

Two new nesting colonies of Painted Stork *Mycteria leucocephala* from northern India

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Abstract

Although Painted Stork *Mycteria leucocephala*, a colonial nester, has a strong presence in India and Sri Lanka, it is listed as Near Threatened. Documentation and protection of its nesting colonies is thus crucial for its conservation. In northern India a number of its breeding colonies have been reported from the states of Delhi, Uttar Pradesh (particularly western Uttar Pradesh), Haryana, and Rajasthan. Among these, five colonies have already been described in the vicinity of River Yamuna, particularly from the *Braj* region comprising parts of western Uttar Pradesh, and southern Haryana, Mathura District, and nearby areas, particularly Keoladeo Ghana National Park (Bharatpur, Rajasthan). While there was a paucity of information about Painted Stork colonies from central and eastern parts of Uttar Pradesh, we discovered during the course of our recent surveys in this region, two hitherto unreported colonies, at village Kandhi in Kanpur Dehat District of central Uttar Pradesh, and at the tank of village Khanpur of Tahsil Chhata of Mathura District. The details of these are reported in this paper. While preparing this report we also learnt of some other nesting colonies, notably one in the midst of the crowded city of Lucknow. Therefore, we also provide a synopsis of all known Painted Stork colonies from this region and touch upon their conservation issues.

Introduction

Heronries are a concentration of breeding activity of colonial waterbirds in space and time, and due to this reason they are highly conspicuous, interesting from the viewpoint of ecology and evolution (Brown & Brown 2001; Urfi 2011), and in need of conservation attention (Subramanya 1996). Some heronries in northern India, in the states of Delhi, Uttar Pradesh, Haryana, and Rajasthan have been documented before. For instance, fairly detailed site descriptions are available for heronries in Delhi Zoo (Urfi 1997, 2011), Keoladeo Ghana National Park (Ali 1953; Ali & Vijayan 1983; Sankhala 1990), and Sultanpur National Park (Urfi *et al.* 2007). During surveys in the 1980s and early 1990s several other heronries (Table 1) were recorded from the Delhi region, particularly from Haryana (Urfi 1993).

Painted Stork *Mycteria leucocephala* is listed as Near Threatened by the IUCN (<http://www.iucnredlist.org/details/22697658/0>), though it is widely distributed across India. In this paper we report exclusively on its colonies from northern India. There have been no systematic surveys of its colonies from northern India, particularly from areas lying towards the east and central parts of Uttar Pradesh. However, during our recent field surveys in areas of both, western, and central Uttar Pradesh, we were pleasantly surprised to discover several Painted Stork colonies which had not previously been documented in literature. One colony was discovered at Kandhi in Kanpur Dehat District, the details of which are provided in this paper. Meanwhile, we also came across several new colonies in western Uttar Pradesh, particularly in the areas around Mathura. Some years ago a hitherto unreported colony had been described by our group (Dwevedi & Urfi 2012) from Chhata, close

to the National Highway-2 [henceforth NH-2]. Travelling by road towards Goverdhan, we discovered a nesting colony in the village tank of Khanpur. The details of this colony, together with a summary of all known Painted Stork colonies in Haryana, Rajasthan, and Uttar Pradesh are presented in Table 1, and their locations in Fig. 1.

