

## CONTINUOUS INCREASE IN POPULATION OF INDIAN SARUS CRANE *GRUS ANTIGONE ANTIGONE* IN AND AROUND ALWARA LAKE OF DISTRICT KAUSHAMBI (U.P.)

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**ABSTRACT :** The Indian sarus crane *Grus antigone antigone* is the world's graceful and tallest flying bird. It is a non-migratory and only resident breeding crane of Indian sub continent. It has been declared as 'State Bird' by Government of Uttar Pradesh. Pairing of the bird for life long and legendary marital devotion of the species has earned its global popularity. Ecological and environmental condition of this lake is quite supportive for the survival of this vulnerable species. The present study deals with the distribution and conservation of this vulnerable species in and around the Alwara lake of district Kaushambi, Uttar Pradesh. A total of 335 cranes were actually observed in 2012, 425 in 2013, 510 in 2014 and 537 in 2015, although more cranes were claimed to exist in this area by the local people. This communication is clearly depicting continuous increasing trend in population of Indian sarus crane during their exploration from 2012-2015 in the area studied, although its population is decreasing at global level.

**Key words :** Alwara lake, Sarus crane, Increasing trends, Conservation, Population comparison.

### INTRODUCTION

The Indian sarus crane, *Grus antigone antigone* (Linnaeus, 1758) is the largest of the crane species found in India. Its population density is inseparably associated with wetland habitats and prefers to inhabit close to human habitation. The Indian sarus crane has been listed as globally threatened i.e. vulnerable avian species (Bird Life International) because of its declining numbers. The name "Sarus" has its origin from Sanskrit word- 'sarasa', which means 'lake bird' and the dance of the sarus has undoubtedly led to the species getting the name. The skin of this bird was first studied and described by Carolus Linnaeus who named it as *Antigone* in 1758.

A few investigators (Sundar *et al.*, 2000a,b; Sundar, 2010; Jha & McKinley, 2014; Prakash *et al.*, 2014; Ansari, 2015; Verma *et al.*, 2015, 2016a and Prakash *et al.*, 2016a,b) have tried to study the demography, ecology and status of Indian sarus crane on large scale in Uttar Pradesh. Sundar and Choudhary (2003) gave the literature review of sarus crane in detail. As far as the study of this sarus crane in and around the Alwara lake is concerned, it is done only by few zoologists like Verma *et al.* (2015, 2016a,b) and Prakash *et al.* (2016a), who reported an increasing population trend of Indian sarus crane in and around of this said lake.

Verma *et al.* (2016c) and Prakash *et al.* (2016c) worked a little on the nesting materials, their medicinal values and suitable selection of nesting sites of this crane present exploration is aimed to study the month wise population of sarus crane during the year 2015 in and around the Alwara lake of district Kaushambi and their comparison to month wise sarus crane population recorded in 2012 and 2014 in the same study area.

### MATERIAL AND METHODS

**Study area :** The Alwara lake (Google Map-1) is a natural lake (Fig. 1) and a part of perennial wetland and is situated between the latitude 25°24'05.84"S-25°25'10.63"N and longitude 81°11'39.49"E-81°12'57.95"W with altitude MSL-81.08 meter. It is surrounded by agricultural fields and connected to the river Yamuna and covers more than 1750 hectares. It is located in Sarsawan block of Manjhanpur tehsil of Kaushambi district of Uttar Pradesh.

This lake is surrounded by Ranipur, Dundi, Hatwa and Bhawansuri in East, Paur Kashi Rampur, Alwara and Gaura in the North, Shahpur, Umrawan in the South and Mawai, Tikra and Dalelajanj in the West.

Authors used binocular, camera, motorbike, chappu boat, field stick etc. for different purposes during survey programme. As the sarus crane is a huge bird and visible from a distance hence it was easy to count sarus properly. The study area was visited regularly during first and third Sunday of every month in 2015 but the crane was counted on first Sunday of June, 2015 on a single day.

