

# ECOLOGICAL SOCIETY

1B Abhimanshree Society, Pashan Road,  
Pune 411 008 □ Tel. : 0212-56408

## STATUS SURVEY AND CENSUS OF SARUS CRANE (Grus antigone)

### SCHEDULE OF INFORMATION

Investigator's Name : **BHARAT SINGH**

Address : **VILLAGE & P.O. KUNDANPUR, TEHSIL-SANGOD - DIST - KOTA - RAJASTHAN**

Area investigated : Location : Taluka : Dist. :

Date : Time : from to

Numbers of Sarus seen : **200 +**

Where seen (Cultivation/ ✓fallow/waste land/marsh/ other (please describe) ✓river bed	observed <sup>in</sup> all types of habitat	No. of Pairs <b>50 +</b>	No. of Families <b>12 +</b>	Single <b>on few occasions</b>
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In Kota dist sarus cranes are observed in certain area all the year round. During the dry summer months they move to the river beds and can be seen in a particular nesting area throughout the summer. They collect in large flocks of 50-60 birds (all adult birds). I have also observed that the birds are nesting all the year round. Eggs & chicks observed in March + April - July - August - Oct - Nov.

(Please describe as above the habitat of each pair and family seen. Attach more sheets if necessary.)

This summer in a particular area I observed 6 pairs of sarus all on nests

observed Out of the above families :	No. of families with 1 chick/Juvenile <b>3</b>	No. of families with 2 chicks/Juveniles <b>1</b>	
Nest + observed March	all had 2 eggs & all hatched but only 4 pairs could raise the young		
No. of flocks seen <b>2</b>	No. of Sarus in each flock <b>50 +</b>	Adult/Juvenile ratio <b>85% Adults</b>	Where seen (cultivation/fallow/marsh etc.) <b>river bed and marsh</b>

if you locate a breeding site, please give details such as :

Location : **around KUNDANPUR** Taluka : **- SANGOD** Dist. : **KOTA**

Nearest village/town. : Lat. : Long. :

Approx. area (in Ha) : **10 Hact.** