# A new breeding location of Indian Skimmer *Rynchops albicollis,* and notes on other birds in Son Gharial Wildlife Sanctuary, Madhya Pradesh, India

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#### Abstract

Here we report of a new breeding population of Indian Skimmer *Rynchops albicollis*, in the Son Gharial Wildlife Sanctuary. Breeding of Indian Skimmers indicates that the sanctuary could be a potential Important Bird Area (IBA), and provides opportunities for locating other breeding sites of the birds, on Son River, and its tributaries—Banas, and Gopad. We also present notes on some common, and rare birds found in the sanctuary, and a bird list of 111 species, compiled from earlier published reports and our own opportunistic observations, adding 24 species to the sanctuary's checklist. We feel that detailed scientific bird surveys are needed in the Son Gharial Wildlife Sanctuary to comprehensively document its avifaunal diversity.

# Introduction

Son Gharial Wildlife Sanctuary (hereafter Son) is situated in Sidhi District of Madhya Pradesh. It begins from Bansagar Dam (24.18°N, 81.28°E), and ends at Piparjhar village (24.60°N, 82.77°E), bordering Mirzapur District, Uttar Pradesh (Fig. 1). The sanctuary extends southward to the Eastern Vindhya Range, or the Kaimur Range of eastern Madhya Pradesh. It is 209 km long, and has 200 m wide riverbanks on either sides of the Son River (a major tributary of River Ganges) (Rao 1992).

In the past two decades the avifauna of the sanctuary has been studied, either in detail (Sharma & Sharma 1997; Singh *et al.*, 2015), or through rapid assessments (Sharma *et al.*, 1999; Sharma *et al.*, 2011; Nair & Katdare 2013). In the present study, we try to review the existing state of knowledge on the avifauna of the area, and augment it with our own observations.



Fig. 1. The Son Wildlife Sanctuary

#### Study area

Son is a shallow, meandering sand-bed river with an extensive floodplain, comprising midstream sandbars. The river flows between cliff-like banks characterized by terraced accumulations of early Middle- to Late Pleistocene sediments (Gatti 2010). The river flows in shallow streams that get divided into two types of riverbeds: one comprising rocky beds with multiple pools, present at four locations along the entire stretch of the sanctuary, two, comprising sandy islands, and riverbanks. The vegetation around the Son River is mainly composed of two forest types: tropical moist deciduous forests, and tropical dry deciduous forests (Champion & Seth 1968). The Son was declared as a wildlife sanctuary in 1981 by the government of Madhya Pradesh to protect, and preserve the faunal diversity of the river, specifically the critically endangered gharial *Gavialis gangeticus*, and the vulnerable marsh crocodile *Crocodylus palustris* (Singh *et al.*, 2015).

# Methodology

Over a period of one year, three visits (13 April 2011, 28 January, and 15 April 2012, respectively) were made to Son. The visits were predominantly made to the gharial-spotting site of Jogdeha Ghat, passing through Bansagar Dam Shikargang, to an unnamed spot (24.40°N, 81.68°E). Birds were recorded randomly. Our observations revealed that Jogdeha Ghat sustains a larger number of wetland birds than any other sites visited along the Son River.

#### Results

Based on our recent observations, and from previously published works, we drew up a bird list of 111 species, of which 24 were additions from our recent visits (Appendix). Under The IUCN Red List of Threatened Species (http://www.iucnredlist.org/), 94 of these species were categorised as, of Least Concern, seven as Near Threatened, and ten as Threatened.

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A significant outcome of our observations was the discovery of a hitherto unrecorded breeding site of Indian Skimmer, besides recording the Common Pochard at Son, and other riverine bird species like Black-necked Stork, Black-headed Ibis, Great Thick Knee, and River Lapwing.

#### Indian Skimmer Rynchops albicollis VU

Fourteen individuals were recorded nesting on a small sandisland near the southern bank of the river, at Jogdeha, on 15 April 2012 **[47]**. This is a new breeding colony, and falls within Son, unrecorded earlier (Sharma & Sharma 1997; Sharma *et al.* 1999; Sharma *et al.* 2011; Nair & Katdare 2013; Singh *et al.* 2015). Though prior studies did not indicate skimmers breeding in the sanctuary, all of them have recorded it during the breeding season (Table 1) and hence this proves a virtual breeding population in the sanctuary in recent years.



