

Black-necked Stork in Jamnagar: Notes on breeding and behaviour

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Observations on Nesting and Breeding Behaviour of Black-necked Stork:

Total 15 Black-necked Storks (approx. figure gathered from the bird watchers) were recorded in the coastal area of Jamnagar in the year 2000. However,



nesting was recorded for the first time in 2001 and that was in Khijadiya. After that first nesting record, my friend (Manish Trivedi) and I started visiting Khijadiya and other wetland areas to locate nesting and roosting places of Black-necked Storks with the help from officials of Gujarat Forest Department, Jamnagar. In 2015, number of Black-necked Storks in the coastal area of Jamnagar had reached 35 individuals (approx figure derived from observations during the mid-winter census by volunteers and FD staff).

Breeding of Black-necked Stork has been extensively studied in Jamnagar by Patel (2002) and Bhatt (2006) and elsewhere in India by Sunder (2003) and Ishtiaq *et al.* (2004). Here, I present some of my observations on nesting and breeding behaviour that were made in Khijadiya Bird Sanctuary mainly in 2013.

It was observed by me (and my birdwatcher friends) that at Khijadiya Bird Sanctuary, Black-necked Stork usually built its nest at the height of 8-10 feet on the trees surrounded by freshwater and therefore human disturbance was unlikely. [However, it may be noted here that in Jodiya, a nest exists on a tree in the center of a farm for the past few years and it is very near to the house of the farmer. In 2010, in Vibhapar, a nest was built very near to the road and it was built at quite a lower height too, but these can be considered as exceptions.] Sticks and branches of *Prosopis juliflora*, *Suaeda nudiflora*, *Tamarix dioica* and *Avicenna marina* constituted the nesting material. The stork used different types of dry branches available from different trees (mentioned above), but also used some green branches alongwith grass and mud to fix the nest tightly. It was observed that in constructing its nest, initially the bird used big branches and then collected branches of varying size according to the requirement of the nest. It usually built a 35-40 cm thick platform as the nest and put branches of *Prosopis juliflora* within. After making a layer of *Prosopis juliflora*, the upper layer was usually made from green branches of *Vicinnia marina* to protect the eggs and chicks. I think, Black-necked Storks under my observation were very keen in selection of branches for the nest. They repaired the nest whenever necessary, even after the eggs have hatched.

Introduction: Khijadiya Bird Sanctuary (22° 30' 51" N, 70° 09' 14" E) is one of the small (6.05 sq.km) yet well-known bird sanctuaries of Gujarat state. It is situated 12 km north-east of Jamnagar and represents a unique wetland ecosystem complex consisting of two seasonal and well-separated freshwater ponds (conventionally called 'lakes'), marshes, mangroves, salt pans and scrub (Pandey and Teli 2005, Anonymous 2010). Apart from gaining the status of Wildlife (Bird) Sanctuary under the Wildlife (Protection) Act, 1972 in 1981-82, the Khijadiya wetlands are also designated as an Important Bird Area (IBA) from Gujarat (Islam and Rahmani 2004). Moreover, it is also one of the eight nationally important wetlands from Gujarat identified under National Wetland Conservation Programme, Ministry of Environment, Forests and Climate Change, New Delhi (Anonymous 2009). The sanctuary is important from the view-point of high bird species richness as about 200 bird species, including 117 water-bird species have been recorded here (Pandey and Teli 2005). Black-necked Stork (*Ephippiorhynchus asiaticus*) is one of the nine globally 'Near Threatened' water-bird species recorded in the wetlands of Khijadiya Bird Sanctuary (Anonymous 2010). This stork has a special place in the waterfowl profile of Khijadiya wetlands, as probably it is only here in the state that 2-3 pairs breed every year (Anonymous 2010). As Black-necked Stork is a 'Near Threatened' species (Birdlife International 2012) that breeds regularly in this Protected Area, efforts for its conservation should be given due importance. Based on this premise, as a part of conservation efforts, its nesting data and information on its breeding behaviour have been collected by me and my friend Manish Trivedi in cooperation with the Forest Department, Jamnagar. This data/information collection work has been carried out from the first nesting record of Black-necked Stork in 2001 in Khijadiya wetlands till recently.

...Black-necked Stork



Manish Trivedi

Mating took place on the nest once the nest construction was completed. As a part of courtship behavior, the male Black-necked Stork displayed by spreading its wings and producing calls. In 2013, mating was observed for the first time on 11th February. Subsequently, mating was seen several times in the month of February upto mid-March. In April 2013, a female was observed incubating her eggs in the nest. The chicks hatched in the late April – early May and approximately two months after hatching (in July), the young fledged and took flight. [My observations made in 2013 differed from those recorded in the previous studies conducted in India. In Uttar Pradesh and Bharatpur, breeding season was September – December during which, egg laying occurred from early September (Sunder (2003), Ishtiaq *et al.*(2004)). Grimmett *et al.* (1998) too have mentioned September–December time-frame as the breeding season of the Black-necked Stork in India. Bhatt (2006) recorded freshly fledged juveniles in December-end at Jodiya, indicating egg laying in September and hatching in October, which is in consonance with previous observations in U.P. and Bharatpur mentioned earlier. The factors responsible for difference in nesting time-frame between Khijadiya in 2013 and elsewhere need to be studied. It would be interesting to see if this is repeated in the future.]