New colonies

Kandhi

Kandhi village (26°21'N, 79°45'E), in Kanpur Dehat District of

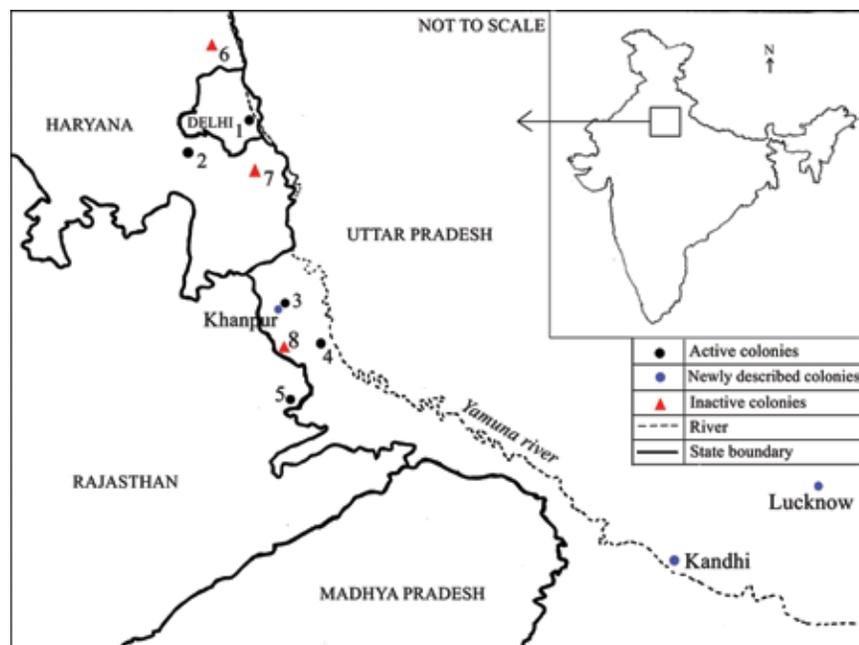


Fig 1. Location of various Painted Stork colonies of northern India. Key: 1. Delhi Zoo; 2. Sultanpur National Park; 3. Chhata; 4. Mathura Oil Refinery; 5. Keoladeo National Park; 6. Bijana; 7. Faridabad; 8. Govardhan. Newly described colonies are labelled in the map.

Table 1. A summary of Painted Stork *Mycteria leucocephala* colonies in northern India.

Site Name	Longevity ¹ (years)	Nesting Species ²	Colony size ³	No. of colonies ⁴	Nesting tree species	Source
Delhi Zoo	50	PS, LC, IC, LE, IE, CE, PH, BNH, BHI	250	4-5	<i>Prosopis juliflora</i>	Urfi 1997, 2011
Bijana	>50	PS, BHI, LC, IC	40	1	<i>Ficus sp.</i>	Urfi 1993
Sultanpur National Park	20	PS, LC, IC, LE, CE, PH, BNH, BHI, OBS	96	1-2	<i>P. juliflora</i> , <i>Acacia sp.</i>	Urfi et al. 2005; Urfi et al. 2007
Faridabad	NA	PS	NA	1	<i>Acacia sp.</i>	MacDonald 1962
Mathura Oil Refinery ⁵	20?	PS	NA	NA	<i>Acacia sp.</i>	Rahmani, pers. comm.
Chhaata	50+	PS, BNH, BHI OBS, GH	98	2	<i>P. juliflora</i> , <i>Acacia sp.</i>	Dwevedi & Urfi 2012
Khanpur	10	PS, GH, LC, IC, BHI	48	1	<i>P. juliflora</i>	Present study
Goverdhan	>130	PS	200	1	<i>Tamarindus indica</i> , <i>F. religiosa</i> , <i>Bombax malabaricum</i> , <i>Ulmus sp.</i>	Hume & Oates 1890
Kandhi	25+	PS	82	8	<i>F. bengalensis</i> , <i>Dalbergia sisoo</i> , <i>Ailanthus excels</i> , <i>Eucalyptus sp.</i>	Present study
Hazratgunj, Lucknow city	3-4 years (?)	PS	3-4 nests / tree	5-6	<i>Saraca asoca</i>	Awasthi, pers. comm.; Field visit 18 February 2014
Keoladeo Ghana National Park	100+	PS, LC, IC, GC, LE, IE, CE, PH, BNH, GH, BHI, OBS	400	36	<i>Accacia sp.</i>	Ali 1953, Ali & Vijayan 1983
Udupuria	NA	PS	70	8	<i>Acacia sp.</i> , <i>Tamarindus indica</i> , <i>F. bengalensis</i> , <i>F. religiosa</i> , <i>Azadirachta indica</i>	Nair, 2006

Notes:

1. Longevity, i.e., how long the colony has been in existence, is based on information available in literature or, in some cases, through anecdotal information. Numbers presented here may therefore not be entirely reliable.
2. The abbreviations used as follows. BHI: Black-headed Ibis *Threskiornis melanocephalus*; BNH: Black-crowned Night Heron *Nycticorax nycticorax*; CE: Cattle Egret *Bubulcus ibis*; GC: Great Cormorant *Phalacrocorax carbo*; GH: Grey Heron *Ardea cinerea*; IC: Indian Cormorant *P. fuscicollis*; IE: Intermediate Egret *Egretta intermedia*; LC: Little Cormorant *P. niger*; LE: Little Egret *E. garzetta*; OBS: Openbill Stork *Anastomus oscitans*; PH: Indian Pond Heron *Ardeola grayii*; PS: Painted Stork.
3. Colony size refers to number of nests of Painted Stork recorded from the site (if information available for more than one year then maximum number is used).
4. One continuous substrate (a single tree or a clump of trees) is considered as a colony for the present purpose.
5. We learnt about the existence of this colony from the Department of Wildlife & Ornithology, Aligarh Muslim University, which also prepared a report (Rahmani, pers. comm.) on this colony. We were unable to access the paper. Since we did not have permission to enter the Mathura Oil Refinery compound the information presented here is based on Google Earth imagery.

