34	Little Cormorant	<i>Phalacrocorax niger</i>	B	non-endemic	common
35	Indian Shag	<i>Phalacrocorax fuscicollis</i>	B	non-endemic	fairly common
36	Great Cormorant	<i>Phalacrocorax carbo</i>	B	non-endemic	common
37	Darter	<i>Anhinga melanogaster</i>	B	non-endemic	fairly common
38	Great Frigatebird	<i>Fregata minor</i>	O	non-breeder	uncommon
39	Lesser Frigatebird	<i>Fregata ariel</i>	O	non-breeder	common
40	Christmas Island Frigatebird	<i>Fregata andrewsi</i>	V	non-breeder	vagrant
41	Little Egret	<i>Egretta garzetta</i>	B	non-endemic	common
42	Western Reef-Egret	<i>Egretta gularis</i>	B	non-endemic	fairly common
43	Pacific Reef-Egret	<i>Egretta sacra</i>	B	non-endemic	fairly common
44	Grey Heron	<i>Ardea cinerea</i>	B	non-endemic	common
45	Goliath Heron	<i>Ardea goliath</i>	V	non-breeder	vagrant
46	White-bellied Heron	<i>Ardea insignis</i>	B	non-endemic	rare
47	Purple Heron	<i>Ardea purpurea</i>	B	non-endemic	common
48	Large Egret	<i>Ardea alba</i>	B	non-endemic	common
49	Median Egret	<i>Mesophoyx intermedia</i>	B	non-endemic	common
50	Cattle Egret	<i>Bubulcus ibis</i>	B	non-endemic	abundant
51	Indian Pond-Heron	<i>Ardeola grayii</i>	B	non-endemic	abundant
52	Chinese Pond-Heron	<i>Ardeola bacchus</i>	B	non-endemic	rare
53	Little Green Heron	<i>Butorides striata</i>	B	non-endemic	fairly common
54	Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>	B	non-endemic	fairly common
55	Malayan Night-Heron	<i>Gorsachius melanolophus</i>	B	non-endemic	rare
56	Little Bittern	<i>Ixobrychus minutus</i>	B	non-endemic	uncommon
57	Yellow Bittern	<i>Ixobrychus sinensis</i>	B	non-endemic	fairly common
58	Chestnut Bittern	<i>Ixobrychus cinnamomeus</i>	B	non-endemic	fairly common
59	Black Bittern	<i>Dupetor flavicollis</i>	B	non-endemic	uncommon
60	Great Bittern	<i>Botaurus stellaris</i>	W	non-breeder	rare
61	Painted Stork	<i>Mycteria leucocephala</i>	B	non-endemic	common
62	Asian Openbill-Stork	<i>Anastomus oscitans</i>	B	non-endemic	common
63	Black Stork	<i>Ciconia nigra</i>	W	non-breeder	fairly common
64	White-necked Stork	<i>Ciconia episcopus</i>	B	non-endemic	fairly common
65	European White Stork	<i>Ciconia ciconia</i>	W	non-breeder	uncommon
66	Oriental White Stork	<i>Ciconia boyciana</i>	W	non-breeder	rare
67	Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>	B	non-endemic	uncommon
68	Lesser Adjutant-Stork	<i>Leptoptilos javanicus</i>	B	non-endemic	uncommon
69	Greater Adjutant-Stork	<i>Leptoptilos dubius</i>	B	non-endemic	rare
70	Glossy Ibis	<i>Plegadis falcinellus</i>	B	non-endemic	fairly common
71	Oriental White Ibis	<i>Threskiornis melanocephalus</i>	B	non-endemic	common
72	Black Ibis	<i>Pseudibis papillosa</i>	B	non-endemic	fairly common
73	Eurasian Spoonbill	<i>Platalea leucorodia</i>	B	non-endemic	fairly common
74	Greater Flamingo	<i>Phoenicopterus roseus</i>	B	non-endemic	common
75	Lesser Flamingo	<i>Phoenicopterus minor</i>	B	non-endemic	fairly common
76	Large Whistling-Duck	<i>Dendrocygna bicolor</i>	B	non-endemic	uncommon
77	Lesser Whistling-Duck	<i>Dendrocygna javanica</i>	B	non-endemic	common

78	White-headed Duck	<i>Oxyura leucocephala</i>	W	non-breeder	rare
79	Mute Swan	<i>Cygnus olor</i>	V	non-breeder	vagrant
80	Whooper Swan	<i>Cygnus cygnus</i>	V	non-breeder	vagrant
81	Tundra Swan	<i>Cygnus columbianus</i>	V	non-breeder	vagrant
82	Bean Goose	<i>Anser fabalis</i>	V	non-breeder	vagrant
83	Greater White-fronted Goose	<i>Anser albifrons</i>	W	non-breeder	rare
84	Lesser White-fronted Goose	<i>Anser erythropus</i>	W	non-breeder	rare
85	Greylag Goose	<i>Anser anser</i>	W	non-breeder	common
86	Bar-headed Goose	<i>Anser indicus</i>	B	non-endemic	common
87	Snow Goose	<i>Anser caerulescens</i>	V	non-breeder	vagrant
88	Red-breasted Goose	<i>Branta ruficollis</i>	V	non-breeder	vagrant
89	Brahminy Shelduck	<i>Tadorna ferruginea</i>	B	non-endemic	common
90	Common Shelduck	<i>Tadorna tadorna</i>	W	non-breeder	rare
91	White-winged Duck	<i>Cairina scutulata</i>	B	non-endemic	rare
92	Comb Duck	<i>Sarkidiornis melanotos</i>	B	non-endemic	uncommon
93	Cotton Teal	<i>Nettapus coromandelianus</i>	B	non-endemic	common
94	Mandarin Duck	<i>Aix galericulata</i>	V	non-breeder	vagrant
95	Gadwall	<i>Anas strepera</i>	W	non-breeder	abundant
96	Falcated Duck	<i>Anas falcata</i>	W	non-breeder	rare
97	Eurasian Wigeon	<i>Anas penelope</i>	W	non-breeder	abundant
98	Mallard	<i>Anas platyrhynchos</i>	B	non-endemic	fairly common
99	Spot-billed Duck	<i>Anas poecilorhyncha</i>	B	non-endemic	common
100	Northern Shoveller	<i>Anas clypeata</i>	W	non-breeder	abundant
101	Andaman Teal	<i>Anas gibberifrons</i>	B	non-endemic	uncommon
102	Northern Pintail	<i>Anas acuta</i>	W	non-breeder	abundant
103	Garganey	<i>Anas querquedula</i>	W	non-breeder	abundant
104	Baikal Teal	<i>Anas formosa</i>	W	non-breeder	rare
105	Common Teal	<i>Anas crecca</i>	W	non-breeder	abundant
106	Marbled Teal	<i>Marmaronetta angustirostris</i>	W	non-endemic	rare
107	Pink-headed Duck	<i>Rhodonessa caryophyllacea</i>	B	non-endemic	extinct?
108	Red-crested Pochard	<i>Netta rufina</i>	W	non-breeder	fairly common
109	Common Pochard	<i>Aythya ferina</i>	W	non-breeder	common
110	Ferruginous Pochard	<i>Aythya nyroca</i>	B	non-endemic	uncommon
111	Baer's Pochard	<i>Aythya baeri</i>	W	non-breeder	rare
112	Tufted Pochard	<i>Aythya fuligula</i>	W	non-breeder	abundant
113	Greater Scaup	<i>Aythya marila</i>	W	non-breeder	rare
114	Long-tailed Duck	<i>Clangula hyemalis</i>	V	non-breeder	vagrant
115	White-winged Scoter	<i>Melanitta fusca</i>	X	non-breeder	vagrant
116	Common Goldeneye	<i>Bucephala clangula</i>	W	non-breeder	rare
117	Smew	<i>Mergellus albellus</i>	W	non-breeder	rare
118	Red-breasted Merganser	<i>Mergus serrator</i>	V	non-breeder	rare
119	Common Merganser	<i>Mergus merganser</i>	B	non-endemic	fairly common
120	Siberian Crane	<i>Grus leucogeranus</i>	W	non-breeder	rare
121	Sarus Crane	<i>Grus antigone</i>	B	non-endemic	fairly common
122	Demoiselle Crane	<i>Anthropoides virgo</i>	W	non-breeder	fairly common
123	Common Crane	<i>Grus grus</i>	W	non-breeder	fairly common
124	Hooded Crane	<i>Grus monacha</i>	V	non-breeder	vagrant
125	Black-necked Crane	<i>Grus nigricollis</i>	B	non-endemic	rare

126	Andaman Crake	<i>Rallina canningi</i>	EB	ENDEMIC	rare
127	Red-legged Crake	<i>Rallina fasciata</i>	B	non-endemic	rare
128	Slaty-legged Crake	<i>Rallina eurizonoides</i>	B	non-endemic	uncommon
129	Blue-breasted Rail	<i>Gallirallus striatus</i>	B	non-endemic	uncommon
130	Water Rail	<i>Rallus aquaticus</i>	B	non-endemic	fairly common
131	Corn Crake	<i>Crex crex</i>	V	non-breeder	vagrant
132	Brown Crake	<i>Amaurornis akool</i>	B	non-endemic	uncommon
133	White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	B	non-endemic	abundant
134	Elwes's Crake	<i>Porzana bicolor</i>	B	non-endemic	rare
135	Little Crake	<i>Porzana parva</i>	W	non-breeder	rare
136	Baillon's Crake	<i>Porzana pusilla</i>	B	non-endemic	fairly common
137	Spotted Crake	<i>Porzana porzana</i>	W	non-breeder	rare
138	Ruddy-breasted Crake	<i>Porzana fusca</i>	B	non-endemic	common
139	Watercock	<i>Gallixrex cinerea</i>	B	non-endemic	fairly common
140	Purple Moorhen	<i>Porphyrio porphyrio</i>	B	non-endemic	common
141	Common Moorhen	<i>Gallinula chloropus</i>	B	non-endemic	abundant
142	Common Coot	<i>Fulica atra</i>	B	non-endemic	abundant
143	Masked Finfoot	<i>Heliopais personata</i>	B	non-endemic	rare
144	Pheasant-tailed Jacana	<i>Hydrophasianus chirurgus</i>	B	non-endemic	common
145	Bronze-winged Jacana	<i>Metopidius indicus</i>	B	non-endemic	common
146	Greater Painted-Snipe	<i>Rostratula benghalensis</i>	B	non-endemic	fairly common
147	Eurasian Oystercatcher	<i>Haematopus ostralegus</i>	W	non-breeder	fairly common
148	European Golden-Plover	<i>Pluvialis apricaria</i>	V	non-breeder	vagrant
149	Pacific Golden-Plover	<i>Pluvialis fulva</i>	W	non-breeder	common
150	Grey Plover	<i>Pluvialis squatarola</i>	W	non-breeder	common
151	Common Ringed Plover	<i>Charadrius hiaticula</i>	W	non-breeder	rare
152	Long-billed Ringed Plover	<i>Charadrius placidus</i>	W	non-breeder	rare
153	Little Ringed Plover	<i>Charadrius dubius</i>	B	non-endemic	abundant
154	Kentish Plover	<i>Charadrius alexandrinus</i>	B	non-endemic	common
155	Lesser Sand Plover	<i>Charadrius mongolus</i>	B	non-endemic	abundant
156	Greater Sand Plover	<i>Charadrius leschenaultii</i>	W	non-breeder	fairly common
157	Caspian Plover	<i>Charadrius asiaticus</i>	V	non-breeder	rare
158	Oriental Plover	<i>Charadrius veredus</i>	V	non-breeder	vagrant
159	Black-fronted Dotterel	<i>Euseyornis melanops</i>	V	non-breeder	vagrant
160	Northern Lapwing	<i>Vanellus vanellus</i>	W	non-breeder	fairly common
161	Yellow-wattled Lapwing	<i>Vanellus malabaricus</i>	B	ENDEMIC	fairly common
162	River Lapwing	<i>Vanellus duvaucelii</i>	B	non-endemic	fairly common
163	Grey-headed Lapwing	<i>Vanellus cinereus</i>	W	non-breeder	uncommon
164	Red-wattled Lapwing	<i>Vanellus indicus</i>	B	non-endemic	abundant
165	Sociable Lapwing	<i>Vanellus gregarius</i>	W	non-breeder	rare
166	White-tailed Lapwing	<i>Vanellus leucurus</i>	W	non-breeder	fairly common
167	Eurasian Woodcock	<i>Scolopax rusticola</i>	B	non-endemic	uncommon
168	Solitary Snipe	<i>Gallinago solitaria</i>	B	non-endemic	uncommon
169	Wood Snipe	<i>Gallinago nemoricola</i>	B	non-endemic	rare
170	Pintail Snipe	<i>Gallinago stenura</i>	W	non-breeder	abundant
171	Swinhoe's Snipe	<i>Gallinago megala</i>	W	non-breeder	rare
172	Great Snipe	<i>Gallinago media</i>	V	non-breeder	vagrant
173	Common Snipe	<i>Gallinago gallinago</i>	B	non-endemic	abundant

