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VERTEBRATE FAUNA OF THE CHAMBAL RIVER BASIN, WITH EMPHASIS ON THE NATIONAL CHAMBAL SANCTUARY, INDIA

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Abstract: This research provides an updated checklist of vertebrate fauna of the Chambal River Basin in north-central India with an emphasis on the National Chambal Sanctuary. The checklist consolidates information from field surveys and a review of literature pertaining to this region. A total of 147 fish (32 families), 56 reptile (19 families), 308 bird (64 families) and 60 mammal (27 families) species are reported, including six Critically Endangered, 12 Endangered and 18 Vulnerable species, as categorised by the IUCN Red List of Threatened Species. This represents the first such extensive checklist for this region and provides an initial baseline of species for future research in this area.

Keywords: Checklist, Gharial, Important Bird Area, Red-crowned Roofed Turtle.

Abbreviation: IUCN - International Union for Conservation of Nature

Hindi Abstract: यह अनुसंधान उत्तर-मध्य भारत की चंबल नदी, खासकर राष्ट्रीय चंबल अभयारण्य के कशेरुकी जीवों कि एक जाँच सूची प्रदान करता है। इस जाँच सूची में चंबल क्षेत्र का साहित्यिक अवलोकन एवं क्षेत्र सर्वेक्षण की जानकारी भी समायोजित है। यहाँ मछली कि कुल १४७ प्रजातियाँ (३२ परिवार), सरीसृप की कुल ५६ प्रजातियाँ (१९ परिवार), पक्षी की कुल ३०८ प्रजातियाँ (६४ परिवार) और स्तनपायी जीवों की कुल ६० प्रजातियाँ (२७ परिवार) पायी जाती हैं, जिसमें कि आठ .यू .सी .एन. रेड लिस्ट ऑफ़ थ्रेटेड स्पेसीस के अंतर्गत आने वाली ६ क्रिटिकली एन्डेनजर्ड, १२ एन्डेनजर्ड और १८ वलनरेबल प्रजातियाँ हैं। यह इस क्षेत्र की पहली ऐसी व्यापक जाँच सूची है जो की भविष्य के लिए प्रजातियों के पोष की आधारसूची का प्रतिनिधित्व करती है।

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INTRODUCTION

Biodiversity inventories or checklists serve as repositories of baseline information on species occurrences, biogeography and their conservation status (Chandra & Gajbe 2005). They are essential tools for developing our knowledge and understanding of biodiversity, and often the first step to undertake effective conservation action. This information is also fundamental to assess changes in species composition and distribution (Abraham et al. 2011) in the face of perturbations that may be anthropogenic (dams, mining, etc.) or natural (earthquakes, volcanoes, etc.).

Lying between 24°55'–26°50'N & 75°34'–79°18'E (Fig. 1), the National Chambal Sanctuary (hereafter, NCS), was established between 1978 and 1983 by the states of Rajasthan, Madhya Pradesh and Uttar Pradesh to conserve the Gharial and the unique Chambal ecosystem. It covers nearly 1800km² across the three states, to form the first and only tri-state protected area in India. Despite being one of the last remnant rivers in the greater Gangetic Drainage Basin to have retained significant conservation values (Hussain & Badola 2001), the Chambal River faces severe extractive and intrusive pressures for resources. The NCS is an Important Bird Area - Site Code IN-UP-11 and IN-RJ-11 (Islam &

Rahmani 2004). A comprehensive database of species occurring in this landscape does not exist. Currently, this information is scattered throughout literature (Dubey & Mehra 1959; Sale 1982; Sharma et al. 1995; Chandra & Gajbe 2005; Saksena 2007; Sharma & Choudhary 2007; Srivastava 2007; Tigerwatch 2008, 2009; Vyas et al. in prep.), difficult to procure and inaccessible to the general public or administration.

The aim of this paper is to compile information from several sources including peer-reviewed publications, reports and our field observations, in order to highlight the vertebrate faunal diversity (fishes, reptiles, birds and mammals), and provide a baseline, reference checklist for the region. We also discuss threats to the region's biodiversity, particularly in NCS.

MATERIALS AND METHODS

Study area

The Chambal Basin (22°27'N–73°20'E & 27°20'N–79°15'E) is a rain-fed catchment and drains a total area of 143, 219km² and is characterised by an undulating floodplain, gullies, forests, ravines, and a mosaic of land-use types (Hussain & Badola 2001; Gopal & Srivastava 2008). It is bound on the south, east

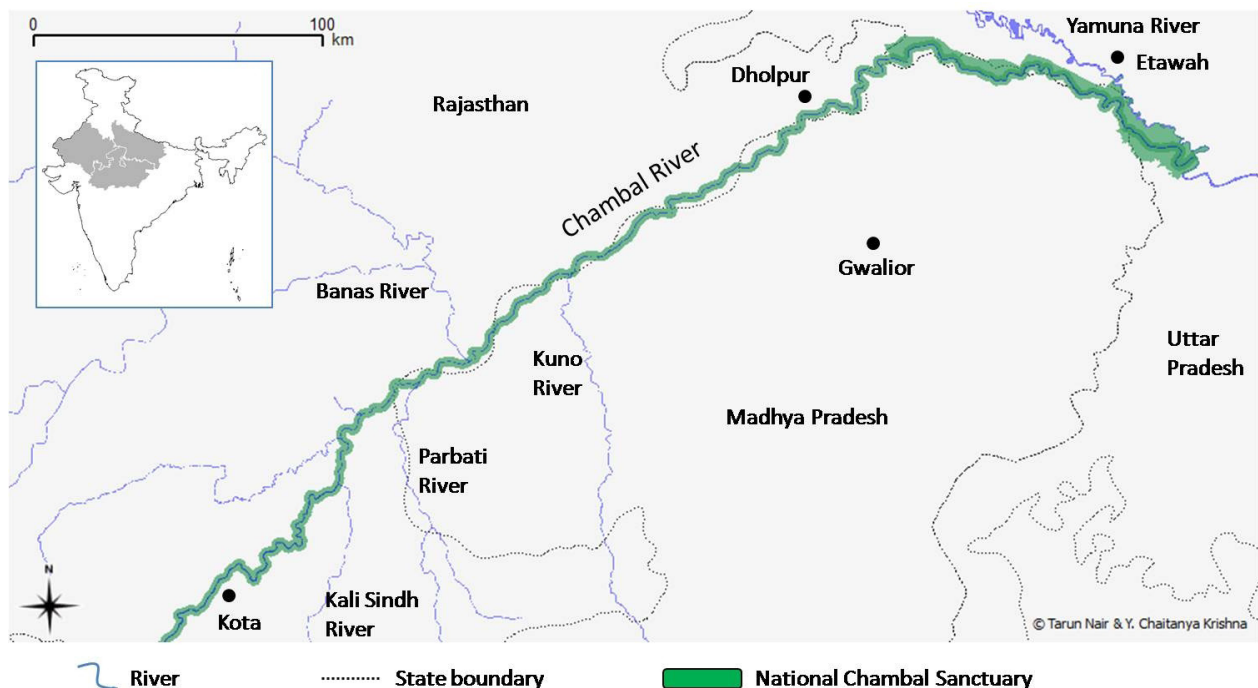


Figure 1. Location of the study area (Inset) across the states of Rajasthan, Madhya Pradesh and Uttar Pradesh; and map of the National Chambal Sanctuary, covering an area of approximately 1800km².

and west by the Vindhyan mountain range and on the north-west by the Aravallis. The 960km long Chambal River originates in the northern slopes of the Vindhyan escarpment and joins the Yamuna River near Bareilly in Uttar Pradesh. The tributaries of the Chambal include Shipra, Choti Kalisindh, Sivanna, Retam, Ansar, Kali Sindh, Banas, Parbati, Seep, Kuwari, Kuno, Alnia, Mej, Chakan, Parwati, Chamla, Gambhir, Lakhunder, Khan, Bangeri, Kedel and Teelar (Jain et al. 2007; Gopal & Srivastava 2008). The NCS consists of a ~600km long arc of the Chambal River. Over this arc, two stretches of the Chambal are protected as the National Chambal Sanctuary - the upper sector, extending from Jawahar Sagar Dam to Kota Barrage, and the lower sector, extending from Keshoraipatan in Rajasthan to the Chambal-Yamuna confluence in Uttar Pradesh.

The NCS lies within the semi-arid zone of north-western India at the border of Madhya Pradesh, Rajasthan and Uttar Pradesh States (Hussain 1999). Ambient air temperatures range from 2–49 °C (Tarun Nair 2009–2010 pers. obs.) with a mean annual precipitation of 590mm, the bulk of which is received during the south-west monsoon (Hussain 1999, 2009). From the source down to its confluence with the Yamuna, the Chambal has a fall of about 732m. The Chambal averages 400m in width while depth ranges from 1–26 m (Hussain 1991).

The vegetation is classified as ravine and thorn forest (Champion & Seth 1968). Evergreen riparian vegetation is completely absent, with only sparse ground-cover along the severely eroded river banks and adjacent ravine lands (Hussain 1999, 2009). The region was also subject to intentional aerial seeding of *Prosopis juliflora* in the 1980s, as a ravine reclamation measure (Prasad 1988), and as a consequence *P. juliflora* is widespread in the region.

Much of the basin has been influenced by a long history of human occupation (Kaul 1962). Anthropogenic influences are chiefly in the form of sand-mining; bank-side cultivation; domestic activities like bathing, washing and water collection; fishing; poaching; livestock herding; grass-soaking; river crossing and temple fairs. The Chambal River also suffers severe hydrological modifications from water impoundment and extraction.

Data compilation and collection

Keywords such as Chambal, checklist, inventory, biodiversity, mammals, birds, reptiles, fish, fauna and occurrence were used in several variations and combinations in Google, Google Scholar, PubMed and Science Direct. The references within the resulting documents were also sourced and reviewed. Similarly,

five of the most widely recognised databases of published literature on Indian biodiversity, namely, Indian Forester, Journal of the Bombay Natural History Society, Zoos' Print Journal, Conservation Assessment and Management Plan (C.A.M.P.) reports and Journal of Threatened Taxa, were also reviewed for relevant information. Preliminary checklists of fishes, reptiles, birds and mammals were prepared based on a review of published literature (Dubey & Mehra 1959; Sharma et al. 1995; Chauhan & Narain 2001; Sivakumar 2002; Sharma 2003; Khudsar 2004; Sundar 2004; Vyas 2004; Vyas & Singh 2004; Chandra & Gajbe 2005; Nair 2009), survey reports (Tigerwatch 2008, 2009; Vyas et al. in prep.), status reports and taxonomic assessments (Sale 1982; Molur & Walker 1998a,b; Rao 1988; Islam & Rahmani 2002; Molur et al. 2002; Islam & Rahmani 2004; Molur et al. 2005; Schätti & Schmitz 2006; Saksena 2007; Sharma & Choudhary 2007; Srivastava 2007; Choudhury et al. 2008; Sanderson et al. 2008; Driscoll & Nowell 2009; Böhm & Richman 2010; Das et al. 2010; Murphy & Lobo 2010; Tenzin 2010; Vishwanath 2010a,b; Vidthayanon et al. 2011; BirdLife International 2012a,b).

Opportunistic field observations were made during field surveys in March–April 2006, February 2008, October 2009 and from December 2009 to May 2010, while collecting information on human-crocodile conflict, gharial habitat-use and population estimation.