Uttar Pradesh state, is located beside NH-2, which connects Kanpur to Etawah. It is quite close to River Yamuna, which flows through the district, and is approximately 72 kms from Kanpur city. The site was visited on 02 March 2013 (by NKT and others) and details of Painted Stork nests, which were placed on eight separate trees growing close together beside the highway, were recorded. The height of the trees was estimated directly in the field by the aid of a hand-held laser distance meter (Leica Disto D8). Observations on the birds were made using binoculars. A total of 82 nests of Painted Stork, with 92 nestlings and 35 adults, were recorded at the site. As the colony was visited late in the breeding season, the number of adults recorded was much less because most of them would have left the colony by that time. Since only Painted Stork nestlings were observed it appears that the colony is mono-specific. The largest nesting congregation on a single tree comprised 39 nests placed on a 9.5 m tall *Ficus bengalensis* tree. Close by four other trees of *Dalbergia sisoo*, had 17, 10, 4, and 4 nests. Tree heights estimated to be around 7.5 m, 6.2 m, 10.2 m, and 7.6 m, respectively. There were nests on *Eucalyptus* species trees also. One very tall tree (12.5 m) had five nests while another, a shorter one (6.8 m) which had a portion of its trunk broken, had only one nest.

All the nestlings recorded in the colonies were in an advanced stage of growth and a rough calculation based on the Painted

Stork nestling age guide in Urfi (2011) suggested that they were 61-90 days of age [108]. Therefore one can conclude that nesting activity at this site must have commenced in August-September, i.e., towards the end of the monsoon, assuming an incubation period of 30 days.

We learnt that Kandhi colony has been in existence for at least 15 years. Inquiries from people in the vicinity also revealed that some wetlands located within the range of 0.5-15 km are significant from the viewpoint of foraging for the birds nesting



108. Painted Stork nesting on a tree at Kandhi in Kanpur Dehat.



109. Young Painted storks feeding in a marsh close to Kandhi colony.

here. A quick visit to some nearby marshes and ponds did yield sightings of foraging sub-adult Painted Storks [109]. The presence of River Yamuna and the associated complex of wetlands, in the vicinity of Kandhi, could be a crucial factor for the selection of this site. It is well-known that proximity to foraging grounds is an important factor in colony site selection.

Khanpur

The discovery of Khanpur colony in Mathura District (27°42'N, 77°29'E) was a pleasant surprise. It is located adjacent to village Khanpur which is c. 3 km away from the busy NH-2 (also known as Mathura Road), and 17 km west of River Yamuna. Interestingly this small breeding colony is located about 4 km or less from the Chhata herony (Dwevedi & Urfi 2012). The village has a small pond which was estimated to be 41085.04 m², using imagery available on Google Earth (Google Earth Pro 2013, 23/09/2011). There is an island in the middle, estimated to be 641.39 m², with extremely low *Prosopis juliflora* trees (a few feet tall) on which Painted Storks nested [110-111]. This indicates that this might be a young colony. This observation also suggests that if a nesting tree island is properly surrounded by water from all sides then nests can also be built on low level substrates. This is similar to the situation at Man Marodi Island in the Gulf of Kutch where Painted Storks build nests on very short vegetation, since the whole sandstone island prevents ground predators from gaining access to the nests (Urfi 2003).

When we first visited Khanpur on 01 September 2013, after BBS received a tip from local sources, Painted Storks had just commenced breeding at the site. A total of 25 nests and 48 individuals were counted. Most of the nests (22) were located on trees on the island but a few nests (3) were also located on slightly taller trees on the bank adjacent to the boundary of a house. Nests of some other species besides Painted Stork included those of Grey Heron *Ardea cinerea*, Great Egret *Ardea*

alba, and Little Cormorant *Microcarbo niger*, on peripheral trees. While this is a smaller colony with only 25 Painted Stork nests, the nearby Chhata, which is located close to NH-2, is considerably larger (81 nests). Throughout the nesting season of Painted Stork, lasting from August 2013 to January 2014, field visits were made on a weekly basis.