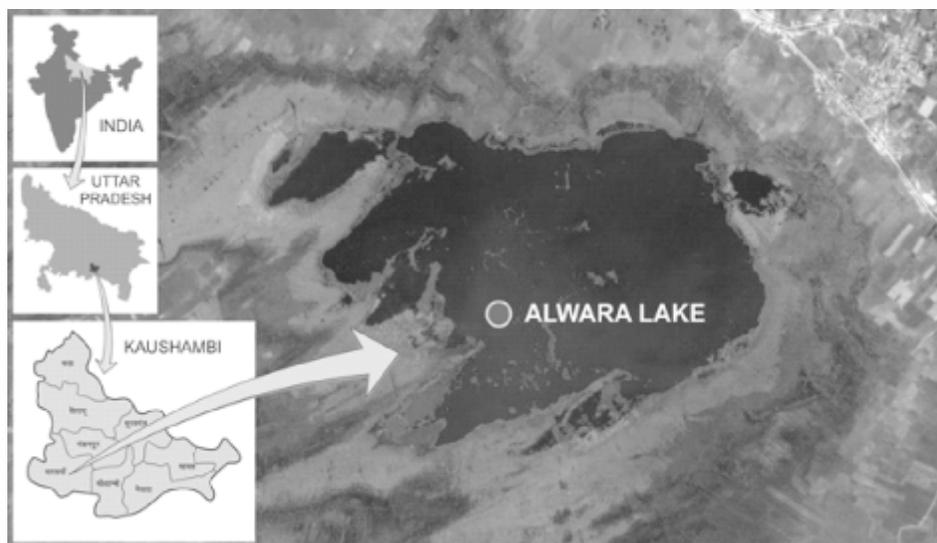
Besides actual sightings, inquiries from local people were also made to ensure the estimate of existing population and their perceptions about the existence of the crane. All the observations were made while moving through the chappu boat and walking along the crop lands, mud lands, natural areas using binoculars (7x35 and 8x40-BEZIF BM-9) and canon cameras.

The identification, counting methods and other study parameters were aided by using Wild Life Institute of India Wetland Research Methodology (1999), Ali *et al.* (1999) and Aryal *et al.* (2009).

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Google Map. 1 Study area in Kaushambi district of Uttar Pradesh.

**RESULTS AND DISCUSSION**

Sarus cranes are seen mostly in pair (Fig.3) or in pairs with juvenile (Fig.4) and rarely in solo condition. The family

group occurs in whole year but during non-breeding season, cranes are seen in congregation for mate finding or pair formation. The authors counting included the crane pairs along with juvenile.



Fig. 1 A view of Alwara lake of Kaushambi (U.P).

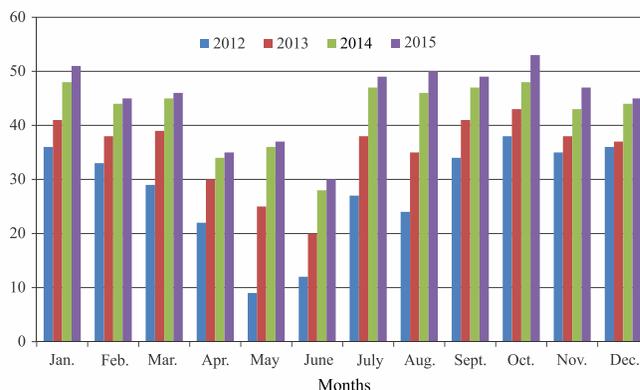


Fig. 2 Graphic representation of month wise population of sarus cranes from 2012-2015.

Table. 1 Month wise comparison of sarus crane population from 2012-2015.

Month	No. of cranes (2012)	No. of cranes (2013)	No. of cranes (2014)	No. of cranes in (2015)
January	36	41	48	51
February	33	38	44	45
March	29	39	45	46
April	22	30	34	35
May	09	25	36	37
June	12	20	28	30
July	27	38	47	49
August	24	35	46	50
September	34	41	47	49
October	38	43	48	53
November	35	38	43	47
December	36	37	44	45
<b>Total</b>	<b>335</b>	<b>425</b>	<b>510</b>	<b>537</b>



Fig. 3 Paired sarus crane in agro paddy field around Alwara lake.

Prakash *et al.* (2014) counted a population of 335 cranes in 2012 (Table.1) in three different transects of Alwara lake, Verma *et al.* (2016a) counted their population as 425 in 2013 while Verma *et al.* (2016b) reported 510 cranes in total in and around Alwara lake in 2014. In present survey, authors collected a data of 537 cranes in the same study area in 2015, as shown in Table.1 and Bar diagram (Fig.2).

Above representation clearly indicates a continuous growth in the population of sarus cranes from 2012-2015. The reason behind this increase in population is due to openness, suitable agricultural land and seasonal marshes dominated over the climatic factors and occurrence of favourable ecological, feeding, mating and nesting conditions as well.

The number of sarus cranes is gradually decreasing at global level due to widespread reductions in the extent and quality of their wetland habitats, exploitation and the effects of pollutants, unplanned farming, irrigation and non-adoption of wild life rules and regulations as well. Due to its declining number, Indian sarus crane has been now listed as globally threatened *i.e.* vulnerable avian species (Bird Life International,2012).

However, in the present study, a continuous gradual increase is clearly indicated in the table and bar diagram. This increasing trend in the population of sarus crane is an important aspect of ecological balance. Prakash *et al.* (2014) and Verma *et al.* (2015,2016a,b) strongly argued that this is happening only because of favourable environmental conditions for sarus crane in and around the Alwara lake and the Alwara lake is good natural habitat for this species (Verma *et al.*,2016d).

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Fig. 4 Sarus crane pair with juvenile in agro-field around Alwara lake.

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