We validated species checklists based on available ecological knowledge and distributional records for each species. For instance, Sale (1982) reports the presence of *Varanus salvator* (Common Water Monitor) in the NCS. However, in India, *V. salvator* is reported to be restricted to the eastern and northeastern states of mainland India (Whitaker & Whitaker 1980; Molur & Walker 1998b; Bennett et al. 2010), and is hence omitted from our checklist.

The taxonomic classification, nomenclature and sequence followed Eschmeyer (2012) and Eschmeyer & Fong (2012) for fishes; Turtle Taxonomy Working Group [van Dijk, P.P., J.B. Iverson, H.B. Shaffer, R. Bour & A.G.J. Rhodin] (2011) for turtles and tortoises; ITIS (2012) for other reptiles; BirdLife International (2012) for birds; and Wilson & Reeder (2005) for mammals.

RESULTS AND DISCUSSION

Faunal diversity: We recorded 147 fish species comprising 32 families (Table 2), 56 reptile species comprising 19 families (Table 3), 308 bird species comprising 64 families (Table 4) and 60 mammal species

comprising 27 families (Table 5) from this region, based on available literature and our field observations. This includes six Critically Endangered, 12 Endangered and 18 Vulnerable species (see Table 1), as categorised by the IUCN Red List of Threatened Species (IUCN 2011).

The NCS is among the most important and significant habitats where several globally threatened fauna still survive. Apart from being a strong candidate for World Heritage and Ramsar Convention listings, the NCS is also subject to international treaties like the Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention), which lists both flagship species of the NCS - the Gharial *Gavialis gangeticus* and Gangetic River Dolphins *Platanista gangetica*. It contains the most viable breeding populations of the Critically Endangered Gharial and Red-crowned Roofed Turtle *Batagur kachuga*. It is also among the most important strongholds of the Deccan Mahaseer *Tor khudree*, Putitor Mahaseer *Tor putitora*, Narrow-headed Softshell Turtle *Chitra indica*, Three-striped Roofed Turtle *Batagur dhongoka*, Indian Skimmer *Rynchops albicollis*, Black-bellied Tern *Sterna acuticauda*, Sarus Crane *Grus antigone* and Gangetic River Dolphin *Platanista gangetica*. The NCS functions as a vital source and nursery for fish fry and fingerlings, contributing significantly to downstream fisheries in the Gangetic river system (Sivakumar & Choudhury 2008). It is an Important Bird Area particularly for the Oriental White-backed Vulture *Gyps bengalensis*, Long-billed Vulture *Gyps indicus*, Pallas's Fish-Eagle *Haliaeetus leucoryphus* and Greater Spotted Eagle *Aquila clanga* among others (Islam & Rahmani 2004). The NCS also serves as among the best over-wintering sites for migratory birds. In addition, this river sanctuary also forms a vital corridor and link for the movement and dispersal of Tigers *Panthera tigris* from the source population of Ranthambore Tiger Reserve to the protected areas of Kuno-Palpur, Madhav National Park and Darrah-Mukundra (Reddy et al. 2012; Rakesh Vyas February 2008 pers. comm.).

Threats: The Chambal faces severe extractive and intrusive pressures in the form of water impoundment and abstraction, sand- and stone-mining, fishing, poaching, riparian agriculture, livestock grazing, firewood collection, miscellaneous domestic activities, and infrastructural development (Hussain 2009; Nair 2010; Katdare et al. 2011; MoEF 2011; Tarun Nair 2006, 2008, 2009–2013 pers. obs.).

Seven major, 12 medium and 134 minor irrigation projects operating in the Chambal River Basin, have greatly reduced river flow (Hussain & Badola 2001). Misleading environment impact assessments have

Table 1. List of species from the Chambal River Basin in the IUCN Red List of Threatened Species (IUCN 2011)

	Critically Endangered	Endangered	Vulnerable
Fishes		<i>Himantura chaophraya*</i>	<i>Botia rostrata</i>
		<i>Puntius arulius*</i>	
		<i>Tor khudree</i>	
		<i>Tor putitora</i>	
		<i>Clarias magur*</i>	
Reptiles	<i>Gavialis gangeticus</i>	<i>Batagur dhongoka</i>	<i>Crocodylus palustris</i>
	<i>Batagur kachuga</i>	<i>Chitra indica</i>	<i>Hardella thurjii</i>
			<i>Nilssonia gangetica</i>
			<i>Nilssonia hurum</i>
Birds	<i>Gyps bengalensis</i>	<i>Neophron percnopterus</i>	<i>Leptoptilos javanicus</i>
	<i>Gyps indicus</i>		<i>Pelecanus crispus</i>
	<i>Gyps tenuirostris</i>		<i>Haliaeetus leucoryphus</i>
	<i>Sarcogyps calvus</i>		<i>Aquila clanga</i>
			<i>Aquila heliaca</i>
			<i>Grus antigone</i>
			<i>Rynchops albicollis</i>
Mammals		<i>Prionailurus viverrinus</i>	<i>Melursus ursinus</i>
		<i>Panthera tigris</i>	<i>Lutrogale perspicillata</i>
		<i>Cuon alpinus</i>	<i>Gazella gazella</i>
		<i>Platanista gangetica</i>	<i>Tetracerus quadricornis</i>
			<i>Rusa unicolor</i>

*See endnote (fishes), after Table 2 for more details.

permitted recently commissioned water abstraction projects to operate in the NCS by suppressing information on species' occurrences and falsely stating "As there is no significant flora and fauna in or around Chambal River, there should also not be any ecological impacts from the increase in abstraction" (RUSDIP 2008, page 44). Up- and downstream effects of dams are well-known, stemming from inundation, flow manipulation, and fragmentation. Dams obstruct the dispersal and migration of organisms, and these and other effects have been directly linked to loss of populations and entire species of freshwater fish (Nilsson et al. 2005). Low-flows in the Chambal River result in discontinuity between deep pools in the

Table 2. Checklist of fishes of the Chambal River Basin

	Species	IUCN status (2009–2011)	References
	Dasyatidae		
1	<i>Himantura marginata</i> ¹ (Blyth, 1860)	DD	A
2	<i>Himantura chaophraya</i> ² Monkolprasit & Roberts, 1990 [<i>H. polylepis</i> ^{2*} (Bleeker, 1852)]	EN	F
3	<i>Pastinachus sephen</i> (Forsskål, 1775)	DD	C, F
	Notopteridae		
4	<i>Chitala chitala</i> (Hamilton, 1822)	NT	A,B,C,D,E,G
5	<i>Notopterus notopterus</i> (Pallas, 1769)	LC	A,C,D,E,G,H
	Anguillidae		
6	<i>Anguilla bengalensis</i> (Gray, 1831)	LC	C
	Clupeidae		
7	<i>Gonialosa manmina</i> (Hamilton, 1822)	LC	J
8	<i>Gudusia chapra</i> (Hamilton, 1822)	LC	A,C,D,E,G,I
9	<i>Tenualosa ilisha</i> (Hamilton, 1822)	-	A,C,D
	Cyprinidae		
10	<i>Amblypharyngodon microlepis</i> (Bleeker, 1853)	LC	G
11	<i>Amblypharyngodon mola</i> (Hamilton, 1822)	LC	A,C,E,G
12	<i>Aspidoparia jaya</i> (Hamilton, 1822)	LC	J
13	<i>Aspidoparia morar</i> (Hamilton, 1822)	LC	A,E,G
14	<i>Bangana dero</i> (Hamilton, 1822)	LC	A
15	<i>Barilius barila</i> (Hamilton, 1822)	LC	A,G,H
16	<i>Barilius bendelisis</i> (Hamilton, 1807)	LC	A,C,G,H,I
17	<i>Barilius modestus</i> Day, 1872	-	G
18	<i>Barilius shacra</i> (Hamilton, 1822)	LC	B
19	<i>Barilius vagra</i> (Hamilton, 1822)	LC	G
20	<i>Bengala elanga</i> (Hamilton, 1822) [<i>Megarasbora elanga</i> ³]	LC	G
21	<i>Opsarius barna</i> (Hamilton, 1822)	LC	C,G
22	<i>Carassius carassius</i> ^{INT} (Linnaeus, 1758)	-	C,E,G
23	<i>Catla catla</i> (Hamilton, 1822) [<i>Gibelion catla</i> ⁴]	LC	A,B,C,E,G,H,I
24	<i>Chagunius chagunio</i> (Hamilton, 1822)	LC	A,E,G
25	<i>Chela cachius</i> (Hamilton, 1822)	LC	A,E,G
26	<i>Cirrhinus mrigala</i> (Hamilton, 1822)	LC	A,C,G,H,I
27	<i>Cirrhinus reba</i> (Hamilton, 1822)	LC	A,C,D,E,G,H
28	<i>Crossocheilus latius</i> (Hamilton, 1822)	LC	A,D,G
29	<i>Ctenopharyngodon idella</i> (Valenciennes, 1844)	-	C,E,G
30	<i>Cyprinus carpio</i> ^{INT} Linnaeus, 1758	-	C,D,E,G
31	<i>Danio rerio</i> (Hamilton, 1822)	LC	A,E,G
32	<i>Devario aequipinnatus</i> (McClelland, 1839)	LC	G
33	<i>Devario devario</i> (Hamilton, 1822)	LC	A,C,E,G,H

	Species	IUCN status (2009–2011)	References
34	<i>Esomus danricus</i> (Hamilton, 1822)	LC	A,C,E,G
35	<i>Garra gotyla</i> (Gray, 1830)	LC	C,E,G,H
36	<i>Garra lamta</i> (Hamilton, 1822)	LC	A,G
37	<i>Garra mullya</i> (Sykes, 1839)	LC	E,G
38	<i>Hypophthalmichthys molitrix</i> ^{INT} (Valenciennes, 1844)	-	C,E,G
39	<i>Hypophthalmichthys nobilis</i> (Richardson, 1845)	-	E,G
40	<i>Labeo angra</i> (Hamilton, 1822)	LC	E,G
41	<i>Labeo bata</i> (Hamilton, 1822)	LC	A,C,D,E,G,H
42	<i>Labeo boga</i> (Hamilton, 1822)	LC	A,C,E,G
43	<i>Labeo boggut</i> (Sykes, 1839)	LC	A,C,E,G,H
44	<i>Labeo calbasu</i> (Hamilton, 1822)	LC	A,C,E,G,H
45	<i>Labeo dyocheilus</i> (McClelland, 1839)	LC	A,C,D,E,G
46	<i>Labeo fimbriatus</i> (Bloch, 1795)	LC	C,E,G
47	<i>Labeo gonius</i> (Hamilton, 1822)	LC	A,C,D,E,H
48	<i>Labeo pangusia</i> (Hamilton, 1822)	NT	E
49	<i>Labeo rajasthanicus</i> Datta & Majumdar, 1970	-	E
50	<i>Labeo rohita</i> (Hamilton, 1822)	LC	A,C,E,G,H,I
51	<i>Laubuca laubuca</i> (Hamilton, 1822)	LC	A,C,H
52	<i>Osteobrama cotio</i> (Hamilton, 1822)	LC	A,C,D,E,G,H
53	<i>Puntius amphibius</i> (Valenciennes, 1842)	DD	E,G
54	<i>Puntius arulius</i> ⁵ (Jerdon, 1849)	EN	G
55	<i>Puntius chola</i> (Hamilton, 1822)	LC	E,G
56	<i>Pethia conchonius</i> (Hamilton, 1822)	LC	A,C
57	<i>Puntius guganio</i> (Hamilton, 1822)	LC	I
58	<i>Pethia phutunio</i> (Hamilton, 1822)	LC	A
59	<i>Systemus sarana</i> (Hamilton, 1822)	LC	A,C,D,E,G,H
60	<i>Puntius sophore</i> (Hamilton, 1822)	LC	A,C,D,E,G,I
61	<i>Pethia ticto</i> (Hamilton, 1822)	LC	A,C,D,E,G,H
62	<i>Puntius vittatus</i> Day, 1865	LC	G
63	<i>Raiamas bola</i> (Hamilton, 1822)	LC	B,C,E,H
64	<i>Rasbora daniconius</i> (Hamilton, 1822)	LC	A,C,D,E,H,I
65	<i>Rasbora rasbora</i> (Hamilton, 1822)	LC	I
66	<i>Salmophasia bacaila</i> (Hamilton, 1822)	LC	A,B,C,D,G,H
67	<i>Salmophasia balookee</i> (Sykes, 1839)	LC	A,B,C,G,H,I
68	<i>Salmophasia phulo</i> (Hamilton, 1822)	LC	G
69	<i>Salmophasia punjabensis</i> (Day, 1872)	-	G
70	<i>Securicula gora</i> (Hamilton, 1822)	LC	A,E,G
71	<i>Tor khudree</i> (Sykes, 1839)	EN	E,G,K
72	<i>Tor tor</i> (Hamilton, 1822)	NT	A,C,D,E,G,H
73	<i>Tor putitora</i> (Hamilton, 1822)	EN	C,G