Other colonies

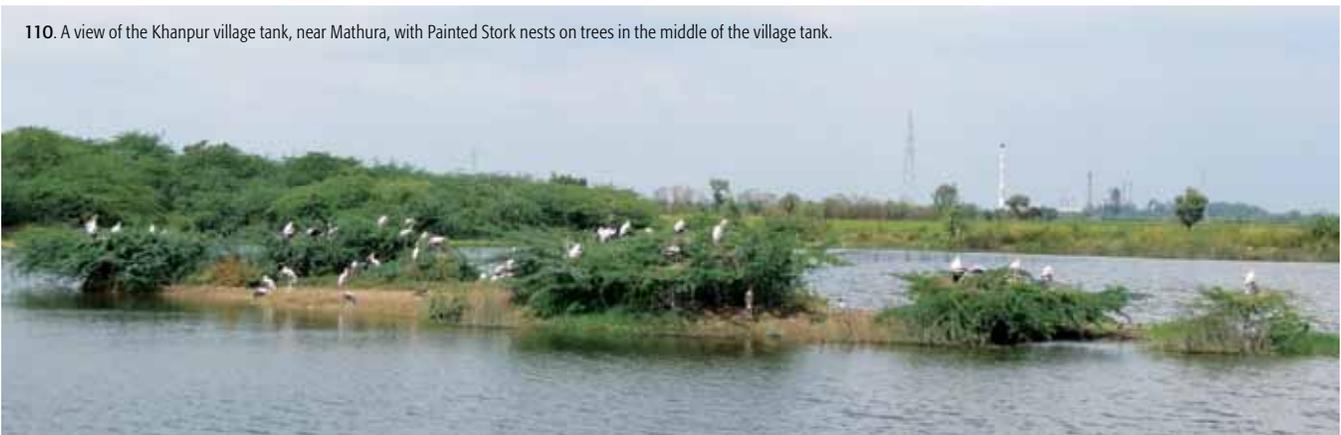
We learnt about the existence of a small Painted Stork colony in the middle of Lucknow city, in Hazratgunj, a short distance away from the local zoo (Amitabh Avasthi, *pers comm.*). When, during February 2014 BBS travelled to the site, Painted Stork nests on several Ashoka *Saraca asoca* trees were observed. At this time of the year, the nesting had been nearly completed with most nestlings having fledged from the nests. According to information gathered from local interviews there could have been approximately 15 nests on four to five different trees. The colony does not seem to be very old and probably came into existence about three or four years ago. We also learnt from some locals that the colony was perceived to have some nuisance value in that some nearby residents resented the foul, fishy smells emanating from the trees and the dropping of fish from the nests.

General discussion and further action

A summary of all recorded Painted Stork colonies, in Table 1, provides interesting insights about their longevity and other features. These birds used a variety of tree species for their nesting and while some colonies are located on islands in marshes or village tanks, others are located on tall trees. Long-term research focussing on colony formation and site selection will be useful for devising conservation strategies.

Apparently, many of these colonies seem to face threats. During a visit on 18 February 2014 NKT and BBS discovered that one of the trees at Kandhi, which had several nests, had been cut down to make way for road widening work. Other colonies in the region are also threatened by way of deterioration of wetland habitat, e.g., the tank of Chhata (known as Surajkund Tank locally) is heavily polluted with sewage discharge (and plastic bags) from nearby homes piled up on the bank. Much of the pond is also overgrown with water hyacinth *Eichhornia crassipes*. Khanpur on the other hand, being located away from urban centres and the highway, and with a smaller human population living alongside, seems to be free of such problems, atleast for now. It will be worthwhile monitoring these colonies to keep a track of changes taking place at the sites and in the areas in their vicinity. Local naturalists and birdwatchers can help in generating awareness about the conservation significance of these colonies and ensure their protection.

110. A view of the Khanpur village tank, near Mathura, with Painted Stork nests on trees in the middle of the village tank.