47. Indian Skimmers Rynchops albicollis at Jogdeha Ghat.

Table	1. Site locations representing A	R. albicolis population	studied by earlier workers
S. No.	Site location	Number recorded	Reference
1.	Terideh near Bhaversen Ghat	2	Nair & Katdare (2013)
2.	Jogdeha	17	Singh <i>et al</i> (2015)
3.	Jogdeha	14	Nair & Katdare (2013)
4.	Kultideha	18-21	Nair & Katdare (2013)
5.	Kherpur/Bichheri Ghat	≈80	Srivastava (2014)
6.	Kheraini Ghat		

# Common Pochard Aythya ferina VU

A flock of 47 birds was recorded mid-river at Shikargang, near Terideh, on 28 January at 1505 hrs. This is a first record from Son, and in 2015 this species has been up-listed to Vulnerable by IUCN.

# Black-necked Stork Ephippiorhynchus asiaticus NT

Recorded in two different seasons, an adult was spotted at an unnamed location on 28 January 2012, at 0920 hrs, while it foraged along the riverbank, and four juveniles were spotted at Jogdeha on 15 April 2012 at 1335 hrs, while they basked, and waded along the southern sandy bank.

#### Black-headed Ibis Threskiornis melanocephalus NT

About 11 birds were recorded basking on the southern bank of the river on 28 January 2012. Six birds were recorded on 15 April 2012 on rocky islands mid-river at Jogdeha Ghat.

#### Great Thick Knee Esacus recurvirostris NT

Six birds were recorded on mid-river rocky beds on 28 January, and five on 15 April 2012 at Jogdeha Ghat.

#### River Lapwing Vanellus duvaucelii NT

Two birds were spotted on rocky river banks at an unnamed location (24.41°N, 81.69°E) at 0900 hrs, and two birds were later recorded from Jogdeha Ghat at 1335 hrs on 28 January 2012.

# Discussions

# A potential breeding site for Indian Skimmers

The Indian Skimmer occurs on sandy rivers, and lakes of various sizes, and is principally adapted to feeding while flying over rivers. It breeds on sandy spits, or river islands. It frequently feeds near the edges of river channels, and lagoons-sometimes where the water depth is only three to four centimeters (BirdLife International 2001). The geography of Son River, and its tributaries, the Banas, and Gopad rivers, provides an ideal habitat for this bird (Fig. 2). The river has shallow channels and sandy islands throughout its length in Son, with the exception of four rocky beds, with large and deep pools and sparse vegetation at the beginning of sanctuary, mainly at Shikargang, Kuldeha Bridge, and Jogdeha Bridge. The confluence of the Banas, and Gopad rivers also provides nesting opportunities by opening-up large sandy banks and shallow channels. In the earlier studies (Sharma & Sharma 1997; Sharma et al. 1999; Sharma et al. 2011; Nair & Katdare 2013; Singh et al. 2015), apart from Jogdeha Ghat, the existence of this bird during its breeding season has been reported from sites that are only at confluence points of tributaries, and not from the interiors. However, we still do not know much about the pattern of movements of the species. Although flooding regimes could be critical, breeding can only occur when water levels are low (BirdLife International 2001).



Fig. 2. Sites representing potential Gharial breeding sites where Indian Skimmers have been recorded.

We observed that the Son River offers sandy banks, and midriver islands, ideal for nesting of the species, along the whole stretch of the sanctuary (>100 km). Earlier studies seem to have restricted most of their activities to gharial breeding sites at Terideh Ghat, Jogdeha Ghat, Kherpur/Bicchheri Ghat, Kultideh, and Kheraini Ghat (Table 1).

With a record of more than 80 birds at confluence of Gopad, and Son rivers in 2014 (Srivastava 2014), there is a possibility of identifying more breeding sites of Indian Skimmers on the Son River; a clear need for more intensive surveys during the bird's breeding season, which is highly dependent on riverine water levels (in turn dependent upon regional rainfall). The breeding season of the species is predominantly from March to May (BirdLife International 2001).

Considering that the current estimate of Indian Skimmer population is 6,000–10,000 individuals, of which, roughly 4,000-6,700 are mature birds (BirdLife International 2015a), the Son population of 80 individuals is >1% of the global population level (Wetlands International 2015), qualifying it to be listed under the Global IBA criteria (BirdLife International 2015b).

India has always been the most important country for the species. It has now become crucial in any strategy to preserve it (BirdLife International 2015c). IBAs are part of a wider, integrated approach to conservation that embrace sites, species, and habitat protection, and are used to reinforce existing protected areas networks (BirdLife International 2015b).

Our study reveals that Son supports ten species under the IUCN Red List categories (IUCN 2015.3). Besides this, we strongly feel that Son holds great potential for the commoner avifauna as well. However, it is difficult to assess the avifaunal diversity of Son, based merely on earlier studies in a sanctuary that stretches over 209 km. The Son River has two big tributaries originating from thick forests, and they also have similar geography, flowing patterns, and run through the forested areas, scrubs, undulating rocky cliffs, farmlands, and human habitation. This could very well contribute to a great diversity in avifauna in the sanctuary, but it needs to be validated by further detailed studies and scientific surveys in future.

#### Alarming threats

Though most of the bird species are legally protected under The Indian Wildlife (Protection) Act, 1972, their habitats are under heavy anthropogenic pressures. One of the major threats to the ecology, and habitat of birds along the river is anthropogenic disturbance. Increase in human populations in surrounding villages, and towns has resulted in the increase and expansion of new settlements, modern agricultural practices with the use of toxic pesticides, illegal encroachment for temporary cultivation along river banks, and river beds, and increased livestock grazing (Sharma & Sharma 1997; Singh *et al.* 2015). These pressures could have potential impacts on the degradation of nesting and basking habitats of skimmers along the Son River. We also found that due to habitations along the river, there is a great deal of movement of cattle, and stray dogs, which could pose a threat to the eggs, and nestlings of Indian Skimmers.

Sharma & Sharma (1997), and Singh *et al.* (2015) indicate that the Son River has become shallower due to the construction of the Bansagar Dam, which has resulted in drastic water flow instability, with low flow conditions in the river, which in turn has enhanced siltation, and reduced water depths. During summer, the water level plummets; while during the monsoon, due to sudden discharge, the river is in spate, causing potential flood situations.

Industrial developments in the district have resulted in higher dependency on the river for sand, and thus, sand mining from riverbanks has increased (Singh *et al.* 2015). Also, the denotification of large sections of the river areas of the sanctuary for sand mining (Singh *et al.* 2015) could result in a detrimental loss of critical habitat for Indian Skimmers in the sanctuary in future.

The inhabitants, or the local communities, are completely dependent on the river for their livelihood, which urges a dependency upon the fishes and turtles as food. Often this is coupled with certain unsustainable practices of fishing, such as the use of explosives, and netting (Sharma *et al.* 2011). Dumping of non-biodegradable waste, and garbage **[48]**, by the local communities, who celebrate most of their religious ceremonies, festivals, and *melas* along the river, has resulted in littering of the habitat with cutlery, and disposable polystyrene and plastic materials.



**48.** Discarded non-biodegradable waste near the most important Gharial breeding site at Jogdeha Ghat.

#### Conservation

Son was established to protect the gharial. Thus, most of the conservation policies for, and research at Son are primarily centered on the gharial. But one should not forget that Son also supports great avifaunal diversity along the river, and adjoining areas. The occurrence of such significant bird species throughout the area highlights the importance of landscape level conservation of avifauna and their habitats along the Son River. Conservation of an area can be achievable, if there is a reduction in anthropological pressures.