	Species	IUCN status (2009–2011)	References
	Psilorhynchidae		
74	<i>Psilorhynchus balitora</i> (Hamilton, 1822)	LC	G
	Cobitidae		
75	<i>Botia birdi</i> Chaudhuri, 1909	-	E,G
76	<i>Botia lohachata</i> Chaudhuri, 1912	-	E,G
77	<i>Botia rostrata</i> Günther, 1868	VU	G
78	<i>Lepidocephalichthys guntea</i> (Hamilton, 1822)	LC	A,S,E,G
	Nemacheilidae		
79	<i>Acanthocobitis botia</i> (Hamilton, 1822)	LC	A,C,E,H,I
80	<i>Nemacheilus carletoni</i> Fowler, 1924	-	G
81	<i>Nemacheilus corica</i> (Hamilton, 1822)	LC	G
82	<i>Nemacheilus denisoni</i> Day, 1867	LC	G
83	<i>Paraschistura montana</i> (McClelland, 1838)	-	G
84	<i>Schistura baluchiorum</i> ⁶ (Zugmayer, 1912)	-	G
85	<i>Schistura beavani</i> (Günther 1868)	LC	A
86	<i>Schistura horai</i> (Menon, 1952)	-	G
87	<i>Schistura rupecula</i> McClelland, 1838	LC	G
	Bagridae		
88	<i>Mystus bleekeri</i> (Day, 1877)	LC	A,C,E,G
89	<i>Mystus cavasius</i> (Hamilton, 1822)	LC	A,C,E,G
90	<i>Mystus tengara</i> (Hamilton, 1822)		I
91	<i>Mystus vittatus</i> (Bloch, 1794)	LC	A,C,E,G
92	<i>Rita rita</i> (Hamilton, 1822)	LC	A,B,C,D,E,G,H,I
93	<i>Sperata aor</i> (Hamilton, 1822)	LC	A,C,D,E,G,H
94	<i>Sperata seenghala</i> (Sykes, 1839)	LC	A,C,D,E,G,H
	Siluridae		
95	<i>Ompok bimaculatus</i> (Bloch, 1794)	NT	A,C,D,E,G,H,I
96	<i>Wallago attu</i> (Bloch & Schneider, 1801)	NT	A,B,C,D,E,G,H,I
	Schilbeidae		
97	<i>Ailia coila</i> (Hamilton, 1822)	NT	E,G
98	<i>Aillichthys punctata</i> Day, 1872	DD	B
99	<i>Clupisoma garua</i> (Hamilton, 1822)	LC	B,C,E,G
100	<i>Eutropiichthys murius</i> (Hamilton, 1822)	LC	I
101	<i>Eutropiichthys vacha</i> (Hamilton, 1822)	LC	A,C,D,E,G,H,I
102	<i>Neotropius atherinoides</i> (Bloch, 1794)	LC	I
103	<i>Silonia silondia</i> (Hamilton, 1822)	LC	A,C,D,E,G,H,I
	Pangasiidae		
104	<i>Pangasius pangasius</i> (Hamilton, 1822)	LC	A,B,C,D
	Amblycipitidae		
105	<i>Amblyceps mangois</i> (Hamilton, 1822)	LC	G
	Sisoridae		
106	<i>Gogangra viridescens</i> (Hamilton, 1822)	LC	A

	Species	IUCN status (2009–2011)	References
107	<i>Bagarius bagarius</i> (Hamilton, 1822)	NT	A,C,D,E,G,H,I
108	<i>Bagarius yarrelli</i> (Sykes, 1839)	NT	G
109	<i>Gagata cenia</i> (Hamilton, 1822)	LC	G
110	<i>Gagata sexualis</i> Tilak, 1970	LC	I
111	<i>Glyptothorax botius</i> (Hamilton, 1822)	LC	A
112	<i>Glyptothorax pectinopterus</i> (McClelland, 1842)	LC	G
113	<i>Glyptothorax telchitta</i> (Hamilton, 1822)	LC	G
114	<i>Nangra nangra</i> (Hamilton, 1822)	LC	G
115	<i>Sisor rabdophorus</i> Hamilton, 1822	LC	G
	Erethistidae		
116	<i>Pseudalaguvia ribeiroi</i> (Hora, 1921)	LC	I
	Clariidae		
117	<i>Clarias magur</i> ⁷ (Linnaeus, 1758)	EN	C,D,E,G
118	<i>Clarias gariepinus</i> ^{INT} (Burchell, 1822)	-	E,G
	Heteropneustidae		
119	<i>Heteropneustes fossilis</i> (Bloch, 1794)	LC	A,C,D,E,G,I
	Aplocheilidae		
120	<i>Aplocheilus blockii</i> Arnold, 1911	LC	G
121	<i>Aplocheilus lineatus</i> (Valenciennes, 1846)	LC	G
	Belonidae		
122	<i>Xenentodon cancila</i> (Hamilton, 1822)	LC	A,B,C,D,E,G,H,I
	Adrianichthyidae		
123	<i>Oryzias melastigma</i> (McClelland, 1839)	LC	G
	Synbranchidae		
124	<i>Monopterusuchia</i> (Hamilton, 1822)	LC	C,E,G
	Mastacembelidae		
125	<i>Macrogathus aral</i> (Bloch & Schneider, 1801)	LC	G
126	<i>Macrogathus pancalus</i> Hamilton, 1822	LC	A,C,D,G
127	<i>Mastacembelus armatus</i> (Lacepède, 1800)	LC	A,C,D,G,H,I
	Ambassidae		
128	<i>Chanda nama</i> Hamilton, 1822	LC	A,C,D,E,G,H,I
129	<i>Pseudambassis baculis</i> (Hamilton, 1822)	LC	G
130	<i>Pseudambassis ranga</i> (Hamilton, 1822)	LC	A,C,D,G,H
	Badidae		
131	<i>Badis badis</i> (Hamilton, 1822)	LC	A
	Sciaenidae		
132	<i>Otolithoides pama</i> ⁸ (Hamilton, 1822)	-	A
	Nandidae		
133	<i>Nandus nandus</i> (Hamilton, 1822)	LC	A,B,C,E,G,H
	Mugilidae		
134	<i>Mugil cephalus</i> ⁹ Linnaeus, 1758	LC	G

	Species	IUCN status (2009–2011)	References
135	<i>Rhinomugil corsula</i> (Hamilton, 1822)	LC	A,C,D,E,H,I
136	<i>Sicamugil cascasia</i> (Hamilton, 1822)	LC	G
	Cichlidae		
137	<i>Oreochromis mossambicus</i> ^{INT} (Peters, 1852)	-	G,I
	Gobiidae		
138	<i>Glossogobius giuris</i> (Hamilton, 1822)	-	A,C,E,G,H,I
	Anabantidae		
139	<i>Anabas testudineus</i> (Bloch, 1792)	DD	E,G
	Osphronemidae		
140	<i>Trichogaster fasciata</i> Bloch & Schneider, 1801	LC	C,E,G
141	<i>Trichogaster labiosa</i> Day, 1877	-	G
142	<i>Trichogaster lalius</i> (Hamilton, 1822)	LC	G
	Channidae		
143	<i>Channa gachua</i> (Hamilton, 1822)	LC	A,C
144	<i>Channa marulius</i> (Hamilton, 1822)	LC	A,C,D,E,G,H
145	<i>Channa orientalis</i> ¹⁰ Bloch & Schneider, 1801	-	E,G
146	<i>Channa punctata</i> (Bloch, 1793)	LC	A,C,D,E,G,H,I
147	<i>Channa striata</i> (Bloch, 1793)	LC	A,C,D,E,G,H

¹ *Himantura marginata* is primarily a marine fish, occasionally entering brackish waters. We do not have information of the specimen or identification. This record needs to be verified.

² *Himantura chaophraya* is not known from India. We do not have information of the specimen or identification. This record needs to be verified.

^{2*} *H. chaophraya* is considered as a synonym of *H. polylepis* by the IUCN Red List (Vidthayanon et al. 2011).

³ *Bengala elanga* is considered as *Megarasbora elanga* by the IUCN Red List (Vishwanath 2010b).

⁴ *Catla catla* is considered as *Gibelion catla* by the IUCN Red List (Tenzin 2010).

⁵ *Dawkinsia arulius* (reported earlier as *Puntius arulius*) is known only from South India (Knight et al. 2011). This species may be *Dravidia melanampyx* or *D. fasciatus* but its taxonomy is unresolved (Abraham 2011).

Also see Pethiyagoda et al. (2012) for species hitherto referred to the genus *Puntius*.

⁶ *Schistura baluchiorum* is mainly distributed in the Indus drainage. *S. baluchiorum* is listed here because of its doubtful synonymy with *Noemacheilus rajasthanicus*. However, if *N. rajasthanicus* is a valid species this record should refer to it.

⁷ *Clarias magur* has been described as *C. batrachus* in previous reports. *C. batrachus* is now reported only from the Sunda Islands [see Ng & Kottelat (2008), and Vishwanath (2010a) for details].

⁸ *Otolithoides pama* is primarily an estuarine / marine fish. We do not have information of the specimen or identification. This record needs to be verified.

⁹ *Mugil cephalus* is primarily a marine species, and is introduced in freshwater systems. We do not have information of the specimen or identification. This record needs to be verified.

¹⁰ *Channa orientalis* is endemic to Sri Lanka, and earlier reports of this species from India probably refers to a species of the *C. gachua* complex. For details, see http://fi.biology.usgs.gov/Snakehead_circ_1251/html/channa_orientalis.html

^{INT} Refers to introduced species, and hence IUCN status is not provided.

IUCN status: LC - Least Concern; NT - Near Threatened; VU - Vulnerable; EN - Endangered; CR - Critically Endangered.

References: A - Dubey & Mehra (1959); B - Molur & Walker (1998a); C - Saksena (2007); D - Sale (1982); E - Sharma & Choudhury (2007); F - Sivakumar (2002); G - Srivastava (2007); H - Vyas & Singh (2004); I - This study (2009–2010); J - N. Kelkar pers. comm.; K - Sivakumar & Choudhury (2008).

river, due to which species become more vulnerable to netting and dynamiting (Dubey & Mehra 1959; Katdare et al. 2011). Additionally, reduction in the number of inaccessible islands results in increased destruction of nests of Gharials, turtles and ground-nesting birds like skimmers and Black-bellied Terns (Sundar 2004; Nair 2010). Altered flow regimes, and insufficient flooding disrupts siltation rates and sand deposition in the river channel. As Moll (1997) notes, upriver dams exacerbate the problem by preventing replacement sand from coming downriver while increasing erosion by periodic and unseasonable elevation of water levels.

Sand-mining destroys crucial breeding areas and is one of the most serious threats to the survival of species that lay their eggs on sand deposits. Stone-mining, common in the upper sections of the river, causes considerable disturbances to wildlife, destroys key breeding habitats like otter-holts and provides easy access to ammunition for dynamite fishing (Katdare et al. 2011).

Poaching is another issue that continues unchecked (Murthy 2004; Tarun Nair 2009–2013 pers. obs.) due to inadequate allocation of field personnel to patrol the sanctuary. Illegal fishing and turtle poaching are rampant, using a variety of methods (gill net, baited hook-line, dynamite) and these also claim other species like Gharials, Mugger, river dolphins, otters and several birds (Dubey & Mehra 1959; Vyas 2004; Nair 2010; Taigor & Rao 2010; Katdare et al. 2011). Gill nets are particularly responsible for entangling and drowning juvenile Gharials, thereby impacting survival and recruitment of smaller size-classes.

Riparian agriculture and associated activities like constant human disturbance from irrigational pump operation and crop protection, and risks of water pollution from agro-chemical use and oil leaks also contribute substantially to habitat loss, degradation and pollution (Katdare et al. 2011).

In the future, river flows would be further impacted by the 52 irrigation projects that are under construction and 376 projects that have been planned in the basin (Department of Water Resources, Rajasthan). Additionally, there are proposals to divert the two most important tributaries of the Chambal - the Parbati and Kalisindh rivers (NWDA). In spite of water being the most critical resource in the NCS, the environmental impact assessment for this project does not account for changes in the hydrological regime due to the diversion of water (NWDA). There have also been calls to denotify the sanctuary itself in order to facilitate sand-mining (The

Table 3. Checklist of reptiles of the Chambal River Basin

	Species	Common Name	IUCN status 2009 - 2012	References
	Crocodylidae			
1	<i>Crocodylus palustris</i> (Lesson, 1831)	Mugger or Marsh Crocodile	VU	A,G,H,M
	Gavialidae			
2	<i>Gavialis gangeticus</i> (Gmelin, 1789)	Gharial	CR	A,G,H,M
	Geoemydidae			
3	<i>Batagur dhongoka</i> (Gray, 1832)	Three-striped Roofed Turtle	EN	A,G,M
4	<i>Batagur kachuga</i> (Gray, 1831)	Red-crowned Roofed Turtle	CR	A,G,M
5	<i>Hardella thurjii</i> (Gray, 1831)	Crowned River Turtle	VU	A,G,M
6	<i>Pangshura tecta</i> (Gray, 1830)	Indian Roofed Turtle	LC	K,M
7	<i>Pangshura tentoria</i> (Gray, 1834)	Indian Tent Turtle	LC	A,G,M
	Testudinidae			
8	<i>Geochelone elegans</i> (Schoepff, 1795)	Indian Star Tortoise	LC	H,L
	Trionychidae			
9	<i>Lissemys punctata</i> (Bonnaterre, 1789)	Indian Flapshell Turtle	LC	A,G,H,M
10	<i>Chitra indica</i> (Gray, 1830)	Narrow-headed Softshell Turtle	EN	A,G,M
11	<i>Nilssonina gangetica</i> (Cuvier, 1825)	Indian Softshell Turtle	VU	A,G,H,M
12	<i>Nilssonina hurum</i> (Gray, 1830)	Peacock Softshell Turtle	VU	C
	Gekkonidae			
13	<i>Hemidactylus brookii</i> (Gray, 1845)	Brook's House Gecko	-	A
14	<i>Hemidactylus flaviviridis</i> Rüppell, 1840	Yellow-bellied House Gecko	-	A,H,M
15	<i>Hemidactylus frenatus</i> Duméril & Bibron, 1836	Common House Gecko	LC	A
16	<i>Hemidactylus maculatus</i> Duméril & Bibron, 1836	Northern Spotted Gecko	-	M
17	<i>Hemidactylus leschenaultii</i> Duméril & Bibron, 1836	Bark Gecko	-	A,M
18	<i>Hemidactylus triedrus</i> (Daudin, 1802)	Termite Hill Gecko	-	A
	Agamidae			
19	<i>Calotes versicolor</i> (Daudin, 1802)	Oriental Garden Lizard	-	A,H,M
20	<i>Sitana ponticeriana</i> Cuvier, 1829	Fan-throated Lizard		A
	Chamaeleonidae			
21	<i>Chamaeleo zeylanicus</i> Laurenti, 1768	Indian Chameleon	-	A
	Varanidae			
22	<i>Varanus bengalensis</i> (Daudin, 1802)	Common Indian Monitor	LC	A,F,H,L,M
23	<i>Varanus griseus</i> Mertens, 1954	Indian Desert Monitor	LC	H
	Lacertidae			
24	<i>Ophisops jerdonii</i> Blyth, 1853	Jerdon's Snake-eye	LC	A, D
25	<i>Ophisops microlepis</i> Blanford, 1870	Small-scaled Lacerta	LC	B
26	<i>Ophisops minor nictans</i> Arnold, 1989	Indian Dwarf Lacerta	-	A,D
	Scincidae			
27	<i>Eutropis carinata</i> (Schneider, 1801)	Keeled Grass Skink	-	A,M
28	<i>Eutropis innotata</i> (Blanford, 1870)	Blanford's Grass Skink	-	D

	Species	Common Name	IUCN status 2009 - 2012	References
29	<i>Eutropis macularia</i> (Blyth, 1853)	Bronze Skink	-	A
30	<i>Lygosoma punctata</i> (Gmelin, 1799)	Spotted Supple Skink	-	A,M
	Typhlopidae			
31	<i>Ramphotyphlops braminus</i> (Daudin, 1803)	Brahminy Blind snake	-	A
	Pythonidae			
32	<i>Python molurus</i> (Linnaeus, 1758)	Indian Rock Python	NT	K,M
	Boidae			
33	<i>Eryx johnii</i> (Russell, 1801)	Red Sand Boa	-	A,M
34	<i>Gangylophis conicus</i> (Schneider, 1801)	Common Sand Boa	-	M
	Colubridae			
35	<i>Coelognathus helena</i> (Daudin, 1803)	Common Trinket Snake	-	N
36	<i>Ptyas mucosa</i> (Linnaeus, 1758)	Indian Rat Snake	-	A,H,M
37	<i>Platyceps ventromaculatus</i> (Gray, 1834)	Glossy-bellied Racer	-	I
38	<i>Argyrogena fasciolata</i> (Shaw, 1802)	Banded Racer	-	N
39	<i>Spalerosophis atriceps</i> Fischer, 1885	Black-headed Royal Snake	-	N
40	<i>Oligodon taeniolatus</i> (Jerdon, 1853)	Russell's Kukri Snake	LC	A
41	<i>Oligodon arnensis</i> (Shaw, 1802)	Common Kukri Snake	-	A,N
42	<i>Dendrelaphis tristis</i> (Daudin, 1803)	Common Bronzeback Tree Snake	-	N
43	<i>Lycodon striatus</i> (Shaw, 1802)	Barred Wolf Snake	-	N
44	<i>Lycodon aulicus</i> (Linnaeus, 1758)	Common Wolf Snake	-	A,N
45	<i>Sibynophis subpunctatus</i> (Dumeril Bibron & Dumeril, 1854)	Dumeril's Black-headed Snake	-	J
46	<i>Xenochrophis piscator</i> (Schneider, 1799)	Chequered Keelback	-	A,M,N
47	<i>Amphiesma stolata</i> (Linnaeus, 1758)	Buff Striped Keelback	-	A,N
48	<i>Macropisthodon plumbicolor</i> (Cantor, 1839)	Green Keelback	-	N
49	<i>Boiga trigonata</i> (Schneider, 1802)	Common Cat Snake	LC	N
50	<i>Ahaetulla nasuta</i> (Bonnaterre, 1790)	Common Vine Snake		A,N
	Elapidae			
51	<i>Bungarus caeruleus</i> (Schneider, 1801)	Common Krait	-	A,H,N
52	<i>Naja naja</i> (Linnaeus, 1758)	Spectacled Cobra	-	A,N
	Homalopsidae			
53	<i>Enhydris sieboldii</i> (Schlegel, 1837)	Siebold's Smooth-water Snake	LC	E
	Psammophiidae			
54	<i>Psammophis leithii</i> Gunther, 1869	Leith's Sand Snake	-	N
	Viperidae			
55	<i>Daboia russelii</i> (Shaw & Nodder, 1797)	Russell's Viper	-	F,M
56	<i>Echis carinatus</i> (Schneider, 1801)	Saw-scaled Viper	-	A,N

IUCN status: LC - Least Concern; NT - Near Threatened; VU - Vulnerable; EN - Endangered; CR - Critically Endangered.

References: A - This study (fieldwork in 2009 - 2010); B - Böhm & Richman (2010); C - Das et al. (2010); D - Molur & Walker (1998b); E - Murphy & Lobo (2010); F - Nair (2009); G - Rao (1988); H - Sale (1982); I - Schätti & Schmitz (2006); J - Sharma (2003); K - Vyas (2004); L - Vyas & Singh (2004); M - Vyas et al. (in prep.); N - This study (intermittent fieldwork between 2006 and 2008).