111. A close up view of the Khanpur village heronry.

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References

- Ali, S., 1953. The Keoladeo Ghana of Bharatpur (Rajasthan). *Journal of the Bombay Natural History Society* 51 (3): 531–536.
- Ali, S., & Vijayan, V. S., 1983. *Keoladeo National Park Ecology Project. First interim report 1982-83*. Bombay: Bombay Natural History Society.
- Brown, C. R., & Brown, M. B., 2001. Avian coloniality: progress and problems. *Current Ornithology* 16: 1–82.
- Dwevedi, R., & Urfi, A. J., 2012. Discovery of a large heronry at Chhata, near Mathura, in western Uttar Pradesh. *Journal of the Bombay Natural History Society* 108 (3): 231–232 (2011).
- Hume, A. O., 1890. *The nests and eggs of Indian birds*. 2nd ed. London: R.H. Porter. Vol. III of 3 vols. Pp. i–ix, 1–461.
- MacDonald, M., & Loke, C., 1962. *Birds in the sun. Beautiful birds of India*. 1st ed. Bombay: D. B. Taraporevala Sons & Co. Pvt. Ltd. Pp. 1–128.
- Nair, A. K., 2006. Udupia—a stork paradise. *Hornbill* 2006 (July–September): 32–33.
- Sankhala, K., 1990. *Gardens of Eden; the waterbird sanctuary of Bharatpur*. New Delhi: Vikas Publishing House Private Limited.
- Subramanya, S., 1996. Distribution, status and conservation of Indian heronries. *Journal of the Bombay Natural History Society* 93 (3): 459–486.
- Urfi, A. J., 1993. Heronries in the Delhi region of India. *Oriental Bird Club Bulletin* 17: 19–21.
- Urfi, A. J., 1997. The significance of Delhi Zoo for wild waterbirds, with special reference to the Painted Stork *Mycteria leucocephala*. *Forktail* 12 (August): 87–97.
- Urfi, A. J., 2003. Record of a nesting colony of Painted Stork *Mycteria leucocephala* at Man-Marodi Island in the Gulf of Kutch. *Journal of the Bombay Natural History Society* 100 (1): 109–110.
- Urfi, A. J., 2011. *The Painted Stork: Ecology and conservation*. New York & Dordrecht, Springer.
- Urfi, A. J., Meganathan, T., Kalam, A., & Mahendiran, M., 2005. Nesting of Asian Openbill and other birds at Sultanpur National Park (IBA). *Mistnet* 6 (3): 10–11
- Urfi, A. J., Meganathan, T., & Kalam, A., 2007. Nesting ecology of the Painted Stork *Mycteria leucocephala* at Sultanpur National Park, Haryana, India. *Forktail* 23 (August): 150–153.

Some noteworthy records from the Lohit Valley, eastern Arunachal Pradesh, India

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The Lohit River originates in eastern Tibet where it is called Zayul Chu. It enters India a little north of the settlement of Kaho (28°19'N, 97°00'E; c. 1327m asl). Flowing through the Anjaw and Lohit districts of Arunachal Pradesh, running through Mishmi Hills, it enters the flood plains of Assam where it meets the combined waters of the Dibang and Siang rivers to form the river Brahmaputra. In Arunachal Pradesh it is a turbulent river, rushing through narrow, steep, and wooded valleys. Along its course the vegetation ranges from coniferous temperate on the hill tops to broadleaved evergreen tropical on the lower elevations. The fragile ecosystem that the river supports is threatened by the receding glaciers at its headwaters in eastern Tibet, a phenomenon recorded over last 25 years, and six hydro-electric projects along its course proposed by the Indian government (Pelto 2013). The area is poorly sampled for its birdlife and many bird species that occur in the nearby

areas of eastern Tibet and Myanmar may also be present here (Rasmussen & Anderton 2012).

Field surveys were conducted from 05 to 12 May 2013 at the following locations: Chowkham (27°48'N, 96°02'E; c. 167m asl), Medo (27°46'N, 96°14'E; c. 252m asl), Khupa (28°03'N, 96°29'E; c. 669m asl), Walong (28°07'N, 97°01'E; c. 1165m asl), Namiti (28°11'N, 97°01'E; c. 1269m asl), and Musai (28°15'N, 97°01'E; c. 1272m asl). The areas around Chowkham, Medo, Wakro (27°46'N, 96°21'E, c. 477m asl) and upto Parshuramkund (27°52'N, 96°21'E; c. 333m asl) in the foothills of Arunachal Pradesh is low-lying. The forest, wherever it is still to be found, is degraded with many areas turned into wasteland. The areas along the Lohit river from Parshuramkund to Khupa and Walong are mostly subtropical broadleaved and densely forested with coniferous species dominating the higher tops. There are many patches, mostly around human habitations, that are degraded