174	Jack Snipe	<i>Lymnocyptes minimus</i>	W	non-breeder	uncommon
175	Black-tailed Godwit	<i>Limosa limosa</i>	W	non-breeder	common
176	Bar-tailed Godwit	<i>Limosa lapponica</i>	W	non-breeder	fairly common
177	Whimbrel	<i>Numenius phaeopus</i>	W	non-breeder	fairly common
178	Eurasian Curlew	<i>Numenius arquata</i>	W	non-breeder	common
179	Eastern Curlew	<i>Numenius madagascariensis</i>	X	non-breeder	vagrant
180	Spotted Redshank	<i>Tringa erythropus</i>	W	non-breeder	fairly common
181	Common Redshank	<i>Tringa totanus</i>	B	non-endemic	abundant
182	Marsh Sandpiper	<i>Tringa stagnatilis</i>	W	non-breeder	common
183	Common Greenshank	<i>Tringa nebularia</i>	W	non-breeder	common
184	Spotted Greenshank	<i>Tringa guttifer</i>	V	non-breeder	rare
185	Green Sandpiper	<i>Tringa ochropus</i>	W	non-breeder	abundant
186	Wood Sandpiper	<i>Tringa glareola</i>	W	non-breeder	abundant
187	Terek Sandpiper	<i>Xenus cinereus</i>	W	non-breeder	fairly common
188	Common Sandpiper	<i>Actitis hypoleucos</i>	B	non-endemic	abundant
189	Grey-tailed Tattler	<i>Heteroscelus brevipes</i>	X	non-breeder	vagrant
190	Ruddy Turnstone	<i>Arenaria interpres</i>	W	non-breeder	fairly common
191	Long-billed Dowitcher	<i>Limnodromus scolopaceus</i>	V	non-breeder	vagrant
192	Asian Dowitcher	<i>Limnodromus semipalmatus</i>	W	non-breeder	rare
193	Great Knot	<i>Calidris tenuirostris</i>	W	non-breeder	uncommon
194	Red Knot	<i>Calidris canutus</i>	V	non-breeder	rare
195	Sanderling	<i>Calidris alba</i>	W	non-breeder	fairly common
196	Little Stint	<i>Calidris minuta</i>	W	non-breeder	abundant
197	Rufous-necked Stint	<i>Calidris ruficollis</i>	W	non-breeder	uncommon
198	Temminck's Stint	<i>Calidris temminckii</i>	W	non-breeder	abundant
199	Long-toed Stint	<i>Calidris subminuta</i>	W	non-breeder	uncommon
200	Pectoral Sandpiper	<i>Calidris melanotos</i>	V	non-breeder	vagrant
201	Sharp-tailed Sandpiper	<i>Calidris acuminata</i>	X	non-breeder	vagrant
202	Dunlin	<i>Calidris alpina</i>	W	non-breeder	fairly common
203	Curlew Sandpiper	<i>Calidris ferruginea</i>	W	non-breeder	common
204	Buff-breasted Sandpiper	<i>Tryngites subruficollis</i>	V	non-breeder	vagrant
205	Spoonbill Sandpiper	<i>Eurynorhynchus pygmeus</i>	W	non-breeder	rare
206	Broad-billed Sandpiper	<i>Limicola falcinellus</i>	W	non-breeder	fairly common
207	Ruff	<i>Philomachus pugnax</i>	W	non-breeder	common
208	Ibisbill	<i>Ibidorhyncha struthersii</i>	B	non-endemic	uncommon
209	Black-winged Stilt	<i>Himantopus himantopus</i>	B	non-endemic	common
210	Pied Avocet	<i>Recurvirostra avosetta</i>	B	non-endemic	fairly common
211	Red-necked Phalarope	<i>Phalaropus lobatus</i>	W	non-breeder	fairly common
212	Red Phalarope	<i>Phalaropus fulicarius</i>	V	non-breeder	vagrant
213	Crab-Plover	<i>Dromas ardeola</i>	W	non-endemic	fairly common
214	Stone-Curlew	<i>Burhinus oedicnemus</i>	B	non-endemic	fairly common
215	Great Stone-Plover	<i>Esacus recurvirostris</i>	B	non-endemic	fairly common
216	Beach Stone-Plover	<i>Esacus magnirostris</i>	B	non-endemic	uncommon
217	Collared Pratincole	<i>Glareola pratincola</i>	W	non-endemic	common
218	Oriental Pratincole	<i>Glareola maldivarum</i>	B	non-endemic	fairly common
219	Small Pratincole	<i>Glareola lactea</i>	B	non-endemic	common
220	Brown Skua	<i>Stercorarius antarcticus</i>	V	non-breeder	rare
221	South Polar Skua	<i>Stercorarius maccormicki</i>	V	non-breeder	vagrant

222	Pomarine Jaeger	<i>Stercorarius pomarinus</i>	W	non-breeder	uncommon
223	Parasitic Jaeger	<i>Stercorarius parasiticus</i>	W	non-breeder	rare
224	White-eyed Gull	<i>Larus leucophthalmus</i>	X	non-breeder	vagrant
225	Sooty Gull	<i>Larus hemprichii</i>	V	non-endemic	fairly common
226	Mew Gull	<i>Larus canus</i>	V	non-breeder	vagrant
227	Heuglin's Gull	<i>Larus heuglini</i>	W	non-breeder	common
228	Yellow-legged Gull	<i>Larus cachinnans</i>	W	non-breeder	common
229	Pallas's Gull	<i>Larus ichthyaetus</i>	W	non-breeder	fairly common
230	Brown-headed Gull	<i>Larus brunnicephalus</i>	B	non-endemic	common
231	Black-headed Gull	<i>Larus ridibundus</i>	W	non-breeder	common
232	Slender-billed Gull	<i>Larus genei</i>	W	non-endemic	common
233	Little Gull	<i>Larus minutus</i>	V	non-breeder	vagrant
234	Gull-billed Tern	<i>Gelochelidon nilotica</i>	B	non-endemic	common
235	Caspian Tern	<i>Sterna caspia</i>	B	non-endemic	common
236	River Tern	<i>Sterna aurantia</i>	B	non-endemic	fairly common
237	Lesser Crested Tern	<i>Sterna bengalensis</i>	B	non-endemic	common
238	Large Crested Tern	<i>Sterna bergii</i>	B	non-endemic	common
239	Sandwich Tern	<i>Sterna sandvicensis</i>	W	non-breeder	common
240	Roseate Tern	<i>Sterna dougallii</i>	B	non-endemic	fairly common
241	Black-naped Tern	<i>Sterna sumatrana</i>	B	non-endemic	common
242	Common Tern	<i>Sterna hirundo</i>	B	non-endemic	fairly common
243	Arctic Tern	<i>Sterna paradisaea</i>	V	non-breeder	vagrant
244	Little Tern	<i>Sterna albifrons</i>	B	non-endemic	common
245	Saunders's Tern	<i>Sterna saundersi</i>	B	non-endemic	fairly common
246	White-cheeked Tern	<i>Sterna repressa</i>	B	non-endemic	common
247	Black-bellied Tern	<i>Sterna acuticauda</i>	B	non-endemic	uncommon
248	Bridled Tern	<i>Sterna anaethetus</i>	B	non-endemic	fairly common
249	Sooty Tern	<i>Sterna fuscata</i>	B	non-endemic	fairly common
250	Whiskered Tern	<i>Chlidonias hybrida</i>	B	non-endemic	abundant
251	White-winged Black Tern	<i>Chlidonias leucopterus</i>	W	non-breeder	uncommon
252	Black Tern	<i>Chlidonias niger</i>	PM	non-breeder	rare
253	Brown Noddy	<i>Anous stolidus</i>	B	non-endemic	common
254	Black Noddy	<i>Anous minutus</i>	V	non-breeder	vagrant
255	Lesser Noddy	<i>Anous tenuirostris</i>	V	non-endemic	uncommon
256	White Tern	<i>Gygis alba</i>	V	non-endemic	fairly common
257	Indian Skimmer	<i>Rynchops albicollis</i>	B	non-endemic	uncommon

B: Breeding

EB: Breeding & Endemic to India

W: Winter visitor

O: Occasional and irregular, non-breeding visitors (with no apparent seasonal patterns)

PM: Passage Migrant

V: Vagrant

QM: ? Doubtful Occurrence in India

X: Absent from Indian limits

INT: Introduced

I. Migration Routes, Staging Sites, and Non-breeding Areas

India has about 81 species of migrant waterfowls which are extralimital seasonal immigrants, mostly from Palaearctic Region beyond the Himalayas – in central and northern Asia, and eastern and northern Europe. The most abundant and regular winter migrants are the ducks and geese (Anatidae), waders or shore birds (Charadriidae) and cranes (Gruidae). A large number of migratory species, especially ducks and geese, that enter the subcontinent from the north-west in autumn – when the journey is leisurely performed – sweep down the valley of the Indus river. One arm of the migrational tide branches off early in a south-east direction and debouches into the north Indian plains through Hazara, Kashmir, and the Punjab. The Kagan and Kurram valleys on the northwest frontier of Pakistan have been specifically named in this connexion. The other arm continues southward down the Indus and avoiding the inhospitable expanse of the Thar or Indian desert to the east, veers further south in a south-easterly direction to cross the Great Rann of Kutch, northern Gujarat and Saurashtra and enter the Indian peninsula. This stream is augmented in its course by migrants traveling southeast from West Asia – from the Caspian – Aral region through Iran, Afghanistan, Baluchistan, and Lower Sind. There are some species of waterfowls especially Ruddy Shelduck, Pintail and Barheaded Goose whose southernmost Palaearctic breeding range extends into Indian boundaries in Ladakh, Kashmir and sometimes in central and eastern Himalayas. This, in broad outline, is the general picture that emerges from a consideration of the data available. But it is largely conjectural and hypothetical and needs verifying by more intensive studies (Ali & Ripley, 1983, Alfred *et al.* 2001). However, the recent records of migration over the great Himalayas further signifies the importance of information requirement as to the existence of a separate migration route along the Gangetic Basin and the Brahmaputra valley across the Great Himalayas. Also important is the information about the importance and role played by the high altitude wetlands across the Himalayas.

Fig 1. Major flyways of immigrant waterfowls of India (Alfred *et al.* 2001)

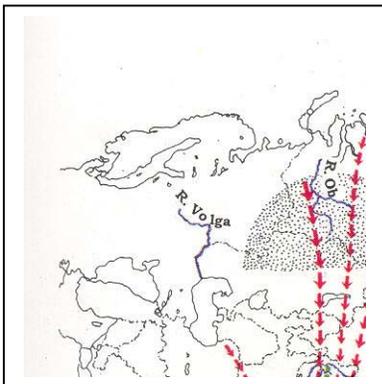


Table 7. The key breeding, staging and non-breeding areas of the India's waterbirds

Sl. No.	Breeding sites	Staging sites	Non-breeding sites*
1	Wular lake	Harike lake	
2	Keoladeo National Park	Keoladeo National Park	
3	Sambar lake	Yamuna river	
4	Chilka lake	Okhla	
5	Loktak lake	Indus	
6	Tso Moriri	Point Calimere	
7	Tso Kar Basin	Vedaraniyam	
8	Kolleru bird sanctuary	Chambal river	
9	Harike Lake	Pong Dam	
10	Kanjli	Caveri	
11	Point Calimere	Gangetic plains	
12	Pong Dam	Brahmaputra	
13	Sasthamkotta	Pulicat lake	
14	Vembanad-Kol	Gulf of Kutch	
15	Ropar	Gulf of Mannar	
16	Ashtamudi wetland	Chushul marshes	
17	Bhitarkanika Mangroves		
18	Bhoj		
19	East Calcutta Wetlands		
20	Kolleru		

* - BNHS-Birdlife International project have jointly produced the Important Bird Areas of India which includes 195 potential RAMSAR sites of India which supports several species of water birds including breeding birds. Asian Waterfowl Count which has been coordinated by BNHS has also identified 166 wetland sites as potential RAMSAR sites. SACON's Inland Wetland Project funded by UNDP has identified 275 inland wetlands sites as important water bird areas and potential RAMSAR sites. All these sites are extremely important in the CAF.

J. Waterbirds of CAF Conservation Concern (WCC)

Table 8. List of migratory birds of CAF conservation concern in India.

Sl. No.	COMMON NAME	SCI_NAME	POPULATION STATUS	STATUS (IUCN Red List)
1	Red-necked Grebe	<i>Podiceps griseigena</i>	rare	others
2	Dalmatian Pelican	<i>Pelecanus crispus</i>	uncommon	conservation dependent
3	Great Bittern	<i>Botaurus stellaris</i>	rare	others
4	Black Stork	<i>Ciconia nigra</i>	fairly common	others
5	European White Stork	<i>Ciconia ciconia</i>	uncommon	others

6	Oriental White Stork	<i>Ciconia boyciana</i>	rare	endangered
7	White-headed Duck	<i>Oxyura leucocephala</i>	rare	endangered
8	Greater White-fronted Goose	<i>Anser albifrons</i>	rare	others
9	Lesser White-fronted Goose	<i>Anser erythropus</i>	rare	vulnerable
10	Greylag Goose	<i>Anser anser</i>	common	others
11	Common Shelduck	<i>Tadorna tadorna</i>	rare	others
12	Gadwall	<i>Anas strepera</i>	abundant	others
13	Falcated Duck	<i>Anas falcata</i>	rare	others
14	Eurasian Wigeon	<i>Anas penelope</i>	abundant	others
15	Northern Shoveller	<i>Anas clypeata</i>	abundant	others
16	Northern Pintail	<i>Anas acuta</i>	abundant	others
17	Garganey	<i>Anas querquedula</i>	abundant	others
18	Baikal Teal	<i>Anas formosa</i>	rare	vulnerable
19	Common Teal	<i>Anas crecca</i>	abundant	others
20	Red-crested Pochard	<i>Netta rufina</i>	fairly common	others
21	Common Pochard	<i>Aythya ferina</i>	common	others
22	Baer's Pochard	<i>Aythya baeri</i>	rare	vulnerable
23	Tufted Pochard	<i>Aythya fuligula</i>	abundant	others
24	Greater Scaup	<i>Aythya marila</i>	rare	others
25	Common Goldeneye	<i>Bucephala clangula</i>	rare	others
26	Smew	<i>Mergellus albellus</i>	rare	others
27	Red-breasted Merganser	<i>Mergus serrator</i>	rare	others
28	Siberian Crane	<i>Grus leucogeranus</i>	rare	critically endangered
29	Demoiselle Crane	<i>Anthropoides virgo</i>	fairly common	others
30	Common Crane	<i>Grus grus</i>	fairly common	others
31	Little Crake	<i>Porzana parva</i>	rare	others
32	Spotted Crake	<i>Porzana porzana</i>	rare	others
33	Eurasian Oystercatcher	<i>Haematopus ostralegus</i>	fairly common	others
34	Pacific Golden-Plover	<i>Pluvialis fulva</i>	common	others
35	Grey Plover	<i>Pluvialis squatarola</i>	common	others
36	Common Ringed Plover	<i>Charadrius hiaticula</i>	rare	others
37	Long-billed Ringed Plover	<i>Charadrius placidus</i>	rare	others
38	Greater Sand Plover	<i>Charadrius leschenaultii</i>	fairly common	others
39	Caspian Plover	<i>Charadrius asiaticus</i>	rare	others
40	Northern Lapwing	<i>Vanellus vanellus</i>	fairly common	others
41	Grey-headed Lapwing	<i>Vanellus cinereus</i>	uncommon	others
42	Sociable Lapwing	<i>Vanellus gregarius</i>	rare	vulnerable
43	White-tailed Lapwing	<i>Vanellus leucurus</i>	fairly common	others
44	Pintail Snipe	<i>Gallinago stenura</i>	abundant	others
45	Swinhoe's Snipe	<i>Gallinago megala</i>	rare	others
46	Jack Snipe	<i>Lymnocyptes minimus</i>	uncommon	others
47	Black-tailed Godwit	<i>Limosa limosa</i>	common	others

48	Bar-tailed Godwit	<i>Limosa lapponica</i>	fairly common	others
49	Whimbrel	<i>Numenius phaeopus</i>	fairly common	others
50	Eurasian Curlew	<i>Numenius arquata</i>	common	others
51	Spotted Redshank	<i>Tringa erythropus</i>	fairly common	others
52	Marsh Sandpiper	<i>Tringa stagnatilis</i>	common	others
53	Common Greenshank	<i>Tringa nebularia</i>	common	others
54	Spotted Greenshank	<i>Tringa guttifer</i>	rare	endangered
55	Green Sandpiper	<i>Tringa ochropus</i>	abundant	others
56	Wood Sandpiper	<i>Tringa glareola</i>	abundant	others
57	Terek Sandpiper	<i>Xenus cinereus</i>	fairly common	others
58	Ruddy Turnstone	<i>Arenaria interpres</i>	fairly common	others
59	Asian Dowitcher	<i>Limnodromus semipalmatus</i>	rare	near threatened
60	Great Knot	<i>Calidris tenuirostris</i>	uncommon	others
61	Red Knot	<i>Calidris canutus</i>	rare	others
62	Sanderling	<i>Calidris alba</i>	fairly common	others
63	Little Stint	<i>Calidris minuta</i>	abundant	others
64	Rufous-necked Stint	<i>Calidris ruficollis</i>	uncommon	others
65	Temminck's Stint	<i>Calidris temminckii</i>	abundant	others
66	Long-toed Stint	<i>Calidris subminuta</i>	uncommon	others
67	Dunlin	<i>Calidris alpina</i>	fairly common	others
68	Curlew Sandpiper	<i>Calidris ferruginea</i>	common	others
69	Spoonbill Sandpiper	<i>Eurynorhynchus pygmeus</i>	rare	vulnerable
70	Broad-billed Sandpiper	<i>Limicola falcinellus</i>	fairly common	others
71	Ruff	<i>Philomachus pugnax</i>	common	others
72	Red-necked Phalarope	<i>Phalaropus lobatus</i>	fairly common	others
73	Brown Skua	<i>Stercorarius antarcticus</i>	rare	others
74	Pomarine Jaeger	<i>Stercorarius pomarinus</i>	uncommon	others
75	Parasitic Jaeger	<i>Stercorarius parasiticus</i>	rare	others
76	Heuglin's Gull	<i>Larus heuglini</i>	common	others
77	Yellow-legged Gull	<i>Larus cachinnans</i>	common	others
78	Pallas's Gull	<i>Larus ichthyaetus</i>	fairly common	others
79	Black-headed Gull	<i>Larus ridibundus</i>	common	others
80	Sandwich Tern	<i>Sterna sandvicensis</i>	common	others
81	White-winged Black Tern	<i>Chlidonias leucopterus</i>	uncommon	others

K. Recommendations to Improve International Migratory Waterbird Conservation

While much of the recommendations will emerge as the consensus outcome of the CAF meeting the Government of India delegation would consider the following points to be the prime and most important recommendations.

1. Identification of all important staging grounds and breeding grounds in the CAF and an action plan for protecting those areas.
2. Species Specific Conservation Plan for important migratory birds listed in the section 'J'
3. Complete ban or control on hunting birds in the CAF.
4. Management of Anthropogenic Activities in the wetlands in CAF.
5. Research and monitoring
6. Education and Public Awareness
7. Facilitation and development of bilateral agreements between neighbouring countries in the region for specific action plans for migratory water birds.
8. Examination and identification of trans-boundary wetlands in the CAF and development of a protocol for their joint management.

Appendix I

***6.2.6 Convention on Protection of Migratory Birds between India and USSR**

Realising the importance of bird protection at the international level and considering that a large number of birds which nest in the USSR and winter in India migrate between both the countries and are under constant threat due to human pressure, a treaty on protection of migratory birds between India and (former USSR) Russia was signed in 1984 for cooperation in protection of bird populations and their habitat.

Under the treaty the governments of India and the former USSR have agreed as follows:

Article I

- 1) in this convention, the term 'Migratory Birds' means:
 - (a) the species of birds for which there is positive evidence of migration between the two countries from the recovery of bands or other markers; and the species of birds with subspecies common to both countries and in the absence of
 - (a) sub species, the species of birds common to both countries.
- 2) the species of birds defined as 'Migratory Birds' in paragraph 1 of this article are birds listed in the appendix to this convention.

Article II

- 1) the contracting parties shall prohibit taking of migratory birds and collection of their eggs. Any sale, purchase or exchange of these birds or their eggs, taken illegally alive or dead and any sale, purchase or exchange of the products thereof or their parts shall also be prohibited other than for mutually agreed purposes.
- 2) each contracting party may fix hunting season in its country bearing in mind preservation of normal reproduction of migratory birds.

Article III

- 1) the contracting parties agrees that to preserve the species and subspecies of birds that are in danger of extinction, measures of special protection are desirable. Each party will inform the other regarding such remedial measures.
- 2) each contracting party shall control the export of species and subspecies of birds specified in paragraph 2 of this article as well as the products thereof or their parts.