Table 4. Checklist of birds of the Chambal River Basin

	Species	Common Name	IUCN Status 2011	References
	Phasianidae			
1	<i>Francolinus francolinus</i> (Linnaeus, 1766)	Black Francolin	LC	H
2	<i>Francolinus pondicerianus</i> (Gmelin, 1789)	Grey Francolin	LC	A,B,G,H,K,L,M
3	<i>Coturnix coturnix</i> (Linnaeus, 1758)	Common Quail	LC	A,B,H,M
4	<i>Coturnix coromandelica</i> (Gmelin, 1789)	Rain Quail	LC	H
5	<i>Perdica asiatica</i> (Latham, 1790)	Jungle Bush-quail	LC	H
6	<i>Galloperdix spadicea</i> (Gmelin, 1789)	Red Spurfowl	LC	B
7	<i>Galloperdix lunulata</i> (Valenciennes, 1825)	Painted Spurfowl	LC	A,M
8	<i>Gallus sonneratii</i> Temminck, 1813	Grey Junglefowl	LC	A,B,
9	<i>Pavo cristatus</i> Linnaeus, 1758	Indian Peafowl	LC	A,B,G,H,K,L,M
	Anatidae			
10	<i>Dendrocygna javanica</i> (Horsfield, 1821)	Lesser Whistling-duck	LC	A,B,G,I,K,M
11	<i>Anser anser</i> (Linnaeus, 1758)	Greylag Goose	LC	A,H,I,L,M
12	<i>Anser indicus</i> (Latham, 1790)	Bar-headed Goose	LC	A,B,H,I,K,L,M
13	<i>Sarkidiornis melanotos</i> (Pennant, 1769)	Comb Duck	LC	A,B,G,H,I,K,M
14	<i>Tadorna ferruginea</i> (Pallas, 1764)	Ruddy Shelduck	LC	A,B,G,H,K,L,M
15	<i>Tadorna tadorna</i> (Linnaeus, 1758)	Common Shelduck	LC	K
16	<i>Nettapus coromandelianus</i> (Gmelin, 1789)	Cotton Pygmy-goose	LC	A
17	<i>Anas strepera</i> Linnaeus, 1758	Gadwall	LC	K,L,M
18	<i>Anas penelope</i> Linnaeus, 1758	Eurasian Wigeon	LC	L,M
19	<i>Anas platyrhynchos</i> Linnaeus, 1758	Mallard	LC	A,H
20	<i>Anas poecilorhyncha</i> Forster, 1781	Western Spot-billed Duck	LC	A,B,G,H,K,L,M
21	<i>Anas clypeata</i> Linnaeus, 1758	Northern Shoveler	LC	A,B,I,L,M
22	<i>Anas acuta</i> Linnaeus, 1758	Northern Pintail	LC	A,I,K,L,M
23	<i>Anas querquedula</i> Linnaeus, 1758	Garganey	LC	A,B,G,L,M
24	<i>Anas crecca</i> Linnaeus, 1758	Common Teal	LC	A,H,I,K,L,M
25	<i>Mergus merganser</i> Linnaeus, 1758	Common Merganser	LC	M
26	<i>Netta rufina</i> (Pallas, 1773)	Red-crested Pochard	LC	A,B,H,I,K,M
27	<i>Aythya ferina</i> (Linnaeus, 1758)	Common Pochard	LC	L,M
28	<i>Aythya nyroca</i> (Gldenstdt, 1770)	Ferruginous Duck	NT	A,H,K
29	<i>Aythya fuligula</i> (Linnaeus, 1758)	Tufted Duck	LC	A,H,L
	Podicipedidae			
30	<i>Tachybaptus ruficollis</i> (Pallas, 1764)	Little Grebe	LC	A,B,G,H,K,L,M
31	<i>Podiceps cristatus</i> (Linnaeus, 1758)	Great Crested Grebe	LC	A,B,K
	Phoenicopteridae			
32	<i>Phoenicopus roseus</i> Pallas, 1811	Greater Flamingo	LC	A,M
	Ciconiidae			
33	<i>Mycteria leucocephala</i> (Pennant, 1769)	Painted Stork	NT	A,B,G,H,K,L,M
34	<i>Anastomus oscitans</i> (Boddaert, 1783)	Asian Openbill	LC	A,B,G,H,I,K,M
35	<i>Ciconia nigra</i> (Linnaeus, 1758)	Black stork	LC	K,L,M
36	<i>Ciconia episcopus</i> (Boddaert, 1783)	Woolly-necked Stork	LC	A,B,G,H,K,L,M
37	<i>Ephippiorhynchus asiaticus</i> (Latham, 1790)	Black-necked Stork	NT	A,B,H,I
38	<i>Leptoptilos javanicus</i> (Horsfield, 1821)	Lesser Adjutant	VU	E
	Threskiornithidae			
39	<i>Threskiornis melanocephalus</i> (Latham, 1790)	Black-headed Ibis	NT	A,B,G,I,K,M
40	<i>Pseudibis papillosa</i> (Temminck, 1824)	Red-naped Ibis	LC	A,B,G,I,K,L,M

	Species	Common Name	IUCN Status 2011	References
41	<i>Plegadis falcinellus</i> (Linnaeus, 1766)	Glossy Ibis	LC	A,G,K,M
42	<i>Platalea leucorodia</i> Linnaeus, 1758	Eurasian Spoonbill	LC	A,B,G,I,K,L,M
	Ardeidae			
43	<i>Botaurus stellaris</i> (Linnaeus, 1758)	Great Bittern	LC	A
44	<i>Ixobrychus sinensis</i> (Gmelin, 1789)	Yellow Bittern	LC	B
45	<i>Ixobrychus cinnamomeus</i> (Gmelin, 1789)	Cinnamon Bittern	LC	M
46	<i>Ixobrychus flavicollis</i> (Latham, 1790)	Black Bittern	LC	A
47	<i>Nycticorax nycticorax</i> (Linnaeus, 1758)	Black-crowned Night-heron	LC	A,B,G,K,M
48	<i>Butorides striata</i> (Linnaeus, 1758)	Little Heron	LC	A,B,K,L,M
49	<i>Ardeola grayii</i> (Sykes, 1832)	Indian Pond-heron	LC	A,B,G,H,K,L,M
50	<i>Bubulcus ibis</i> (Linnaeus, 1758)	Cattle Egret	LC	A,B,G,H,K,L,M
51	<i>Ardea cinerea</i> Linnaeus, 1758	Grey Heron	LC	A,B,G,H,K,L,M
52	<i>Ardea purpurea</i> Linnaeus, 1766	Purple Heron	LC	A,B,G,K,M
53	<i>Casmerodius albus</i> (Linnaeus, 1758)	Great Egret	LC	B,G,K,L,M
54	<i>Mesophoyx intermedia</i> (Wagler, 1829)	Intermediate Egret	LC	A,G,K,L,M
55	<i>Egretta garzetta</i> (Linnaeus, 1766)	Little Egret	LC	A,B,G,H,K,L,M
	Pelecanidae			
56	<i>Pelecanus onocrotalus</i> Linnaeus, 1758	Great White Pelican	LC	K
57	<i>Pelecanus crispus</i> Bruch, 1832	Dalmatian Pelican	VU	A,B,E
58	<i>Pelecanus philippensis</i> Gmelin, 1789	Spot-billed Pelican	NT	A,E,H,I
	Phalacrocoracidae			
59	<i>Phalacrocorax niger</i> (Vieillot, 1817)	Little Cormorant	LC	A,B,G,H,K,L,M
60	<i>Phalacrocorax fuscicollis</i> Stephens, 1826	Indian Cormorant	LC	A,B,G,L,M
61	<i>Phalacrocorax carbo</i> (Linnaeus, 1758)	Great Cormorant	LC	A,B,G,I,K,L,M
	Anhingidae			
62	<i>Anhinga melanogaster</i> Pennant, 1769	Oriental Darter	NT	A,B,G,H,K,L,M
	Falconidae			
63	<i>Falco naumanni</i> Fleischer, 1818	Lesser Kestrel	LC	E
64	<i>Falco tinnunculus</i> Linnaeus, 1758	Common Kestrel	LC	A,B,H,L,M
65	<i>Falco chicquera</i> Daudin, 1800	Red-necked Falcon	LC	A
66	<i>Falco subbuteo</i> Linnaeus, 1758	Eurasian Hobby	LC	M
67	<i>Falco jugger</i> Gray, 1834	Laggar Falcon	NT	H,M
68	<i>Falco peregrinus</i> Tunstall, 1771	Peregrine Falcon	LC	A,B,M
	Accipitridae			
69	<i>Pandion haliaetus</i> (Linnaeus, 1758)	Osprey	LC	A,B,G,H,K,L,M
70	<i>Pernis ptilorhynchus</i> (Temminck, 1821)	Oriental Honey-buzzard	LC	B,K,M
71	<i>Elanus caeruleus</i> (Desfontaines, 1789)	Black-winged Kite	LC	A,B,G,H,K,L,M
72	<i>Milvus migrans</i> (Boddaert, 1783)	Black Kite	LC	B,G,L,M
73	<i>Haliastur indus</i> (Boddaert, 1783)	Brahminy Kite	LC	B
74	<i>Haliaeetus leucoryphus</i> (Pallas, 1771)	Pallas's Fish-eagle	VU	C,D,F
75	<i>Haliaeetus albicilla</i> (Linnaeus, 1758)	White-tailed Eagle	LC	B
76	<i>Neophron percnopterus</i> (Linnaeus, 1758)	Egyptian Vulture	EN	A,B,G,H,K,L,M
77	<i>Gyps bengalensis</i> (Gmelin, 1788)	White-rumped Vulture	CR	B,D,F,G,H,L,M
78	<i>Gyps indicus</i> (Scopoli, 1786)	Indian Vulture	CR	B,D,F,G,K,L,M
79	<i>Gyps tenuirostris</i> Gray, 1844	Slender-billed Vulture	CR	L
80	<i>Gyps fulvus</i> (Hablizl, 1783)	Griffon Vulture	LC	G,L,M
81	<i>Sarcogyps calvus</i> (Scopoli, 1786)	Red-headed Vulture	CR	A,G,I,K,L,M

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82	<i>Circaetus gallicus</i> (Gmelin, 1788)	Short-toed snake eagle	LC	A,H,K,M
83	<i>Spilornis cheela</i> (Latham, 1790)	Crested Serpent-eagle	LC	B,K,L,M
84	<i>Circus aeruginosus</i> (Linnaeus, 1758)	Western Marsh-harrier	LC	A,B,G,H,K,L,M
85	<i>Circus macrourus</i> (Gmelin, 1770)	Pallid Harrier	NT	H,K,M
86	<i>Circus pygargus</i> (Linnaeus, 1758)	Montagu's Harrier	LC	L
87	<i>Accipiter badius</i> (Gmelin, 1788)	Shikra	LC	A,B,G,K,L,M
88	<i>Accipiter nisus</i> (Linnaeus, 1758)	Eurasian Sparrowhawk	LC	K
89	<i>Butastur teesa</i> (Franklin, 1831)	White-eyed Buzzard	LC	H,L,M
90	<i>Aquila pomarina</i> Brehm, 1831	Lesser Spotted Eagle	LC	A
91	<i>Aquila clanga</i> Pallas, 1811	Greater Spotted Eagle	VU	A,C,D,E,F,M
92	<i>Aquila rapax</i> (Temminck, 1828)	Tawny Eagle	LC	B,H
93	<i>Aquila nipalensis</i> Hodgson, 1833	Steppe Eagle	LC	B
94	<i>Aquila heliaca</i> Savigny, 1809	Eastern Imperial Eagle	VU	E,L,M
95	<i>Aquila fasciatus</i> (Vieillot, 1822)	Bonelli's Eagle	LC	M
96	<i>Hieraetus pennatus</i> (Gmelin, 1788)	Booted Eagle	LC	A,B
97	<i>Nisaetus cirrhatous</i> (Gmelin, 1788)	Changeable Hawk-eagle	LC	A,B,H
	Rallidae			
98	<i>Amaurornis akool</i> (Sykes, 1832)	Brown Crake	LC	A,K,M
99	<i>Amaurornis phoenicurus</i> (Pennant, 1769)	White-breasted Waterhen	LC	A,B,L,M
100	<i>Porzana pusilla</i> (Pallas, 1776)	Baillon's Crake	LC	A
101	<i>Porphyrio porphyrio</i> (Linnaeus, 1758)	Purple Swamphen	LC	A,B,G,M
102	<i>Gallinula chloropus</i> (Linnaeus, 1758)	Common Moorhen	LC	M
103	<i>Fulica atra</i> Linnaeus, 1758	Common Coot	LC	A,B,G,K,L,M
	Gruidae			
104	<i>Grus antigone</i> (Linnaeus, 1758)	Sarus Crane	VU	A,B,C,D,E,F,G,H,I,L,M
105	<i>Grus virgo</i> (Linnaeus, 1758)	Demoiselle Crane	LC	M
106	<i>Grus grus</i> (Linnaeus, 1758)	Common Crane	LC	I,L
	Turnicidae			
107	<i>Turnix sylvaticus</i> (Desfontaines, 1787)	Small Buttonquail	LC	A
108	<i>Turnix tanki</i> Blyth, 1843	Yellow-legged Buttonquail	LC	L,M
109	<i>Turnix suscitator</i> (Gmelin, 1789)	Barred Buttonquail	LC	H
	Burhinidae			
110	<i>Esacus recurvirostris</i> (Cuvier, 1829)	Great Thick-knee	LC	A,B,I,K,L,M
111	<i>Burhinus oedicephalus</i> (Linnaeus, 1758)	Eurasian Thick-knee	LC	A,B,H,M
	Recurvirostridae			
112	<i>Himantopus himantopus</i> (Linnaeus, 1758)	Black-winged Stilt	LC	A,B,G,H,K,L,M
113	<i>Recurvirostra avosetta</i> Linnaeus, 1758	Pied Avocet	LC	(Rakesh Vyas, pers. comm.)
	Charadriidae			
114	<i>Vanellus malarbaricus</i> (Boddaert, 1783)	Yellow-wattled Lapwing	LC	A,B,G
115	<i>Vanellus duvaucelii</i> (Lesson, 1826)	River Lapwing	LC	A,B,G,K,M
116	<i>Vanellus indicus</i> (Boddaert, 1783)	Red-wattled Lapwing	LC	A,B,G,H,K,L,M
117	<i>Vanellus leucurus</i> (Lichtenstein, 1823)	White-tailed Lapwing	LC	A,G,L
118	<i>Charadrius dubius</i> Scopoli, 1786	Little Ringed Plover	LC	A,B,G,H,K,L,M
119	<i>Charadrius alexandrinus</i> Linnaeus, 1758	Kentish Plover	LC	A,K,L,M
	Rostratulidae			
120	<i>Rostratula benghalensis</i> (Linnaeus, 1758)	Greater Painted-snipe	LC	A,M
	Jacaniidae			
121	<i>Hydrophasianus chirurgus</i> (Scopoli, 1786)	Pheasant-tailed Jacana	LC	A,K,M

