

Recent records, review of wintering distribution, habitat choice and associations of Black Stork *Ciconia nigra* in India and Sri Lanka

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Abstract

Black Stork *Ciconia nigra* is an uncommon, wary, winter and passage migrant to India. The wintering population of Black Storks has reduced alarmingly. For Black storks that visit South Asia, India appears to be a major wintering ground. Until 1983, the wintering distribution of these storks is reported to be mainly from Northern India up to Sholapur district, in the Deccan. Our observations indicate that most wintering Black Storks in India are adults and only a few are juveniles. The earliest sightings are in December and the latest are in mid-April.

Our recent surveys and reported observations on the habitat choice of Black Storks in India show that they are found on natural lakes, artificial irrigation reservoirs, on river banks in agricultural or forest country, water bodies in forests, scrub, arid and semi-desert areas as well as on the sea coast.

Key words: Black Stork, *Ciconia nigra*, observations, wintering distribution, habitat choice, India

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INTRODUCTION

Black Stork *Ciconia nigra* is an uncommon, wary winter and passage migrant to India. The geographic distribution of this species is mostly in Poland, Baltic countries, Western Europe, east through Russia and North China. The species also inhabits Germany, France, Scandinavia, Burgundy and Iberia. Black Storks are monotypic and two discrete populations are recognized: one population breeds in Central Asia and winters in Southwestern and Southern Asia and the other breeds in Eastern Russia and winters in Eastern China and Korea. Both populations are widely scattered in winter along streams and forest ponds, etc., and are very inadequately covered by the Asian Waterfowl Census (AWC) 1994. The wintering distribution of these storks in the Indian subcontinent is reported mainly to Northern India, from Punjab, Gangetic plains to Eastern Assam, south through Rajasthan, Kutch, Northern Gujarat and up to 18° N latitude, i.e. Solapur district in Maharashtra in the Deccan (Ali and Ripley 1968, Elphick 1995) After reviewing the literature, we observed that although there are no systematic studies on the distribution pattern and movements of Black Storks in India, there are several scattered observations throughout the country. This paper deals with the review of published records and recent unpublished records of wintering Black Storks in various states of India, along with observations on their habitat choice and associations. This also includes our own observations carried out on the wintering population of these storks in Pune and Kolhapur districts in the states of Maharashtra from December 1998 until April 2004.

RESULTS

Previous records of wintering distribution (1965 onwards)

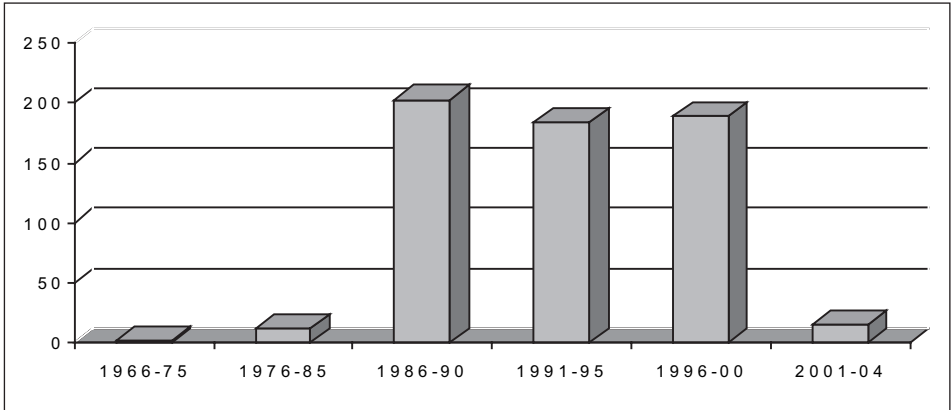
A review of the literature (Table 1, Figure 1) shows that Black Storks were recorded in various states of India, particularly in

Northern India in 1986 and again in 1989 at Pong Dam, Himachal Pradesh (Pandey 1989a, b); at various places in Rajasthan (Sharma 1981, Vyas 1992, Sharma & Raza 1994, Andheria 2000, Changani 2002); in Gujarat (Himmatsinghji 1985, Bhaskaran 1995); and in Madhya Pradesh (Newton et al 1986, Misra 1994, Saxena 1998, Shafiq 2002). There are few records in the north-eastern part of India, particularly in Assam (Barman and Talukdar 1995), Guwahati, Meghalaya (Choudhary 2003), Arunachal Pradesh (Datta et al 1998) and West Bengal (Sivakumar & Vibhu Prakash 2004). Black Storks have been recorded in various parts of Maharashtra (Mahabal & Lamba 1987, Sawji 1990, Prasad 1997, Kurhade 2003, Kasambe-in press) as well as in Andhra Pradesh (Manakadan 1987, Anand Mohan 2000) and particularly in Eastern Godavari district during December-January 1987, 1989, 1992, and 1995 (Rao et al 2000). There is a single sighting of this stork at Nagarhole in Karnataka (Andheria 1999). There are also records in the southernmost part of India, particularly Tamil Nadu (Perennou and Santharam 1990, Relton 1998) and in Kerala (Narayan Kurup 1989, Praveen and Menon 1994, Prasad 1997, Jayson 2000). There is a report of Black Storks in the Deccan (Pande et al 2003). The record of Black Stork from Thrissur at 100.20' north latitude seems to be the southernmost for India. Ali and Ripley (1968) have stated that these storks have not been previously recorded in South India, although a couple were seen decades ago in Sri Lanka (Henry 1971).

Table 1 indicates that, in general, sightings of these storks are often solitary, in couples and a few in small, scattered parties of from three to ten birds. Once, a flock of 25 Black Storks was recorded at Ranthambore in Rajasthan in January 2000 (Andheria 2000).

India is a major wintering ground for Black Storks in South Asia. 47 %, 31% and 81% of all migrant Black Storks to the region

Figure 1: Published records of *Ciconia nigra* in India. No. of Black Storks on the Y axis and year of record on the X axis.



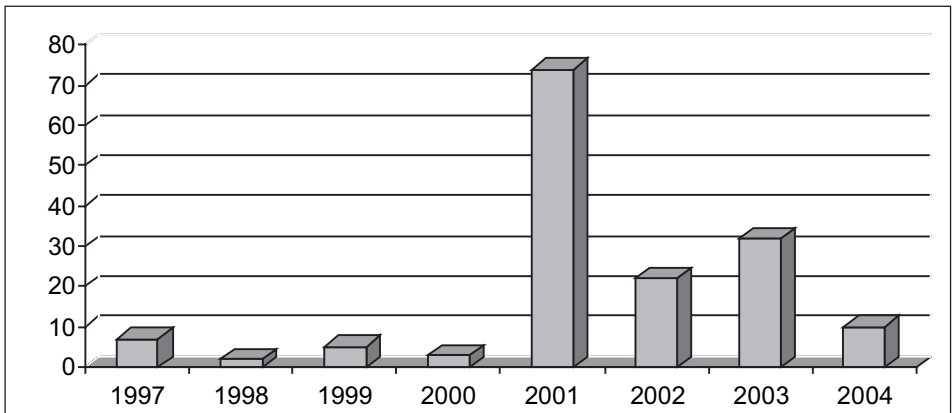
have been recorded in India in 1994, 1995, and 1996 respectively. Furthermore, from published records, including AWC records, the number of storks was calculated for the first 10 years and the remaining were illustrated in 5 year increments in Figure 1. This indicates that the number of storks was at a maximum during 1986-1990 but then they decreased marginally during 1991-1995 and 1996-2000. Map 1 also shows wintering distribution of Black Storks in many states of India; however, there are no authentic records from the states of

Jammu and Kashmir, Punjab, Haryana, Bihar and Orissa.

New records of wintering distribution

Table 2 and Map 1 show a compilation of our observations, as well as collected information on Black Storks from personal communication from bird watchers and members of the ELA Foundation, all supported by photographs, from various districts of Gujarat, Madhya Pradesh, Maharashtra and Karnataka, during December 1997 to February 2004. Here, once again the

Figure 2: Recent unpublished observations of *Ciconia nigra*. No. of Black Storks on Y axis and Year of record on X axis.



storks were observed solitarily, in couples and a very few in small loose parties of three to 13 birds. Two flocks of 19 and 31 birds were noted at two different water reservoirs at Amravati in November 2001 (Kasambe). The number of storks observed from 1997 until 2004 is plotted year wise in Fig. 2. This indicates that their numbers were highest in 2001, followed by 2003 and 2002, and during the remaining years they were seen in smaller numbers. It can be seen from Tables 1 and 2 that most of the wintering Black Storks in India are adults, with red beaks and scarlet feet, and very few are juveniles with black beaks. The adult to juvenile ratio of Black Storks from published and unpublished records (Tables 1 and 2) is estimated to be 24.6: 1 (n=282). However, the age of ten Black Storks was not mentioned in the records. Furthermore, it can be seen that the earliest sightings are in October, most occur in November, and the latest in March. In our observations at Pune, Nashik, Amravati districts (Maharashtra) and Dharwad district (Karnataka), the habitats chosen by Black Storks seem to be stopover sites for one week to a maximum of four weeks. Hence, these places do not appear to be their final wintering grounds and the birds appear here in passage.

Further, Table 2 and Map 1 show that Black Storks regularly wintered at Veer Dam, Naygaon, and Saswad areas near Pune city from December 1998 to January 2003. They did not visit in the winters of 2003 and 2004, probably because the water bodies of their choice had dried because of a severe prevailing drought. Storks were also regular visitors in the vicinity of Amravati town from December 2000 until February 2004, whereas, at Dharwad, Karnataka, they were seen in alternate years. At all these places, although wintering Black Storks are seen regularly, they come in very small numbers.

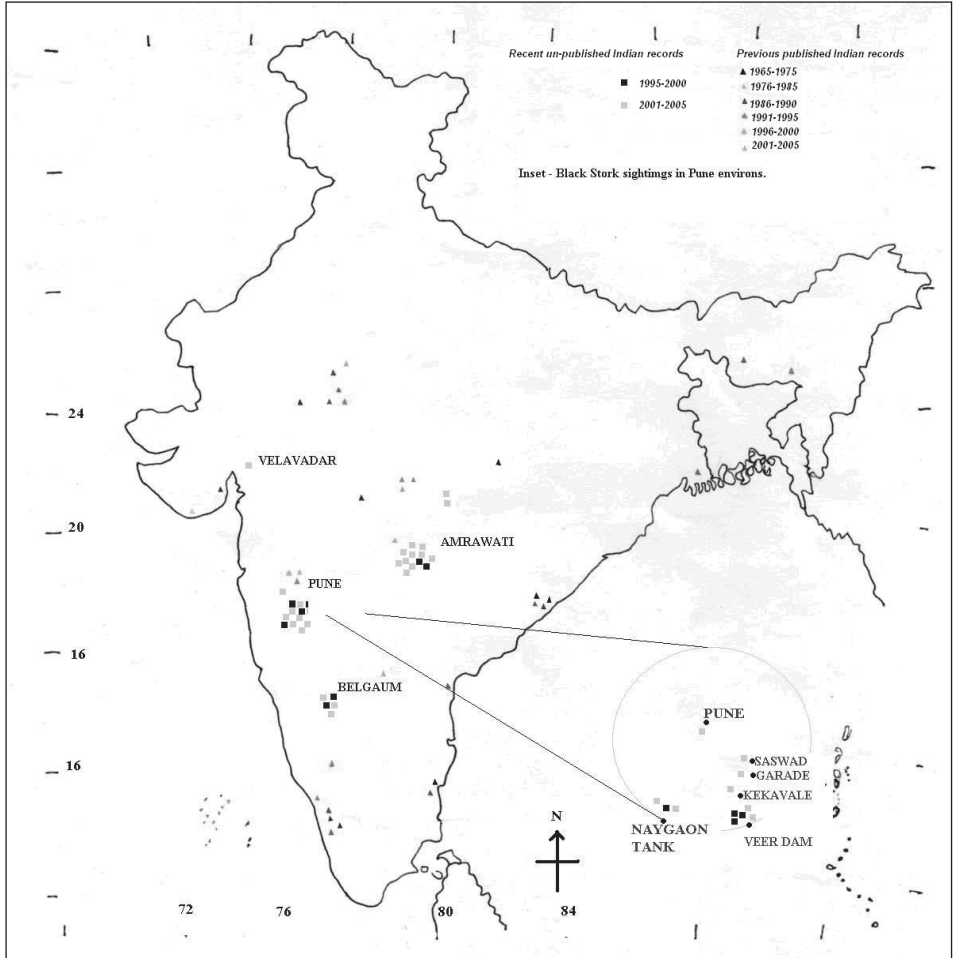
From Map 1 it can be seen that Pong Dam in Himachal Pradesh, Kanha National Park in

Madhya Pradesh, East Godavari in Andhra Pradesh, Veer Dam near Pune, and water reservoirs near Amravati in Maharashtra seem to be some of the favoured sites for wintering Black Storks in peninsular India. Further, it has been mentioned that during the AWC 1987-91, the most important sites in India were identified at Kaziranaga National Park, Assam and the Ramganga Barrage in Corbett National Park, Uttar Pradesh.