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# References

- Bharos, A. M. K., 2008. Sighting records of Fulvous Whistling Ducks (Dendrocygna bicolor). Newsletter for Birdwatchers 47 (6): 93 (2007).
- BirdLife International. 2001. Species factsheet: Rynchops albicollis. In: Threatened birds of Asia: the BirdLife International Red Data Book. Cambridge, UK: BirdLife International. Pp. 1493–1507.
- BirdLife International. 2015a. Species factsheet: *Rynchops albicollis*. Downloaded from http://www.birdlife.org on 13/03/2015.
- BirdLife International. 2015b. Global IBA Criteria. Website URL: http://www.birdlife.org/ datazone/info/ibacritalob. [Accessed on 18 March 2015].
- BirdLife International. 2015c. Country profile: India. Website URL: http://www.birdlife. org/datazone/country/india. [Accessed on 22 March 2015.]
- Champion, H. G., & Seth, S. K., 1968. A revised survey of the forest types of India. Govt. of India, New Delhi.
- Gatti, E., 2010. Preliminary observations on the stratigraphy of the Son river sediments: the YTT, seasonality and post-eruptive river response. In: *The Toba supereruption: a critical moment in human evolution?* 20–21 *February* 2010. Centre for Archaeology, Art and Culture: University of Oxford.
- Nair, T., & Katdare, S., 2013. Dry-season assessment of gharials (*Gavialis gangeticus*) in the Betwa, Ken and Son Rivers, India. <u>In:</u> 22<sup>nd</sup> Working Meeting of the IUCN SSC Crocodile Specialist Group, Sri Lanka 20–23 May 2013. *Proceedings: World Crocodile Conference*. 53–65.
- Rao, R. J., 1992. Conservation status of the crocodiles in the Madhya Pradesh, India. Pp 32–45. In: Crocodiles—Proceedings of the 11th Working Meeting of the Crocodile Specialist Group of the Species Survival Commission of the IUCN–The World Conservation Union, Gland, Switzerland. Volume 2.
- Sharma R. K., Choudhary, P. K., & Basu, D., 1999. Status of Gharial in Ken and Sone Gharial Sanctuary in Madhya Pradesh. *ENVIS Wildlife and Protected Areas* 2 (1): 87–90.
- Sharma, R. K., & Sharma, S., 1997. Wetland faunal survey of Sone Gharial Sanctuary in Madhya Pradesh. *The Indian Forester* 123 (10): 952–957.
- Sharma, R. K., Singh, H., & Dasgupta, N., 2011. A survey of habitat inventorization and habitat potentiality for sustenance of Gharial (*Gavialis gangeticus*) in Sone Gharial Sanctuary. *International Journal of Biodiversity and Conservation*. 3 (1): 19–23.

- Singh, H., Dasgupta, N., & Sharma, R. K., 2015. Status of birds in Son Gharial Sanctuary, Madhya Pradesh, India. *Science & Technology International Research Journal*. 1 (2): 50–56.
- Srivastava, R. K., 2013. Indian Skimmers at Rajghat in Son Gharial Sanctuary. Website URL: https://www.facebook.com/photo.php?fbid=661354687227236&set=a.1543 20651263978.41863.100000581332754&type. [Accessed on 10 March, 2015.]
- Srivastava, R. K., 2014a. Indian Skimmers Rynchops albicollis Swainson. Website URL: https://www.facebook.com/photo.php?fbid=815487531813950&set=gm.10151980

244387411&type. [Accessed on 10 March 2015.]

Srivastava, R. K., 2014b. Indian Skimmers at Rajghat in Son Gharial Sanctuary. Website URL: https://www.facebook.com/photo.php?fbid=790658674296836&set=a.1011 23753250335.2369.100000581332754&type. [Accessed on 10 March 2015.]

IUCN. 2015. The IUCN Red List of Threatened Species. Version 2015-3. Website URL: www.iucnredlist.org. [Accessed on 03 November 2015.]

Wetlands International. 2015. Waterbird population estimates. Website URL: wpe. wetlands.org. [Accessed 22 Nov 2015.].