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122	<i>Metopidius indicus</i> (Latham, 1790)	Bronze-winged Jacana	LC	M
	Scolopacidae			
123	<i>Gallinago gallinago</i> (Linnaeus, 1758)	Common Snipe	LC	L,M
124	<i>Limosa limosa</i> (Linnaeus, 1758)	Black-tailed Godwit	NT	A,G,K,L,M
125	<i>Numenius arquata</i> (Linnaeus, 1758)	Eurasian Curlew	NT	K,L,M
126	<i>Tringa erythropus</i> (Pallas, 1764)	Spotted Redshank	LC	L
127	<i>Tringa totanus</i> (Linnaeus, 1758)	Common Redshank	LC	A,G,H,K,L,M
128	<i>Tringa stagnatilis</i> (Bechstein, 1803)	Marsh Sandpiper	LC	L
129	<i>Tringa nebularia</i> (Gunnerus, 1767)	Common Greenshank	LC	A,G,K,L,M
130	<i>Tringa ochropus</i> Linnaeus, 1758	Green Sandpiper	LC	A,K,L,M
131	<i>Tringa glareola</i> Linnaeus, 1758	Wood Sandpiper	LC	A,B,G,K,L,M
132	<i>Actitis hypoleucos</i> Linnaeus, 1758	Common Sandpiper	LC	A,B,G,H,K,L,M
133	<i>Calidris minuta</i> (Leisler, 1812)	Little Stint	LC	A,G,H,K,L,M
134	<i>Calidris temminckii</i> (Leisler, 1812)	Temminck's Stint	LC	L,M
135	<i>Philomachus pugnax</i> (Linnaeus, 1758)	Ruff	LC	A,G,H,L,M
	Glareolidae			
136	<i>Cursorius coromandelicus</i> (Gmelin, 1789)	Indian Courser	LC	A
137	<i>Glareola pratincola</i> (Linnaeus, 1766)	Collared Pratincole	LC	A,M
138	<i>Glareola lactea</i> Temminck, 1820	Small Pratincole	LC	A,G,H,J,K,M
	Laridae			
139	<i>Larus cachinnans</i> Pallas, 1811	Caspian Gull	LC	K,M
140	<i>Larus ichthyaetus</i> Pallas, 1773	Pallas's Gull	LC	A,K,L,M
141	<i>Larus brunnicephalus</i> Jerdon, 1840	Brown-headed Gull	LC	A,H,I,K,L,M
142	<i>Larus ridibundus</i> Linnaeus, 1766	Black-headed Gull	LC	K,L,M
143	<i>Sterna aurantia</i> Gray, 1831	River Tern	LC	A,B,G,H,K,L,M
144	<i>Sterna albifrons</i> Pallas, 1764	Little Tern	LC	A,G,J
145	<i>Sterna acuticauda</i> Gray, 1832	Black-bellied Tern	NT	A,G,K,L,M
146	<i>Chlidonias hybrida</i> (Pallas, 1811)	Whiskered Tern	LC	A,G,H,K,L,M
147	<i>Rynchops albicollis</i> Swainson, 1838	Indian Skimmer	VU	A,B,C,D,E,F,G,I,J,K,M
	Pteroclididae			
148	<i>Pterocles exustus</i> Temminck, 1825	Chestnut-bellied Sandgrouse	LC	A,G,H,M
149	<i>Pterocles indicus</i> (Gmelin, 1789)	Painted Sandgrouse	LC	K
	Columbidae			
150	<i>Columba livia</i> Gmelin, 1789	Rock Pigeon	LC	A,B,G,H,K,L,M
151	<i>Streptopelia orientalis</i> (Latham, 1790)	Oriental Turtle-dove	LC	A,B
152	<i>Streptopelia tranquebarica</i> (Hermann, 1804)	Red Collared-dove	LC	A,B,G,M
153	<i>Streptopelia decaocto</i> (Frivaldsky, 1838)	Eurasian Collared-dove	LC	A,B,G,K,L,M
154	<i>Stigmatopelia senegalensis</i> (Linnaeus, 1766)	Laughing Dove	LC	A,B,G,K,L,M
155	<i>Stigmatopelia chinensis</i> (Scopoli, 1786)	Spotted Dove	LC	A,B,G,K,L,M
156	<i>Treron phoenicopterus</i> (Latham, 1790)	Yellow-footed Green-pigeon	LC	B,K,L,M
	Psittacidae			
157	<i>Psittacula eupatria</i> (Linnaeus, 1766)	Alexandrine Parakeet	LC	B,K,M
158	<i>Psittacula krameri</i> (Scopoli, 1769)	Rose-ringed Parakeet	LC	A,B,G,H,K,L,M
159	<i>Psittacula cyanocephala</i> (Linnaeus, 1766)	Plum-headed Parakeet	LC	A,B,G,K,L,M
	Cuculidae			
160	<i>Clamator jacobinus</i> (Boddaert, 1783)	Pied Cuckoo	LC	B,H,M
161	<i>Cuculus varius</i> Vahl, 1797	Common Hawk-cuckoo	LC	A,M
162	<i>Cuculus canorus</i> Linnaeus, 1758	Common Cuckoo	LC	B

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163	<i>Eudynamys scolopaceus</i> (Linnaeus, 1758)	Asian Koel	LC	A,B,G,H,K,L,M
164	<i>Phaenicophaeus leschenaultii</i> (Lesson, 1830)	Sirkeer Malkoha	LC	A,M
165	<i>Centropus sinensis</i> (Stephens, 1815)	Greater Coucal	LC	A,B,G,K,L,M
	Tytonidae			
166	<i>Tyto alba</i> (Scopoli, 1769)	Barn Owl	LC	A,M
	Strigidae			
167	<i>Otus sunia</i> (Hodgson, 1836)	Oriental Scops-owl	LC	B
168	<i>Otus bakkamoena</i> Pennant, 1769	Collared Scops-owl	LC	A,B
169	<i>Bubo bengalensis</i> (Franklin, 1831)	Rock Eagle-owl	LC	A,B,G,K,M
170	<i>Bubo coromandus</i> (Latham, 1790)	Dusky Eagle-owl	LC	M
171	<i>Ketupa zeylanensis</i> (Gmelin, 1788)	Brown Fish-owl	LC	A,K,M
172	<i>Glauclidium radiatum</i> (Tickell, 1833)	Jungle Owlet	LC	K
173	<i>Athene brama</i> (Temminck, 1821)	Spotted Owlet	LC	A,B,H,K,L,M
174	<i>Ninox scutulata</i> (Raffles, 1822)	Brown Hawk-owl	LC	A
175	<i>Asio flammeus</i> (Pontoppidan, 1763)	Short-eared Owl	LC	M
	Caprimulgidae			
176	<i>Caprimulgus indicus</i> Latham, 1790	Grey Nightjar	LC	A,B
177	<i>Caprimulgus macrurus</i> Horsfield, 1821	Large-tailed Nightjar	LC	B
178	<i>Caprimulgus asiaticus</i> Latham, 1790	Indian Nightjar	LC	A,G,L,M
179	<i>Caprimulgus affinis</i> Horsfield, 1821	Savanna Nightjar	LC	B
	Apodidae			
180	<i>Cypsiurus balasiensis</i> (Gray, 1829)	Asian Palm-swift	LC	A,K
181	<i>Apus affinis</i> (Gray, 1830)	House Swift	LC	A,B,H,L,M
	Coraciidae			
182	<i>Coracias benghalensis</i> (Linnaeus, 1758)	Indian Roller	LC	A,B,G,H,K,L,M
	Alcedinidae			
183	<i>Pelargopsis capensis</i> (Linnaeus, 1766)	Stork-billed Kingfisher	LC	B,M
184	<i>Halcyon smyrnensis</i> (Linnaeus, 1758)	White-throated Kingfisher	LC	A,B,G,H,K,L,M
185	<i>Alcedo atthis</i> (Linnaeus, 1758)	Common Kingfisher	LC	A,B,G,K,L,M
186	<i>Ceryle rudis</i> (Linnaeus, 1758)	Pied Kingfisher	LC	A,B,G,H,K,L,M
	Meropidae			
187	<i>Merops orientalis</i> Latham, 1802	Little Green Bee-eater	LC	A,B,G,L,M
188	<i>Merops philippinus</i> Linnaeus, 1766	Blue-tailed Bee-eater	LC	B,G,L,M
	Upupidae			
189	<i>Upupa epops</i> Linnaeus, 1758	Eurasian Hoopoe	LC	A,B,H,K,M
	Bucerotidae			
190	<i>Ocyrceros birostris</i> (Scopoli, 1786)	Indian Grey Hornbill	LC	A,B,M
	Ramphastidae			
191	<i>Megalaima zeylanica</i> (Gmelin, 1788)	Brown-headed Barbet	LC	B
192	<i>Megalaima haemacephala</i> (Mller, 1776)	Coppersmith Barbet	LC	B,G,K,M
	Picidae			
193	<i>Jynx torquilla</i> Linnaeus, 1758	Eurasian Wryneck	LC	K,M
194	<i>Dendrocopos nanus</i> (Vigors, 1832)	Brown-capped Woodpecker	LC	B
195	<i>Dendrocopos mahrattensis</i> (Latham, 1801)	Yellow-crowned Woodpecker	LC	B,K,M
196	<i>Picus xanthopygus</i> (Gray & Gray, 1846)	Streak-throated Woodpecker	LC	B
197	<i>Dinopium benghalense</i> (Linnaeus, 1758)	Black-rumped Flameback	LC	A,B,K,M
198	<i>Chrysocolaptes festivus</i> (Boddaert, 1783)	White-naped Woodpecker	LC	B

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	Campephagidae			
199	<i>Tephrodornis pondicerianus</i> (Gmelin, 1789)	Common Woodshrike	LC	A,B,M
200	<i>Coracina macei</i> (Lesson, 1831)	Large Cuckooshrike	LC	M
	Aegithinidae			
201	<i>Aegithina tiphia</i> (Linnaeus, 1758)	Common Iora	LC	B,K,M
	Campephagidae			
202	<i>Pericrocotus cinnamomeus</i> (Linnaeus, 1766)	Small Minivet	LC	B,G,M
203	<i>Pericrocotus erythropygus</i> (Jerdon, 1840)	White-bellied Minivet	LC	B
204	<i>Pericrocotus ethologus</i> Bangs & Phillips, 1914	Long-tailed Minivet	LC	A
	Laniidae			
205	<i>Lanius isabellinus</i> Ehrenberg, 1833	Rufous-tailed Shrike	LC	K
206	<i>Lanius cristatus</i> Linnaeus, 1758	Brown Shrike	LC	A,K
207	<i>Lanius vittatus</i> Valenciennes, 1826	Bay-backed Shrike	LC	A,B,G,K,M
208	<i>Lanius schach</i> Linnaeus, 1758	Long-tailed Shrike	LC	A,B,G,K,M
209	<i>Lanius excubitor</i> Linnaeus, 1758	Great Grey Shrike	LC	B,G,K,M
	Oriolidae			
210	<i>Oriolus oriolus</i> (Linnaeus, 1758)	Golden Oriole	LC	B,G,L,M
	Dicruridae			
211	<i>Dicrurus macrocercus</i> Vieillot, 1817	Black Drongo	LC	A,B,G,K,L,M
212	<i>Dicrurus leucophaeus</i> Vieillot, 1817	Ashy Drongo	LC	A,B
213	<i>Dicrurus caerulescens</i> (Linnaeus, 1758)	White-bellied Drongo	LC	B,L,M
	Rhipiduridae			
214	<i>Rhipidura aureola</i> Lesson, 1830	White-browed Fantail	LC	L,M
	Monarchidae			
215	<i>Terpsiphone paradisi</i> (Linnaeus, 1758)	Asian Paradise-flycatcher	LC	B,L,M
	Corvidae			
216	<i>Dendrocitta vagabunda</i> (Latham, 1790)	Rufous Treepie	LC	A,H,K,L,M
217	<i>Corvus splendens</i> Vieillot, 1817	House Crow	LC	A,B,G,H,K,L,M
218	<i>Corvus macrorhynchos</i> Wagler, 1827	Large-billed Crow	LC	A,B,G,K,L,M
219	<i>Corvus corax</i> Linnaeus, 1758	Common Raven	LC	M
	Paridae			
220	<i>Parus major</i> Linnaeus, 1758	Great Tit	LC	A,B,G,M
	Hirundinidae			
221	<i>Riparia paludicola</i> (Vieillot, 1817)	Plain Martin	LC	A,B
222	<i>Hirundo concolor</i> Sykes, 1832	Dusky Crag-martin	LC	A,K,L,M
223	<i>Hirundo rustica</i> Linnaeus, 1758	Barn Swallow	LC	A,B,G,K,L,M
224	<i>Hirundo smithii</i> Leach, 1818	Wire-tailed Swallow	LC	A,K,L
225	<i>Hirundo daurica</i> Linnaeus, 1771	Red-rumped Swallow	LC	A,B,K,L,M
226	<i>Hirundo fluvicola</i> Blyth, 1855	Streak-throated Swallow	LC	A,G,K,M
	Alaudidae			
227	<i>Mirafra cantillans</i> Blyth, 1844	Singing Bushlark	LC	L,M
228	<i>Mirafra assamica</i> Horsfield, 1840	Rufous-winged Lark	LC	A
229	<i>Mirafra erythroptera</i> Blyth, 1845	Indian Lark	LC	A,G,L,M
230	<i>Ammomanes phoenicura</i> (Franklin, 1831)	Rufous-tailed Lark	LC	B,G,H,M
231	<i>Calandrella brachydactyla</i> (Leisler, 1814)	Greater Short-toed Lark	LC	A
232	<i>Galerida cristata</i> (Linnaeus, 1758)	Crested Lark	LC	A,G,K,L,M
233	<i>Alauda gulgula</i> Franklin, 1831	Oriental Skylark	LC	A,B
234	<i>Eremopterix griseus</i> (Scopoli, 1786)	Ashy-crowned Sparrow-lark	LC	A,B,G,H,K,L,M

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	Cisticolidae			
235	<i>Cisticola juncidis</i> (Rafinesque, 1810)	Zitting Cisticola	LC	B
236	<i>Prinia hodgsonii</i> Blyth, 1844	Grey-breasted Prinia	LC	A
237	<i>Prinia gracilis</i> (Lichtenstein, 1823)	Graceful Prinia	LC	B
238	<i>Prinia sylvatica</i> Jerdon, 1840	Jungle Prinia	LC	K
239	<i>Prinia socialis</i> Sykes, 1832	Ashy Prinia	LC	A,G,K,M
240	<i>Prinia inornata</i> Sykes, 1832	Plain Prinia	LC	G,K,M
	Pycnonotidae			
241	<i>Pycnonotus leucotis</i> (Gould, 1836)	White-eared Bulbul	LC	A,B,G,K,M
242	<i>Pycnonotus cafer</i> (Linnaeus, 1766)	Red-vented Bulbul	LC	A,B,G,K,L,M
	Sylviidae			
243	<i>Orthotomus sutorius</i> (Pennant, 1769)	Common Tailorbird	LC	B,G,K,M
244	<i>Acrocephalus stentoreus</i> (Ehrenberg, 1833)	Clamorous Reed-warbler	LC	M
245	<i>Phylloscopus collybita</i> (Vieillot, 1817)	Common Chiffchaff	LC	L,M
246	<i>Phylloscopus griseolus</i> Blyth, 1847	Sulphur-bellied Warbler	LC	M
247	<i>Phylloscopus humei</i> (Brooks, 1878)	Hume's Leaf-warbler	LC	B
248	<i>Hippolais rama</i> (Sykes, 1832)	Sykes's Warbler	LC	A
249	<i>Sylvia curruca</i> (Linnaeus, 1758)	Lesser Whitethroat	LC	K,L,M
250	<i>Sylvia hortensis</i> (Gmelin, 1789)	Orphean Warbler	LC	M
	Timaliidae			
251	<i>Chrysomma sinense</i> (Gmelin, 1789)	Yellow-eyed Babbler	LC	L,M
252	<i>Turdoides caudata</i> (Dumont, 1823)	Common Babbler	LC	A,B,G,K,M
253	<i>Turdoides malcolmi</i> (Sykes, 1832)	Large Grey Babbler	LC	A,G,K,L,M
254	<i>Turdoides striata</i> (Dumont, 1823)	Jungle Babbler	LC	A,B,G,K,L,M
	Zosteropidae			
255	<i>Zosterops palpebrosus</i> (Temminck, 1824)	Oriental White-eye	LC	B,G,M
	Sturnidae			
256	<i>Acridotheres tristis</i> (Linnaeus, 1766)	Common Myna	LC	A,B,G,K,L,M
257	<i>Acridotheres ginginianus</i> (Latham, 1790)	Bank Myna	LC	A,B,G,K,L,M
258	<i>Sturnus pagodarum</i> (Gmelin, 1789)	Brahminy Starling	LC	A,B,G,K,M
259	<i>Sturnus roseus</i> (Linnaeus, 1758)	Rosy Starling	LC	A,B,K,M
260	<i>Sturnus contra</i> Linnaeus, 1758	Asian Pied Starling	LC	A,B,G,K,L,M
261	<i>Sturnus vulgaris</i> Linnaeus, 1758	Common Starling	LC	B
	Muscicapidae			
262	<i>Luscinia svecica</i> (Linnaeus, 1758)	Bluethroat	LC	K,M
263	<i>Copsychus saularis</i> (Linnaeus, 1758)	Oriental Magpie Robin	LC	A,B,G,K,M
264	<i>Saxicoloides fulicatus</i> (Linnaeus, 1766)	Indian Robin	LC	A,B,G,K,L,M
265	<i>Phoenicurus ochruros</i> (Gmelin, 1774)	Black Redstart	LC	A,K,L,M
266	<i>Saxicola torquatus</i> (Linnaeus, 1766)	Common Stonechat	LC	A,B,K,L,M
267	<i>Saxicola caprata</i> (Linnaeus, 1766)	Pied Bushchat	LC	A,B,K,L,M
268	<i>Oenanthe picata</i> (Blyth, 1847)	Variable Wheatear	LC	K,L
269	<i>Oenanthe deserti</i> (Temminck, 1825)	Desert Wheatear	LC	K
270	<i>Oenanthe isabellina</i> (Temminck, 1829)	Isabelline Wheatear	LC	L,M
271	<i>Cercomela fusca</i> (Blyth, 1851)	Indian Chat	LC	A,B,G,K,L,M
272	<i>Monticola solitarius</i> (Linnaeus, 1758)	Blue Rock Thrush	LC	K,M
273	<i>Muscicapa dauurica</i> Pallas, 1811	Asian Brown Flycatcher	LC	B,M
274	<i>Ficedula parva</i> (Bechstein, 1792)	Red-breasted Flycatcher	LC	L,M
275	<i>Ficedula supercilii</i> (Jerdon, 1840)	Ultramarine Flycatcher	LC	B