Habitat choice

Black Storks are water birds and are found wading in marshes at the edges of water bodies or in shallow waters. New records and older reported observations on the habitat choice of Black Storks in India show that they are found mostly in water reservoirs in scrub areas followed by river banks, forest ponds and water reservoirs in agricultural cropland and a single record on the sea coast. These storks are reported from just below the mean sea level to 500 m altitude. Our observations at Dharwad, Karnataka have revealed that some of the habitats are used by storks both for feeding and roosting, particularly near water bodies with large surrounding trees or reed beds, where the storks find safe roosts at night, while other areas like islands in rivers and reservoirs are used exclusively for roosting at noon and night (Pande, S.). On several occasions, the authors have noted storks soaring on rising thermals in the late afternoon. In India, Black Storks are seen to feed on aquatic animals, particularly frogs, fish, crustaceans, water insects and occasionally young or disabled birds, rodents, etc. (Ali and Ripley 1968). However, on two occasions, when water bodies were smaller than usual because of drought, the authors have clearly seen storks feeding exclusively on fish. We observed from published and unpublished records (Table 1 and 2) that Black Storks prefer water bodies in scrub areas (WS=58.2%), followed by water bodies in forests (WF=19.5%),

Figure 3: Map showing previous published and recent unpublished Indian records of Black Stork.



rivers (R=13.7%), water bodies in agricultural areas (WA=8.2%), and the sea coast (SC=0.4%) (n=292).

Associations with other animals

With winter migrant birds

In India, wintering Black Storks have been seen associating with other winter migrants including Demoiselle Cranes *Grus virgo*, Common Cranes *Grus grus*, Comb Ducks *Sarkidiornis melanotus*, Ruddy Shelducks *Tadorna ferruginea*, Barheaded Geese *Anser indicus*, European White Storks

Ciconia ciconia, a few medium and small sized waders (Sandpipers, Shanks, Stints, Godwits), Ospreys *Pandion haliaetus* and Western Marsh Harriers *Circus aeruginosus* (Table 1 and 2).

With local birds

They also associate with resident and local migrants such as Painted Stork *Mycteria leucocephala*, Asian Open-bill Stork *Anastomus oscitans*, White-necked Stork *Ciconia episcopus*, Black-necked Stork *Ephippiorhynchus asiaticus*, Lesser Adjutant

Table 1: Previous published records of Black Stork *Ciconia nigra* during winter in India

Date	No.	Age	Locality	Lat/Long.	Hb.	Act..	Assoc.	Ob.P	Reference
J 1966	1	A	Khamgao, Pune, MS	18.30N74.10E	WA	F		1D	Mahabal & Lamba (1987)
J 1978	1	A	Sariska, Rajasthan	27.05N79.17E	WF			1D	Sharma (1981)
22N 1982	1		Kanha NP, MP	23N	WF	F		2.5M	Newton et. al.(1986)
22J 1983	2		Kanha NP, MP	23N	WF	F		2.5M	Newton, et. al.(1986)
25N 1983	2	A,J	Kutch, Gujrath	24.08N70.16E	WS	F		1D	Himmatsinghji (1985)
7N 1985	6	A	Rollapadu, AP	15.52N78.18E	R	F		2M	Manakadan (1987)
23F 1986	6	A	Pong Dam, HP	31.18-32.07N	R	F		1.5M	Pandey (1989)
7J 1987	1	A	Bharatpuzha, Kerla		R	F	BK, Waders	1D	Narayan Kurup (1989)
24F 1987	1	A	Periyar WLS, Kerla	10N76E	R	F	WNS	1D	Narayan Kurup(1989)
J 1987	2	A	E.Godavari, AP	16N	R	F		1D	Rao et.al.(2000)
1988-92	4	A	Kota, SE Rajasthan	25.19N75.52E	WS	F		4Y	Vyas(1992)
30J 1988	1	J	Pondicherry, TN	12N	WS	F		2M	Perennou (1990)
21F 1989	1	A	Pong Dam, HP	31.18-32.07N	R	F		1D	Pandey(1989)
D 1989	4	A	E.Godawari, AP	16N	R	F		1D	Rao et.al.(2000)
1990	5	A	Buldhana, MS	20.32N76.14E	WS	F		1D	Sawji(1990)
1991-94	1	A	Sri Venk. WLS, AP	13.38N79.11E	WF	F			Anand Mohan (2000)
D 1992	3	A	E.Godawari, AP	16N	WA	F		1D	Rao et.al.(2000)
O1993-94	6		Walayar, Kerala	10.50N76.51E	WA	F		4M	Praveen & Menon (1994)
J 1994	1	A	Rajasthan		WA	F	WS, WNS, PS, OBS	1D	Sharma & Raza (1994)
J 1994	4	A	Trichur, TN	10.59N79.02E	WA	F	WS	1D	Relton (1998)
6M 1994	10	A	Bhopal, MP	22.57N77.43E	WF	F	RT, SB, WI, GC, WNS	1D	Misra (1994)
16D 1994	2	A	Deepor Beel, Assam	26.03N90.36E	WF	F	GAS	1D	Barman & Talukdar (1995)
23D 1994	11	A	Sasan Gir, Gujarat	21N71E	WS	F		1D	Baskaran (1995)
1994-2000	1	A	Kumbhalgarh WLS, Raj.		WF	F			Changani (2002)
J 1995	6	A	E.Godawari, AP	16N	R	F		1D	Rao et.al.(2000)
1996	1		Pakhui WL, Ar.Pr.	26.53N92.07E	R	F		1D	Datt et.al.(1998)
6F 1997	2	A	Amravatina-gar, Kerala		WA	F	WNS, PS	1D	Prasad (1997)
F 1997	5	A	Pune, MS	18N	WA	F	WS	1D	Prasad(1997)
J 1998	1	A	Morena, MP	25.15N76.22E	R	F		1D	Saxena(1998)
14J '99	1	A	Nagarhole, K	11.45N76.05E	WF	F	LAS	1D	Andheria(1999)
2000-01	1	A	Buxa Tiger Reserve, WB	26N89E	WF	F		1D	Sivakumar et al (2004)
24J '99	1	A	Guwahati, Meghalaya	25.58N91.45E	WF	F	Ducks	1D	Choudhary (2003)