Append	ix. Compiled avifauna of Son Wi	ildlife Sanctuary		Appendix. Compiled avifauna of Son Wildlife Sanctuary			
Common Name(s)	Scientific Name	Conservation	Observations	Common Name(s)	Scientific Name	Conservation	Observations
		Status	recorded			Status	recorded
		(BLI 2015)				(BLI 2015)	
Fulvous Whistling-duck	Dendrocygna bicolor	LC	А, В	Black-winged Kite	Elanus caeruleus	LC	А
Lesser Whistling-duck	Dendrocygna javanica	LC	E, F	Egyptian Vulture	Neophron percnopterus	EN	A, E
Bar-headed Goose	Anser indicus	LC	A, F	Red-headed Vulture	Sarcogyps calvus	CR	A
Greylag Goose	Anser anser	LC	F	White-rumped Vulture	Gyps bengalensis	CR	А
Common Merganser	Mergus merganser	LC	A, E	Indian Vulture	Gyps indicus	CR	F
Ruddy Shelduck	Tadorna ferruginea	LC	A, E, F	Pallas's Fish-eagle	Haliaeetus leucoryphus	VU	А
Red-crested Pochard	Netta rufina	LC	F	Black Kite	Milvus miarans	LC	F
Common Pochard	Avthva ferina	VÜ	F	White-eved Buzzard	Butastur teesa	LC	F
Gadwall	Mareca strepera	IC	A	Spotted Owlet	Athene brama	IC	A F
Indian Spot-billed Duck	Anas poecilorhyncha	10	AFF	Indian Grev Hornbill	Ocyceros birostris	IC	F F
Northern Pintail	Anas acuta	10	Δ	Common Hoopoe	Linung enons		A F
Common Teal	Anas crecca		Δ	Connersmith Barbet	Psilopoaon haemacenhalus		ΔE
Comb Duck	Sarkidiornis molanotos			Croop Boo optor	Morons orientalis		Λ, L Λ Ε
Cotton Tool	Nottapus coromandolianus		А, L, I Е	Directi Dee-calei	Merops philippinus		Α, Ι
Collon Tedi	Nellapus coromanaenanus		F A	Indian Dellar	Coracias bon ab alonsis		A
Indian Pearowi	Pavo cristatus		A			LC	A, F
Grey Francolin	Francolinus pondicerianus	LC	F	Common Kingfisher	Alcedo atthis	LC	A, F
Little Grebe	lachybaptus ruficollis	LC	F	Pied Kingfisher	Ceryle rudis	LC	A, F
Rock Pigeon	Columba livia	LC	A	White-throated	Halcyon smyrnensis	LC	A, E, F
Eurasian Collared Dove	Streptopelia decaocto	LC	A	Kingfisher			
Red Collared Dove	Streptopelia tranquebarica	LC	A	Common Kestrel	Falco tinnunculus	LC	F
Laughing Dove	Spilopelia senegalensis	LC	F	Plum-headed Parakeet	Psittacula cyanocephala	LC	F
Greater Coucal	Centropus sinensis	LC	A, F	Rose-ringed Parakeet	Psittacula krameri	LC	F
Common Moorhen	Gallinula chloropus	LC	F	Black Drongo	Dicrurus macrocercus	LC	A, F
Common Coot	Fulica atra	LC	A, E, F	Long-tailed Shrike	Lanius schach	LC	A
Sarus Crane	Antiaone antiaone	VU	A	Great Grev Shrike	Lanius excubitor	LC	А
Painted Stork	Mycteria leucocephala	NT	A	Rufous Treepie	Dendrocitta vaaabunda	IC	A
Asian Openhill	Anastomus oscitans	IC	AF	House Crow	Convus splendens	10	F
Woolly-necked Stork	Ciconia enisconus	VU	AF	Purple Sunhird	Cinnyris asiaticus	10	A F
Black-necked Stork	Enhippiorhynchus asiaticus	NT		House Sparrow	Passer domesticus		Δ
Indian Dond Horon	Ardoola aravii			Vollow throated Sparrow	Cymporis vanthocollis		