Article IV

- 1) the contracting parties shall exchange data and publications' pertaining to research on migratory birds and birds in danger of extinction.
- 2) the contracting parties shall promote coordinated and joint research programs on migratory birds that are in danger of extinction as well as on their preservation.

Article V

- 1) each contracting party shall endeavor to set up sanctuaries and other necessary establishments for the management and protection of migratory birds as well as those are in danger of extinction together with their natural environment.
- 2) each contracting party shall endeavor to take other appropriate measures to preserve and improve the natural environment of birds protected under Articles II and III.

Article VI

Each contracting party agrees to take measures necessary for the attainment of the objectives of this convention.

Article VII

The contracting parties shall hold consultations regarding implementation of this convention at the request of any one of them.

Article VIII

This convention shall not be interpreted as inconsistent with or modifying neither any agreement in force between the contracting parties nor any international obligations adopted by each party.

Article IX

This convention shall be subject to ratification or confirmation by the contracting parties and shall be in force for a period of 15 years with automatic extension for each successive period of five years unless either contracting party declares its desire to terminate it.

***6.2.7 Protocol of 4th Session of Indo-Russian Working Group on Environmental Protection and Natural Resources held on 6.2.2002 at New Delhi**

1. Both the parties endorsed the operation of last protocol signed in Moscow on 27th December, 2000.

**Source: Kumar, et al. 2005. Handbook on Indian wetland Birds and their conservation (in press)*

2. On the investigations of seasonal migration of Siberian Cranes, the Russian Party informed that activity on population monitoring using satellite marking of the Siberian crane and Common crane is proceeding, including the monitoring of the species at nesting site. The work on restoration of the common population of the Siberian crane is underway.
3. Both the parties agreed for developing a joint project entitled “Indo-Russian Siberian Crane Restoration Project”. It would also include involvement of other flyway countries at a later stage.
4. Concept notes on the following two projects were discussed:
 - i) Conservation and monitoring of Migratory birds between India and Russia along the Central Asian Flyway in collaboration with the other Flyway countries.
 - ii) Determining, characterizing, monitoring and devising long term sustainability of the flyway of migratory birds in India.
 Further action would be taken on receiving of comments of Russian Scientists.
5. The parties recognized noticeable results on bird ringing. It is recommended that to improve the future interaction on information exchange on bird ringing and provide a new distribution of functions within the joint activity. Both the Parties agreed to initiate large scale bird ringing programmes simultaneously to exchange data and experts.
6. The Russian Party has performed a preparatory work on assigning the status of Ramsar Sites to the valuable wetlands located within the flyways. The Russian Party approached additionally 10 wetland sites in Russia to be included in the list of Ramsar sites which will be researched specially.
7. During the Session there has been an exchange of the scientific information and published materials on inventory of perspective wetlands.
8. Whereas Russian Party has performed the work to incorporate the sites of the Central-Asian-Indian Flyway located in the Western Siberia and important for the implementation of the Russian-Indian programmes into the GEF project “Protection of Globally Significant Wetlands and migration paths important for the conservation of the Siberian crane and other Asian migrating birds”, Indian Party has also submitted one such project on wetlands in India to GEF. It was. Therefore, agreed to prepare a collaborative and comprehensive project on Conservation of Wetlands on Central –Asian Flyway. Other countries falling in the flyway would also be requested to join the project.
9. The Parties agreed to support interaction with the authorized bodies and finalise the enforcement of the amendments to the Annex of the Convention on Protection of Migrating Birds and their habitats.

Resolutions to be included in the protocol of the 8th Indo-Russian Inter-Governmental Commission

Section: Environmental Protection

1. The Commission recognized that the cooperation in the sphere of protection of the environment and natural resources demonstrated achievements in many aspects. The research institutes and the expert of the Parties have interlinks on information and scientific support of implementation of

- the bilateral obligations within the framework of the Russian Indian Convention on Migratory Birds and their Habitats signed in October 1984. For the period between sessions of IRIGC, a meeting of working group on Environment Protection and Natural Resources has been held.
2. It was agreed that the Siberian Crane is one of the most spectacular migratory species of the Central-Asian-Indian Flyway. The accumulated experience of bi-lateral cooperation with use of the advance technical equipment provides a good opportunity to start implementation of long term plans of actions on conservation of rare species of migratory birds. During the sessions, the Parties discussed the long term joint Plan of Action on conservation and restoration of common Russian-Indian Population of the Siberian Crane. The Parties formulated the options on use of the opportunities of international programmes on conservation of biodiversity within the Central-Asian-Indian Flyway and also that of the international financial institutions for implementation of the projects of Russian-Indian cooperation in the environmental sphere.

Table 6.1. List of migratory wetland bird species under revised Indo-Russian Agreement on conservation of waterbirds (2003)