It was observed that the male and female equally shared the responsibility of incubating eggs. The incubation period is about 25- 30 days as per my observation. It is observed that during the period of incubation, one of the parent birds would always be present on the nest. When the temperature is high, either male or female would fetch water in its beak and pour it on the eggs, presumably to regulate the temperature. Parent bird would also pour water on the chicks to protect them from higher temperatures. It is observed that Black-necked Storks catch fish, garden lizard, snakes, frogs and toads as food. It stores some food in its nest too. This is the most aggressive stork amongst all the stork species and does not nest in a colony. Other water-dependent birds like herons, egrets and

other storks do not nest near the nest of the Black-necked Stork. Even raptors refrain from intrusion!!

Conclusion: Increasing numbers of Black-necked Storks and their nests in Jamnagar costal area can be attributed to the dedicated efforts from the Forest Department as well as individual wild-lifers and NGOs from Jamnagar, since 2000. Looking to the number of Black-necked Storks (i.e., 35 individuals) in 2015 in Jamnagar costal area, one may rightly think that nesting of this largest stork of India could be occurring in other areas around Jamnagar too and demands continuation of committed efforts from all of us to explore more.

Nesting data on Black-necked Stork in Jamnagar

(Info. compiled from observations by the volunteers and FD staff jointly)

No.	Place of Nesting in Jamnagar District	Nesting Year	No. of Nests
1.	Dhunvav part, Khijadia Bird Sanctuary	2000	0
2.	Dhunvav part, Khijadia Bird Sanctuary	2001	1
3.	Dhunvav part, Khijadia Bird Sanctuary	2002	1
4.	Dhunvav part, Khijadia Bird Sanctuary	2003	1
5.	Dhunvav part, Khijadia Bird Sanctuary	2004	1
6.	Dhunvav part, Khijadia Bird Sanctuary	2005	1
7.	Dhunvav part, Khijadia Bird Sanctuary	2006	1
8.	Dhunvav part, Khijadia Bird Sanctuary Jambuda part, Khijadia Bird Sanctuary Jodiya coast (60 km from Jamnagar)	2007	3
9.	Dhunvav part, Khijadia Bird Sanctuary Jambuda part, Khijadia Bird Sanctuary Jodiya coast (60 km from Jamnagar)	2008	3
10.	Dhunvav part, Khijadia Bird Sanctuary Jambuda part, Khijadia Bird Sanctuary Jodiya coast (60 km from Jamnagar)	2009	3
11.	Vibhapar near Khijadia Bird Sanctuary Jambuda part, Khijadia Bird Sanctuary Jodiya coast (60 km from Jamnagar)	2010	4
12.	Dhunvav part, Khijadia Bird Sanctuary Jambuda part, Khijadia Bird Sanctuary Jodiya coast (60 km from Jamnagar)	2011	4
13.	Dhunvav part, Khijadia Bird Sanctuary Jambuda part, Khijadia Bird Sanctuary Jodiya coast (60 km from Jamnagar)	2012	4
14.	Dhunvav part, Khijadia Bird Sanctuary Jambuda part, Khijadia Bird Sanctuary Jodiya coast (60 km from Jamnagar)	2013	4
15.	Dhunvav part, Khijadia Bird Sanctuary Jambuda part, Khijadia Bird Sanctuary Jodiya coast (60 km from Jamnagar)	2014	3

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White-throated Kingfisher preying on chicks of Pheasant-tailed Jacana

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On 17 August 2015, I visited Ranjitsagar Dam (22° 23' N, 70° 06' E), near Jamnagar, with my father Jaypalsinh Jadeja. In this area, we saw a Pheasant-tailed Jacana (*Hydrophasianus chirurgus*) strolling on the white water-lilies (*Nymphaea lotus*)



have caught a fish, a frog or an insect, but we were shocked to see a chick of the jacana in its beak. I quickly turned on my camera and started photographing those moments. The kingfisher held the chick in its beak, twisted it and to our surprise, swallowed it whole. After a few minutes, the kingfisher again hovered on the lilies, suddenly dived in and caught the second chick. It then perched on a wire, held the chick in its beak, twisted it and finally swallowed it. The parent bird managed to hide its last chick in the lilies and could avert predation. The kingfisher failed to locate the chick and flew away after some time.

White-throated Kingfisher has been recorded hunting large crustaceans, insects, earthworms, rodents, snakes, fish and frogs. Predation of small birds such as an adult Oriental White Eye (*Zosterops palpebrosus*), chick of Red-wattled Lapwing (*Vanellus indicus*), fledgling sparrows and munias has been reported earlier (Ali & Ripley 2001). But it has not been reported hunting the chicks of Pheasant-tailed Jacana to my knowledge. I think it is a rare event that we saw and photographed.

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with three chicks. A White-throated Kingfisher (*Halcyon smyrnensis*) was flying above the lilies and after some time, it dived in and caught something in its beak. We thought it must