Cottle Egret	Ardeola grayii		A, L, I	Western Vellow Westeri	Motacilla flava		1
	Bubulcus ibis		A, F	VVestern venov vvagtan	Motacilla nava		A
Grey Heron	Ardea cinerea		A, E, F		Niolacilla cinerea	LC	A
Purple Heron	Araea purpurea	LC	E, F	vvnite vvagtali	Niotacilia alba	LC	F
Great Egret	Araea alba	LC	A	Crested Bunting	Nielophus lathami	LC	A
Intermediate Egret	Egretta intermedia	LC	E, F	Rufous-tailed Lark	Ammomanes phoenicura	LC	A
Little Egret	Egretta garzetta	LC	A, F	Indian Bush Lark	Mirafra erythroptera	LC	A
Black-headed Ibis	Threskiornis melanocephalus	NT	A, E, F	Grey-breasted Prinia	Prinia hodgsonii	LC	F
Eurasian Spoonbill	Platalea leucorodia	LC	A, E, F	Ashy Prinia	Prinia socialis	LC	F
Indian Black Ibis	Pseudibis papillosa	LC	A, E, F	Streak-throated Swallow	Petrochelidon fluvicola	LC	F
Little Cormorant	Microcarbo niger	LC	A, E, F	Red-rumped Swallow	Hirundo daurica	LC	A
Great Cormorant	Phalacrocorax carbo	LC	A, E	Wire-tailed Swallow	Hirundo smithii	LC	А
Indian Cormorant	Phalacrocorax fuscicollis	LC	A, F	Barn Swallow	Hirundo rustica	LC	А
Oriental Darter	Anhinaa melanoaaster	NT	A	Red-vented Bulbul	Pvcnonotus cafer	LC	A. E. F
Great Thick Knee	Fsacus recurvirostris	NT	AFF	Yellow-eved Babbler	Chrysomma sinense	IC	F
Black-winged Stilt	Himantopus himantopus	10	A F	Common Babbler	Arava caudata	10	A F
Little Ringed Plover	Charadrius dubius	10	Δ	lungle Babbler	Turdoides striata		F
Kontich Ployor	Charadrius alovandrinus		Λ	Acian Diod Starling	Cracupica contra		Λ
Pivor Lapwing	Vapollus duvausolii	NT		Prohminy Starling	Sturpia pagodarum		Λ
Vollow wattlad Lapwing	Vanellus malabaricus		Λ, Ι	Common Muna	Acridothoros tristis		
renow-watted Lapwing	Variellus malabancus		A	Common wynd Dawle Mena	Actidotheres tristis		А, Г
Red-wallied Lapwing	vanenus maicus		A, F	Ddfik iviyfið	Actionneres ginginianus		A, F
Bronze-winged Jacana	ivietopidius indicus	LC	t, F	Indian Robin	Saxicoloides fulicatus	LC	A
Common Sandpiper	Actitis hypoleucos	LC	A	Oriental Magpie Robin	Copsychus saularis	LC	A
Common Redshank	Iringa totanus	LC	A	Brown Rock Chat	Uenanthe fusca	LC	F
Small Pratincole	Glareola lactea	LC	A	Observations recorded -	A: Sharma & Sharma 1997 <sup>,</sup> B <sup>,</sup> F	Sharos 2008: C· N	air & Katdare
Indian Skimmer	Rynchops albicollis	VU	A, C, D, E, F	2013 D. Srivactava	2013 2014a h: E: Singh et al. 2	015: F: Our obse	vations
Brown-headed Gull	Chroicocephalus brun-	LC	E	2013, D. Shivastava	2010, 20110,0, E. Singir et di. 2	.013, 1. Our 003e	vations.
	nicephalus			CR – Critically Endangere	d; EN – Endangered; LC – Leas	st Concern; NT –	Vear Threat-
River Tern	Sterna aurantia	NT	A, E	ened: VU – Vulnera	able		
Black-bellied Tern	Sterna acuticauda	EN	A, E				
Osprey	Pandion haliaetus	LC	F				
- ~F· =/							