



Original Research Article

Status and Ecology of Sarus Crane, *Grus antigone antigone* in District Sitapur, Uttar Pradesh

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ABSTRACT

The Indian Sarus Crane, *Grus antigone* is forced to use habitats that resemble natural wetlands, i.e. flooded paddy fields, and thus become more vulnerable. Today, the best Sarus Crane populations are found in areas which have a mix of natural wetlands in the landscape, and where the traditional major crop has been rice, e.g. as in South Western Uttar Pradesh. There are hardly any areas left in the country where pesticides are not used to improve the production of crops. As a result, deaths due to poisoning after application of pesticides are perhaps the most important threat for the state bird of Uttar Pradesh presently, next only to the destruction of its natural habitat. Because of its proximity to humans and their activities, most of the other threats that the Sarus faces also revolve around anthropogenic activities. These include removal of eggs and chicks from nests by the villagers, feral dogs, crows etc. for food when adults leave to defend territories. Sarus Crane is also considered inauspicious by the village folks and therefore they drive them away from their village. To quantify this conflict and its impact on the population, and to provide information for a management strategy to conserve the Sarus Crane particularly in an agricultural landscape, author undertook a detailed study on status and ecology of the Sarus Crane in district Sitapur.

Keywords: Sarus Crane, paddy fields, pesticides, anthropogenic activities

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1. Introduction

The Sarus Crane, *Grus antigone antigone* is considered as a threatened species and classified as endangered species under the revised IUCN Red List categories. It is also listed in appendix II of the CITES and protected by the Indian wild life (protection) Act, 1972 under schedule IV. Uttar Pradesh, one of the largest states of India having 2,40,927 sq. km geographical area, possess largest population of the Indian Sarus Cranes. At present, Sarus Cranes have been reported in 35 districts of the Uttar Pradesh (Sundar *et. al.*, 2000). They found largely in the natural wetlands as well as

agricultural fields. But, most of the wetlands have been encroached and converted in to agricultural lands which results into decline of Sarus Crane population in U. P. The biotic pressure due to increasing human population is also a factor that needs immediate attention. Present study has been taken in to consideration to know detail information regarding the species in Sitapur district with special reference to its habitat and population. The indication regarding population declining is also a major part of study.

2. Study Area and Methods

Present study was carried out between November 2012 and October 2013. All the preferable habitats of Sarus Crane especially utilized for nesting, foraging, resting and roosting were surveyed during winter (i.e. November to February). Breeding pairs were observed during the

breeding season (i.e. July to October) as they started courtship followed by the nest building. Several suitable hides were made near the nest for close observation. Local peoples were also interviewed to know about the nest places, predators of chicks and eggs and home range of the bird.

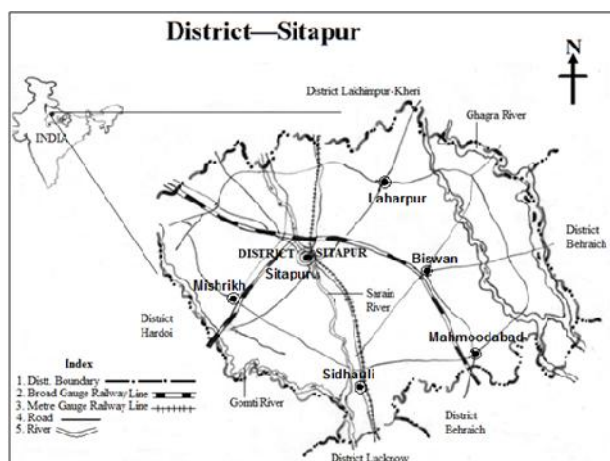


Figure 1: Map of district Sitapur (Uttar Pradesh) showing 6 tehsils.

Sitapur district is lies at 27°34'N 80°41' E and 27.57°N 80.68°E and located on the Gangetic plain, with elevations ranging from 150 m above sea level in the north-west to 100 m in the south-east. Sitapur has an area of 5743 km² and whole district is divided into six tehsils viz., Sitapur, Biswan, Mishrikh, Mahmoodabad Laharpur, and Sidhauri. It is intersected by numerous streams and ravines, and contains many shallow ponds and natural reservoirs, which overflow during the rainy seasons, but become dry in the hot season. The main rivers of district

Sitapur are Gomti, Chowka, Ghagra & they have tributaries Sarain, Pirai, Gond, Godia, Kevani, Gadia, Ikharia etc. Rural areas of district Sitapur is als interspersed with lakes viz., Salpur, Biswan Khurd, Tendua, Rukdipur, Arseni, Ajjeypur etc. The minimum temperature of district is 6°C & maximum temperature is 43.34°C. The annual rainfall averaged 38 inches per year. Agriculture is the primary activity, with wheat, rice, and urad are the staple crops with sugarcane, mustard and groundnuts as cash crops.

3. Results & Discussion

All the six tehsil of district Sitapur were surveyed for the habitat and status of Sarus Cranes. Northern and eastern-south area of Sitapur, Laharpur and Mishrikh tehsils support a fairly good population of Saarus Cranes. In all, 215 adults and 35 young ones were sighted from six tehsil of the district. Out of 215 adults, 206 birds in pairs (i.e. 103 pairs) and 9 birds were seen singly. Out of 103 pairs, 27 were with their young ones. The young ones have been further sub divided into sub adult, juvenile and chick depending on their plumage, approximate age and height (Table 1).

In tehsil Sitapur (Sadar) 33 Sarus Cranes were seen, which included 26 adults, 4 sub adults, 1 juvenile and 2 chick. The population was mainly confined around Sitapur city in agricultural fields nearby the shallow ponds and canals. Biswan tehsil has some of the finest wetlands and the Sarus Crane is mainly confined to Biswan Khurd lake. Thirty seven adults, 1 sub adult and 2 juveniles were seen in this tehsil. Similarly, fifty seven birds (46 adults, 6 sub adults, 2 juveniles and 3 chicks) were recorded from Mishrikh tehsil. The largest population of Sarus Cranes i.e. 62 birds (52 adults, 4 sub adults, 4 juveniles and 2 chicks) were recorded

from Laharpur tehsil. 35 adults and 1 sub adult from Mahmoodabad tehsil and only 12 Sarus Cranes (9 adults, 2 sub adults and 1 juvenile) were seen in Tehsil Sidhauri

which is very low figure among all six tehsils of district Sitapur (Table 2).

Table 1: Number of Sarus Cranes seen during the survey

Sarus Cranes	Numbers
Pairs	103 (206 birds)
Single	9
Sub adults (approx. adult size, body, crown not red)	18
Juvenile (approx. 100 cm., overall buff)	10
Chick (downy, up to 70 cm.)	7
Total	250

Table 2: Number of Sarus Cranes sighted in each tehsil of Sitapur district

Tehsil	Adult	Sub adults	Juveniles	Chicks
Sitapur	26	4	1	2
Biswan	37	1	2	--
Mishrikh	46	6	2	3
Laharpur	52	4	4	2
Mahmoodabad	35	1	--	--
Sidhauri	09	2	1	--
Total	215	18	10	7



Fig. 2. Sarus Crane, *Grus antigone antigone* in different habitats

- 2a. An adult with a chick in swamp,
 2b. A flock of Sarus Crane foraging in waterlogged area,
 2c. A flock of Sarus Crane in sugar cane field,
 2d. A flock of Sarus Crane in fallow land.

In the year 2012, district forest department had counted 337 Sarus Cranes, out of which 280 adults and 57 including sub adults, juveniles and chicks. During the recent survey 68% birds were seen in the inundated fields, marshes or very close to water bodies whereas 32% were found in fallow, harvested or crop fields. Among the different wetland habitats, Sarus Cranes mostly preferred marshes, inundated

fields and reed beds, followed by village ponds, paddy fields and finally canal and river beds especially during the summer months. Among the crops, most preferred by Sarus Cranes are Sugarcane, paddy, wheat and maize (Fig. 2). Author's figure tend to confirm the views of earlier researchers (Gole, 1989; Kulshreshtha and Vyas, 1994) that wetlands were most commonly and frequently used by

Sarus Cranes in Sitapur. During the present survey 27 pairs out of a total of 103 were found with sub adult, juvenile or a chick thereby giving a figure of 26.21% breeding pairs out of the total population of Sarus Cranes. Of the total 250 Sarus Cranes seen, 35 (14%) were young ones, which compares well with the all India figure of 13.71% given by Gole (1989). Any change or disturbance to the wetland ecology and crop or cropping pattern may have an adverse effect on survival of Sarus (Vyas, 2002). In Sitapur district, a number of Sarus roosting sites have been lost due to urban

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