	Species	Common Name	IUCN Status 2011	References
276	<i>Eumyias thalassinus</i> Swainson, 1838	Verditer Flycatcher	LC	M
277	<i>Cyornis tickelliae</i> Blyth, 1843	Tickell's Blue-flycatcher	LC	B,M
278	<i>Culicicapa ceylonensis</i> (Swainson, 1820)	Grey-headed Canary-flycatcher	LC	L,M
	Nectariniidae			
279	<i>Nectarinia asiatica</i> (Latham, 1790)	Purple Sunbird	LC	A,B,G,K,L,M
	Passeridae			
280	<i>Passer domesticus</i> (Linnaeus, 1758)	House Sparrow	LC	A,B,G,K,L,M
281	<i>Passer hispaniolensis</i> (Temminck, 1820)	Spanish Sparrow	LC	M
282	<i>Passer montanus</i> (Linnaeus, 1758)	Eurasian Tree Sparrow	LC	A
283	<i>Petronia xanthocollis</i> (Burton, 1838)	Chestnut-shouldered Petronia	LC	A,G,L,M
	Ploceidae			
284	<i>Ploceus benghalensis</i> (Linnaeus, 1758)	Black-breasted Weaver	LC	B
285	<i>Ploceus manyar</i> (Horsfield, 1821)	Streaked Weaver	LC	A
286	<i>Ploceus philippinus</i> (Linnaeus, 1766)	Baya Weaver	LC	A,B,G,K,M
	Estrildidae			
287	<i>Amandava amandava</i> (Linnaeus, 1758)	Red Avadavat	LC	M
288	<i>Amandava formosa</i> (Latham, 1790)	Green Avadavat	VU	N
289	<i>Lonchura malabarica</i> (Linnaeus, 1758)	White-throated Munia	LC	A,K,L,M
290	<i>Lonchura punctulata</i> (Linnaeus, 1758)	Scaly-breasted Munia	LC	A,B
291	<i>Lonchura malacca</i> (Linnaeus, 1766)	Black-headed Munia	LC	A,B
	Motacilidae			
292	<i>Motacilla alba</i> Linnaeus, 1758	White Wagtail	LC	A,H,L,M
293	<i>Motacilla madaraspatensis</i> Gmelin, 1789	White-browed Wagtail	LC	A,B,G,H,K,L,M
294	<i>Motacilla citreola</i> Pallas, 1776	Citrine Wagtail	LC	K
295	<i>Motacilla flava</i> Linnaeus, 1758	Yellow Wagtail	LC	A,B,G,K,M
296	<i>Motacilla cinerea</i> Tunstall, 1771	Grey Wagtail	LC	A,B,G,K,L,M
297	<i>Anthus rufulus</i> Vieillot, 1818	Paddyfield Pipit	LC	A,B,K,L,M
298	<i>Anthus novaeseelandiae</i> (Gmelin, 1789)	Australasian Pipit	LC	H
299	<i>Anthus campestris</i> (Linnaeus, 1758)	Tawny Pipit	LC	B
300	<i>Anthus trivialis</i> (Linnaeus, 1758)	Tree Pipit	LC	B
301	<i>Anthus hodgsoni</i> Richmond, 1907	Olive-backed Pipit	LC	M
302	<i>Anthus spinoletta</i> (Linnaeus, 1758)	Water Pipit	LC	L
	Fringillidae			
303	<i>Carpodacus erythrinus</i> (Pallas, 1770)	Common Rosefinch	LC	A,K
	Emberizidae			
304	<i>Melophus lathamii</i> (Gray, 1831)	Crested Bunting	LC	B,G,M
305	<i>Emberiza stewarti</i> (Blyth, 1854)	White-capped Bunting	LC	K
306	<i>Emberiza buchanani</i> Blyth, 1844	Grey-necked Bunting	LC	K,M
307	<i>Emberiza melanocephala</i> Scopoli, 1769	Black-headed Bunting	LC	M
308	<i>Emberiza bruniceps</i> Brandt, 1841	Red-headed Bunting	LC	M

IUCN status: LC - Least Concern; NT - Near Threatened; VU - Vulnerable; EN - Endangered; CR - Critically Endangered.

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Table 5. Checklist of mammals of the Chambal River Basin

	Species	Common Name	IUCN status 2011	References
	Cercopithecidae			
1	<i>Macaca mulatta</i> (Zimmermann, 1780)	Rhesus Macaque	LC	A,B,K,O
2	<i>Semnopithecus entellus</i> (Dufresne, 1797)	Bengal Hanuman Langur	LC	A,B,J,K,O
	Sciuridae			
3	<i>Funambulus pennantii</i> Wroughton, 1905	Five-striped Palm Squirrel	LC	A,B,O
	Muridae			
4	<i>Tatera indica</i> (Hardwicke, 1807)	Indian Gerbil	LC	A,B,G,O
5	<i>Millardia meltada</i> * (Gray, 1837)	Soft-furred Field Rat	LC	B
6	<i>Mus musculus</i> Linnaeus, 1758	House Mouse	LC	A,B,G
7	<i>Rattus rattus</i> (Linnaeus, 1758)	House Rat	LC	B,K
8	<i>Bandicota bengalensis</i> * (Gray, 1835)	Lesser Bandicoot Rat	LC	B
	Hystricidae			
9	<i>Hystrix indica</i> Kerr, 1792	Indian Crested Porcupine	LC	J,K,O
	Leporidae			
10	<i>Lepus nigricollis</i> F. Cuvier, 1823	Indian Hare	LC	A,B,J,K,O
	Erinaceidae			
11	<i>Hemiechinus collaris</i> (Gray, 1830)	Collared Hedgehog	LC	G
12	<i>Paraechinus micropus</i> Blyth, 1846	Indian Hedgehog	LC	O
	Soricidae			
13	<i>Suncus murinus</i> Linnaeus, 1766	Asian House Shrew	LC	A,K
	Pteropodidae			
14	<i>Rousettus leschenaulti</i> * (Desmarest, 1820)	Leschenault's Rousette	LC	B
15	<i>Pteropus giganteus</i> (Brünnich, 1782)	Indian Flying Fox	LC	A,B,O,H
16	<i>Cynopterus sphinx</i> (Vahl, 1797)	Short-nosed Fruit Bat	LC	A,B,
	Rhinopomatidae			
17	<i>Rhinopoma microphyllum</i> (Brünnich, 1792)	Greater Mouse-tailed Bat	LC	H
18	<i>Rhinopoma hardwickii</i> Gray, 1831	Lesser Mouse-tailed Bat	LC	A*,H
	Hipposideridae			
19	<i>Hipposideros fulvus</i> Gray, 1838	Fulvous Leaf-nosed Bat	LC	B,H
	Megadermatidae			
20	<i>Megaderma lyra</i> É. Geoffroy, 1810	Greater False vampire Bat	LC	A,H
	Rhinolophidae			
21	<i>Rhinolophus lepidus</i> Blyth, 1844	Blyth's Horseshoe Bat	LC	H
	Emballonuridae			
22	<i>Taphozous longimanus</i> Hardwicke, 1825	Long-winged Tomb Bat	LC	H
23	<i>Taphozous melanopogon</i> * Temminck, 1841	Black-bearded Tomb Bat	LC	B
24	<i>Taphozous perforatus</i> É. Geoffroy, 1818	Egyptian Tomb Bat	LC	A,B
25	<i>Taphozous nudiventris</i> Cretzschmar, 1830	Naked-rumped Tomb Bat	LC	H
	Molossidae			
26	<i>Tadarida aegyptiaca</i> (É. Geoffroy, 1818)	Egyptian Free-tailed Bat	LC	A,H
	Vespertilionidae			
27	<i>Scotophilus heathii</i> (Horsfield, 1831)	Greater Yellow House Bat	LC	H
28	<i>Scotophilus kuhlii</i> * Leach, 1821	Lesser Yellow House Bat	LC	A
	<i>Pipistrellus coromandra</i> (Gray, 1838)	Indian Pipistrelle	LC	B,O
29	<i>Pipistrellus tenuis</i> (Temminck, 1840)	Indian Pygmy Bat	LC	H
30	<i>Scotozous dormeri</i> Dobson, 1875	Dormer's Bat	LC	H

	Species	Common Name	IUCN status 2011	References
	Manidae			
31	<i>Manis crassicaudata</i> É. Geoffroy, 1803	Indian Pangolin	NT	C
	Felidae			
32	<i>Felis chaus</i> Schreber, 1777	Jungle Cat	LC	I,K,O
33	<i>Felis silvestris</i> Schreber, 1777	Wild Cat / Desert Cat	LC	E,J,O
34	<i>Prionailurus bengalensis</i> (Kerr, 1792)	Leopard Cat	LC	K,L
35	<i>Prionailurus viverrinus</i> Bennett, 1833	Fishing Cat	EN	O
36	<i>Caracal caracal</i> (Schreber, 1776)	Caracal	LC	F
37	<i>Panthera pardus</i> (Linnaeus, 1758)	Leopard	NT	K,O
38	<i>Panthera tigris</i> (Linnaeus, 1758)	Tiger	EN	K
	Viverridae			
39	<i>Paradoxurus hermaphroditus</i> (Pallas, 1777)	Asian Palm Civet	LC	A,B,O
40	<i>Viverricula indica</i> (É. Geoffroy Saint-Hilaire, 1803)	Small Indian Civet	LC	A,B,O
	Herpestidae			
41	<i>Herpestes edwardsii</i> (É. Geoffroy Saint-Hilaire, 1818)	Indian Grey Mongoose	LC	A,B,K,O
42	<i>Herpestes javanicus</i> (É. Geoffroy Saint-Hilaire, 1818)	Small Indian Mongoose	LC	A,B,O
43	<i>Herpestes smithii</i> Gray, 1837	Ruddy Mongoose	LC	B,D
	Hyaenidae			
44	<i>Hyaena hyaena</i> (Linnaeus, 1758)	Striped Hyaena	NT	A,B,J,K,O
	Canidae			
45	<i>Canis lupus pallipes</i> Linnaeus, 1758	Indian Wolf	LC	J,K,O
46	<i>Canis aureus</i> Linnaeus, 1758	Common Jackal	LC	A,B,I,J,K,O
47	<i>Cuon alpinus</i> (Pallas, 1811)	Dhole	EN	K
48	<i>Vulpes vulpes pusilla</i> (Linnaeus, 1758)	Desert Fox	LC	K
49	<i>Vulpes bengalensis</i> (Shaw, 1800)	Indian Fox	LC	J,K
	Ursidae			
50	<i>Melursus ursinus</i> (Shaw, 1791)	Sloth Bear	VU	K,O
	Mustelidae			
51	<i>Mellivora capensis</i> (Schreber, 1776)	Honey Badger	LC	K
52	<i>Lutrogale perspicillata</i> (I. Geoffroy Saint-Hilaire, 1826)	Smooth-coated Otter	VU	A,B,M,N,I,J,K,O
	Suidae			
53	<i>Sus scrofa cristatus</i> Linnaeus, 1758	Indian Wild Boar	LC	A,J,K,O
	Bovidae			
54	<i>Antelope cervicapra</i> (Linnaeus, 1758)	Blackbuck	NT	A,K,O
55	<i>Gazella gazella</i> (Pallas, 1766)	Chinkara	VU	K,O
56	<i>Boselaphus tragocamelus</i> (Pallas, 1766)	Nilgai	LC	A,J,K,O
57	<i>Tetracerus quadricornis</i> (de Blainville, 1816)	Four-horned Antelope	VU	K
	Cervidae			
58	<i>Axis axis</i> (Erxleben, 1777)	Chital	LC	J,K
59	<i>Rusa unicolor</i> (Kerr, 1792)	Sambar	VU	A,J,K
	Platanistidae			
60	<i>Platanista gangetica</i> (Roxburgh, 1801)	Gangetic River Dolphin	EN	A,B,M,N,I,J,K,O

IUCN status: LC - Least Concern; NT - Near Threatened; VU - Vulnerable; EN - Endangered; CR - Critically Endangered.

References: A - This study (fieldwork in 2009 - 2010); B - This study (intermittent fieldwork between 2006 and 2008); C - Chauhan & Narain (2001); D - Choudhury et al. (2008); E - Driscoll & Nowell (2009); F - Khudsar (2004); G - Molur et al. (2005); H - Molur et al. (2002); I - Nair (2009); J - Rao (1988); K - Sale (1982); L - Sanderson et al. (2008); M - Sharma et al. (1995); N - Vyas (2004); O - Vyas et al. (in prep.)

* Identification based on comparison of field observations with standard identification / field guides. Individuals were not available for anatomical or morphological examination. This record needs to be verified.

Hindu 2006a, b).

CONCLUSION

Our effort is intended at providing a peer-reviewed and open-access compilation of vertebrate fauna of the Chambal River Basin, which highlights the region's ecological significance. We believe that this checklist will serve as a baseline for assessing changes in species status, distributions and occurrences in the face of threats; inform protected area managers, conservationists and environment impact assessors; and serve as a platform to initiate participatory biodiversity monitoring initiatives.

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