1. Black-throated Diver *Gavia arctica*
2. Black-necked Grebe *Podiceps nigricollis*
3. Red-necked Grebe *Podiceps griseigena*
4. Great White Pelican *Pelecanus onocrotalus*
5. Dalmatian Pelican *Pelecanus crispus*
6. Great Cormorant *Phalacrocorax carbo*
7. Grey Heron *Ardea cinerea*
- *8. Purple Heron *Ardea purpurea*
9. Large Egret *Casmerodius albus*
10. Little Bittern *Ixobrychus minutus*
11. Great Bittern *Botaurus stellaris*
12. Black Stork *Ciconia nigra*
13. Oriental White Stork *Ciconia boyciana*
14. Glossy Ibis *Plegadis falcinellus*
15. Eurasian Spoonbill *Platalea leucorodia*
16. Greater White-fronted Goose *Anser albifrons*
17. Lesser White-fronted Goose *Anser erythropus*
18. Bar-headed Goose *Anser indicus*
- *19. Greylag Goose *Anser anser*
20. Brahminy Shelduck *Tadorna ferruginea*
21. Common Shelduck *Tadorna tadorna*
22. Northern Pintail *Anas acuta*
23. Marbled Teal *Marmaronetta angustirostris*
24. Baikal Teal *Anas formosa*
25. Common Teal *Anas crecca*
26. Spot-billed Duck *Anas poecilorhyncha*
27. Mallard *Anas platyrhynchos*
28. Gadwall *Anas strepera*
29. Falcated Duck *Anas falcata*
30. Eurasian Wigeon *Anas penelope*
31. Garganey *Anas querquedula*
32. Northern Shoveller *Anas clypeata*
33. Red-crested Pochard *Rhodonessa rufina*
34. Common Pochard *Aythya ferina*
35. Ferruginous Pochard *Aythya nyroca*
36. Baer's Pochard *Aythya baeri*
37. Tufted Pochard *Aythya fuligula*
38. Common Goldeneye *Bucephala clangula*
39. Smew *Mergellus albellus*
40. Common Merganser *Mergus merganser*
41. White-headed Duck *Oxyura leucocephala*
42. Pallas's Fish-Eagle *Haliaeetus leucoryphus*
43. White-tailed Sea-Eagle *Haliaeetus albicilla*
44. Greater Spotted Eagle *Aquila clanga*
45. Steppe Eagle *Aquila nipalensis*
46. Eastern Imperial Eagle *Aquila heliaca*
47. Western Marsh-Harrier *Circus aeruginosus*
48. Osprey *Pandion haliaetus*
49. Peregrine Falcon *Falco peregrinus*
50. Common Moorhen *Gallinula chloropus*
51. Common Crane *Grus grus*
52. Siberian Crane *Grus leucogeranus*
53. Demoiselle Crane *Grus virgo*
54. Water Rail *Rallus aquaticus*
55. Baillon's Crake *Porzana pusilla*
56. Spotted Crake *Porzana porzana*
57. Little Crake *Porzana parva*
58. Common Coot *Fulica atra*
59. Eurasian Oystercatcher *Haematopus ostralegus*
60. White-tailed Lapwing *Vanellus leucurus*
61. Sociable Lapwing *Vanellus gregarius*
62. Northern Lapwing *Vanellus vanellus*
63. Grey Plover *Pluvialis squatarola*
64. European Golden Plover *Pluvialis apricaria*
65. Pacific Golden-Plover *Pluvialis fulva*
66. Greater Sand Plover *Charadrius leschenaultii*
67. Common Ringed Plover *Charadrius hiaticula*
68. Kentish Plover *Charadrius alexandrinus*
69. Little Ringed Plover *Charadrius dubius*
70. Long-billed Ringed Plover *Charadrius placidus*
71. Whimbrel *Numenius phaeopus*
72. Eurasian Curlew *Numenius arquata*
73. Black-tailed Godwit *Limosa limosa*
74. Bar-tailed Godwit *Limosa lapponica*
75. Spotted Redshank *Tringa erythropus*
76. Common Redshank *Tringa totanus*
77. Marsh Sandpiper *Tringa stagnatilis*
78. Common Greenshank *Tringa nebularia*

79. Green Sandpiper *Tringa ochropus*
80. Wood Sandpiper *Tringa glareola*
81. Spotted Greenshank *Tringa guttifer*
82. Terek Sandpiper *Xenus cinereus*
83. Common Sandpiper *Actitis hypoleucos*
84. Ruddy Turnstone *Arenaria interpres*
85. Asian Dowitcher *Limnodromus semipalmatus*
86. Solitary Snipe *Gallinago solitaria*
87. Pintail Snipe *Gallinago stenura*
88. Swinhoe's Snipe *Gallinago megala*
89. Great Snipe *Gallinago media*
90. Common Snipe *Gallinago gallinago*
91. Jack Snipe *Lymnocyptes minimus*
92. Eurasian Woodcock *Scolopax rusticola*
93. Red Knot *Calidris canutus*
94. Great Knot *Calidris tenuirostris*
95. Sanderling *Calidris alba*
96. Rufous-necked Stint *Calidris ruficollis*
97. Little Stint *Calidris minuta*
98. Temminck's Stint *Calidris temminckii*
99. Long-toed Stint *Calidris subminuta*
100. Dunlin *Calidris alpina*
101. Curlew Sandpiper *Calidris ferruginea*
102. Spoonbill Sandpiper *Calidris pygmeus*
103. Broad-billed Sandpiper *Limicola falcinellus*
104. Ruff *Philomachus pugnax*
105. Red-necked Phalarope *Phalaropus lobatus*
- *106. Red Phalarope *Phalaropus fulicaria*
107. Black-winged Stilt *Himantopus himantopus*
108. Pied Avocet *Recurvirostra avosetta*
109. Yellow-legged Gull *Larus cachinnans*
110. Pallas's Gull *Larus ichthyaetus*
111. Black-headed Gull *Larus ridibundus*
112. Slender-billed Gull *Larus genei*
113. White-winged Black Tern *Chlidonias leucopterus*
114. Whiskered Tern *Chlidonias hybridus*
115. Gull-billed Tern *Gelochelidon nilotica*
116. Caspian Tern *Sterna caspia*
117. Common Tern *Sterna hirundo*
118. Little Tern *Sterna albifrons*
119. Sandwich Tern *Sterna sandvicensis*
120. Small Blue Kingfisher *Alcedo atthis*
121. Sand Martin *Riparia riparia*
122. Common Swallow *Hirundo rustica*
123. Red-rumped Swallow *Hirundo daurica*

124. Red-throated Pipit *Anthus cervinus*
125. Water Pipit *Anthus spinoletta*
126. Yellow Wagtail *Motacilla flava*
127. White Wagtail *Motacilla alba*
128. Grey Wagtail *Motacilla cinerea*

* Bird species supposed to be excluded from the list of bird species which migrate between Russia and India.