J 2000	25	A	Ranthambor, Rajasthan	25.N76E	WF	F	WNS, PS	1D	Andheria (2000)
4J 2000	1	J	Thrissur, Kerala	10.20N75.55E	SC	F	WNS, PS, OBS, WS	1D	Jayson (2000)
J 2001	1	A	Kanha NP, MP	22.07N80.30E	WF	F		1D	Shafiq (2002)
25F 2001	3	A	Amravati, MS	20.56N	WF	F	PS, Ducks	1D	Kasambe (2003), in Press
16J 2003	11	A	Ahmadnagar, MS	19.05N	WS	F	WS, WNS, PS, SB	2W	Kurhade (2003)
1961	2	A	Ceylon (SriLanka)		WF	F			Henry (1971)

Stork *Leptoptilos javanicus*, Greater Adjutant Stork *Leptoptilos dubius*, Eurasian Spoonbill *Platalea leucorodia*, Brahminy Kite *Haliastur indus*, River Tern *Sterna aurantia*, Great Cormorant *Phalacrocorax carbo*, Greater Flamingo *Phoenicopterus ruber*, Lesser Whistling Duck *Dendrocygna javanica* and White Ibis *Threskiornis melanocephalus*

In general we noticed that association with White-necked Stork, Painted Stork, White Stork, Bar-headed Goose and Demoiselle Crane seems to be commonest among wintering Black Storks in India. Ali and Ripley (1968) have also reported repeated association with White-necked Stork.

With mammals

Black Storks were seen with mammals such as Spotted Deer *Axis axis* (Family: Cervidae), Gaur *Bos gaurus* (Family: Bovidae) at Pench National Park, Madhya Pradesh in February 2002 (Pande, S.) and January 2003 (Sant, N.R. unpublished), and domestic cattle in several places. It is quite likely that the Black Storks are observed near mammals because of flushing of the potential prey such as grasshoppers and other insects. They are seen to avoid man. We did not observe any inter-specific aggression between Black Storks and other species of local and migratory birds or mammals. However, dogs accompanying grazing domestic cattle often disturbed the Black Storks, which were then forced to leave the place.

Threats

The authors have witnessed two incidences of attempted hunting of adult Black Storks in our region. One stork was rescued near Akola (Maharashtra), and was treated but died (Joshi, Deepak, personal communication). On the other occasion, a Black Stork was found in a field near Nashik, unable to fly. An injury to one leg was noted. The stork was treated for two weeks and released successfully (Ranade, S, personal communication). We also came across two incidences of attempted hunting of White Storks *Ciconia ciconia*. A review of the literature shows five incidences of hunting, when five White Storks *Ciconia ciconia* died. The other rescued, injured stork went to a zoo.

Increasing human interference and encroachment on wetlands, excessive fishing activities, hunting, droughts, water pollution, and molestation are the prime risks faced by Black Storks on their wintering grounds in India, as elsewhere. Reduced habitat safety and scarce food availability will have a negative effect on the wintering population of Black Storks in our region. The effect of severe prevailing drought was recently demonstrated (2003-2004), when no Black Stork was seen on water bodies near Pune, since they had totally dried up.

Conservation

The conservation status of Black Stork is noted in Appendix II of CITES (Convention

Table 2: Recent unpublished records of wintering Black Stork *Ciconia nigra* in India.

Date	No.	Age	Locality	Lat/Long.	Hb.	Act..	Assoc.	Ob.P	Reference
F 1997	5	A	Dharwad, Karnataka	15.27N75.05E	WS	FR	LAS, CD	30D	Sant N.R. Sant N.R.
10D1997	2	J	Veer, Pune, MS	17-18N	R	F	BD, Wad	35D	Pande S.A.
DJ 1998/99	2	J	Veer, Pune, MS	17-18N	R	F	Du, Wad, GF	30D	Pande S.A.
DJ 1999/00	2	J	Veer, Pune, MS	17-18N	R	F	BHG	40D	Pande S.A.
F 1999	2	A	Dharwad, Karnataka	15N75E	WS	FR	LAS, CD	1W	Sant N.R.
DJ 1999/00	2	A	Naygaon,Pune,MS	17-18N	WS	R	DC,Du	20D	Pande S.A.
24D 2000	1	A	Amravati, MS	20.56N	WS	F	BHG, PS, WNS	1D	Kasambe R
J 2001	1	A	Nasik, MS	20N73E	R	Hurt		10D	Ranade S
J 2001	2	A	Veer, Pune, MS	17-18N	R	F	DC,Du	1D	Pande S.A.
F 2001	3	A	Dharwad, Karnataka	15N75E	WS	FR	LAS,CD	1W	Sant N.R.
11N 2001	13	A	Amravati, MS	20.56N	WS	F	PS,BHG	1D	Kasambe R
25N 2001	31	A	Amravati, MS	20.56N	WS	F	PS, GC	1D	Kasambe R
25N 2001	17,2	A,J	Amravati, MS	20.56N	WS	F	BHG,SB	1D	Kasambe R
25D 2001	5	A	Amravati, MS	20.56N	WS	F	PS,OBS, GC	1D	Kasambe R
J 2002	4	A	Naygaon,Pune, MS	17-18N	WS	F	RT,O	1D	Pande S.A.
J 2002	6	A	Garade, Saswad, Pune, MS	17-18N	WS	F	SB, Wad, BNS	2W	Pawashe A.P.
JF 2002	2	A	Ketkavale, Pune, MS	17-18N	WS	F	WNS, Ducks	2W	Pawashe A.P.
F 2002	2	A	Pench NP, MP		WF	F	Gaur	1D	Pande S.A.
24N 2002	1	A	Amravati, MS	20.56N	WS	F	BHG	1D	Kasambe R
24N 2002	7	A	Amravati, MS	20.56N	WS	F	PS	1D	Kasambe R
J 2003	4	A	Naygaon,Pune, MS	17-18N	WS	R	DC, PS, WI	1D	Pande S.A.
J 2003	6	A	Garade, Pune, MS	17-18N	WS	F	SB, MH	2W	Pawashe A.P.
J 2003	1	A	Veer, Pune, MS	17-18N	R	F	BD	1D	Pande S.A.
J 2003	1	A	Velavadar, Gujarat	21.36N72.06E	WS	F	DC, CC	1D	Kolhatkar C.
M 2003	2	A	Kolhapur, MS	17N	WA	Fly		1D	Pande S.A.
J 2003	3	A	Kanha NP, MP	23N	WF	F	LWT, SD	1D	Sant N.R.
23N 2003	14	A	Amravati, MS	20.56N	WS	F	WNS, CC	1D	Kasambe R
7D 2003	1	A	Amravati, MS	20.56N	WS	F	PS,B D	1D	Kasambe R
J 2004	1	A	Pune, MS	18N	R	Fly		1D	Ranade S
11J 2004	3	A	Amravati, MS	20.56N	WS	F	PS, BHG, GC	1D	Kasambe R
22F 2004	1	A	Amravati, MS	20.56N	WS	F	PS,DC	1D	Kasambe R
F2004	5	A	Dharwad, Karnataka	15N75E	WS	FR	WNS	1D	Sant, N.R.

Key to abbreviations used in tables 1 and 2:

Date: This is the date on which the observations were recorded: O-October, N-November, D-December, J-January, F-February, M-March.

Age: A-Adult, J-Juvenile.

Locality: This specifies the locality where the birds were sighted; Ar.Pr.-Arunachal Pradesh, AP-Andhra Pradesh, Guj-Gujarat, HP-Himachal Pradesh, K-Karnataka, MP-Madhya Pradesh, MS-Maharashtra State, Raj.-Rajasthan, TN-Tamil Nadu, UP-Uttar Pradesh, WB-West Bengal, WLS-

Wildlife Sanctuary, NP-National Park.

Hb- Habitat - habitats where the Black Storks were observed: WA-Water body in agricultural area, WS-Water body in scrub area, WF-Water body in forest, R-River bank, SC-Sea coast.

Act. - Activity: F-feeding, Fly-Flying, R-Roosting, Hurt-Injured.

Assoc. - Associations: BD-Brahminy Duck, BHG-Bar-headed Goose, BK-Brahminy Kite, BNS-Black-necked Stork, CC-Common Crane, CD-Comb Duck, DC-Demoiselle Crane, GAS-Greater Adjutant Stork, GC-Greater Cormorant, GF-Greater Flamingo, LAS-Lesser Adjutant Stork, LWT-Lesser Whistling Teal/Duck, MH-Marsh Harrier, OBS-Open-bill Stork, O-Osprey, PS-Painted Stork, , RT-River Tern, SD-Spotted Deer, SP-Eurasian Spoonbill, WI-White Ibis, WNS-White-necked Stork, WS-White Stork.

Ob.P. - observation period - The duration during which observations were made in D-Day, W-Week.

Reference -the relevant reference is mentioned.

Observer -The names of observers are given.

on International Trade in Endangered Species of Wild Fauna and Flora) 2000 and Schedule IV of the Wildlife (Protection) Act 1972, of India. The South Asian non-breeding population of Black Storks at 1% level is 100 and an estimate of the total population is < 10,000 (Islam and Rahmani 2004). Whenever Black Storks or any other birds are found in distress, members of the ELA Foundation actively intervene and aid the needy birds. We, on behalf of ELA Foundation, our NGO, took active successful conservation measures in the form of confiscating and burning net traps and arresting poachers, with the help of the Forest Department, when net traps were discovered on the wintering grounds of Black Storks and White Storks (2002 and 2003). Continued vigilance in the area occupied by the storks was maintained in

the winter to prevent future disturbances. 22.6% of Black Storks recorded in published and unpublished records (Tables 1 and 2) (n=292) were seen in 14 protected areas. We are making active efforts on behalf of the ELA Foundation to educate local villagers and school children through slide shows and reports in newspapers to create awareness and prevent poaching. Active participation of forest department and local NGOs is taken when the need arises, but much still needs to be done on the wintering and foraging grounds in our region to safeguard the future of the declining Black Stork population.

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REFERENCES

- Asian Waterfowl Census 1987-91: Distribution and status of Asian Waterfowl. AWB, Publication No. 86, IWRB, Publication No. 24.
- ALI SALIM, S & DILLON, R. 1968: Handbook of the Birds of India and Pakistan. Vol. 1 Oxford University Press, Bombay.
- ANAND MOHAN, B. 2000: Birds in and around Sri Venkateshwara Wildlife Sanctuary, Andhra Pradesh. Zoo's Print Journal 15: 339-343.
- ANDHERIA, A. P. 1999: Birds of Nagarhole (Rajiv Gandhi) National Park, Karnataka. Newsletter for Birdwatchers 39: 58-60.
- ANDHERIA, A. P. 2000: Birds of Ranthambore National Park, Rajasthan. Newsletter for Birdwatchers 40: 51-53.
- BARMAN, R. & TALUKDAR, B.K. 1995: New record of Black Stork *Ciconia nigra* in Deepar Beel, Assam. Newsletter for Birdwatchers 35: 15.
- BASKARAN, S. T. 1995: An Audio Guide to the birds of South India and notes on Night Herons and Black Storks. Newsletter for Birdwatchers 35: 50.
- CHANGAN, A. K. 2002: Avifauna of Kumbhalgarh Wildlife Sanctuary in the Aravalli Hills of Rajasthan. Zoo's Print Journal 17: 764-768.
- CHOUHARY, A. 2003: The birds of Nongkhyllem. Newsletter for Birdwatchers 43: 52-53.
- DATTA, A., SINGH, P., ATHREYA, R.M. & KARTHIKEYAN, S. 1998: Birds of Pakhui Wildlife Sanctuary in Western Arunachal Pradesh, Northeast India. Newsletter for Birdwatchers 38: 91-96.
- ELPHICK, J. 1995: The Atlas of Bird Migration. Random House, New York.
- HENRY, G. M. 1971: A Guide to the Birds of Ceylon. Oxford University Press, Bombay.
- HIMMATSINHJI 1985: The Black Stork in Kutch: old record confirmed. J. Bombay Nat Hist. Soc. 82: 403.
- ISLAM, M. Z. AND RAHMANI, A. R. 2004: Important Bird Areas in India: Priority sites for conservation. Indian Bird Conservation Network: Bombay Natural History Society and BirdLife International, UK.
- JAYSON, E.A.. 2000: Occurrence of Black Stork *Ciconia nigra* (Linnaeus) in Kole Wetland of Thrissur, Kerala. Newsletter for Birdwatchers 40: 39-40.
- KASAMBE, R. In press. A note on Black Storks. Zoo's Print Journal.
- KURHADE, S. 2003: Sighting of Black Stork and White Stork in Ahmadnagar, Maharashtra. Newsletter for Birdwatchers 43: 41.
- MAHABAL, A. & LAMBA, B.S. 1987: On the birds of Poona and vicinity. Rec. Zool. Surv. India, Occ. Paper No. 94: 1-115.
- MANAKADAN, R. 1987: The Black Stork *Ciconia nigra* (Linnaeus) in Kurnool District (Andhra Pradesh). J. Bombay nat. Hist Soc. 84: 675-676.
- MISRA, M. K. 1994: Stork Watching at Ratapani. Newsletter for Birdwatchers 35: 118.
- NARAYAN, K. D. 1989: Sight records of Ibis and Storks in Kerala. J. Bombay nat. Hist. Soc. 86: 239.
- NEWTON, P. N., STANLEY, B. & GRAY, J. N. 1986: The birds of Kanha Tiger Reserve, Madhya Pradesh, India. J. Bombay nat. Hist. Soc. 83: 477-498.
- PANDE, S., TAMBE, S, FRANCIS, C. & SANT, N. 2003: Birds of Western Ghats, Kokan and Malabar (Including birds of Goa). Oxford University Press and Bombay Natural History Society.
- PANDEY, S. 1989a: Black Stork. Newsletter for Birdwatchers 29: 9.
- PANDEY, S. 1989b: The Pong dam Lake bird sanctuary, Himachal Pradesh. Newsletter for Birdwatchers 29: 3-4.
- PERENNOU, C & SANTHARAM, V. 1990: Status of some birds in southeastern India. J Bombay.Nat. Hist.Soc 87: 306-307.
- PRASAD, A. 1997: Black Storks in Kerala. Newsletter for Birdwatchers 37: 65.

- PRAVEEN, J. & MENON, A. 1994: Walayar-An Avian Picture. Newsletter for Birdwatchers 34: 79-82.
- RAO, V. V., NAGULU, V. & SRINIVASULU, C. 2000: Additional site records of Black Stork *Ciconia nigra* (Linn.) in Andhra Pradesh. J.Bombay nat. Hist. Soc 97: 143.
- RELTON, A. 1998: Threatened birds of Karaivetti Bird Sanctuary, Tiruchirapalli, Tamil Nadu. Newsletter for Birdwatchers 38: 21-22.
- SAWJI, P.G. 1990: Black Storks in Maharashtra. Newsletter for Birdwatchers, 30: 11.
- SAXENA, R. 1998: A checklist of birds of Morena District (M.P.) Newsletter for Birdwatchers 38: 28-30.
- SHAFIQ, T. 2002: A visit to Kanha National Park, Madhya Pradesh, India. Newsletter for Birdwatchers 42: 22-24.
- SHARMA, A.K. 1981: Birds of Sariska Tiger Reserve. Newsletter for Birdwatchers 21:7-10.
- SHARMA, S. K. & RAZA, T. 1994: Birds of Southern Rajasthan. Newsletter for Birdwatchers 34 109-113.
- SIVAKUMAR, S. & VIBHU, P. 2004: Fauna of Protected Areas-6: Waterbirds of Buxa Tiger Reserve, West Bengal. Zoo's Print Journal 19: 1451-1452.
- SRIDHAR, S. 1989: White and Black-necked Storks in the 1989 census (with extract of Table of Asian Waterfowl Census 1989). Newsletter for Birdwatchers 29: 10.
- VYAS, R.1992: Checklist of the birds of Kota district in south-east Rajasthan. Newsletter for Birdwatchers 32: 8-10.

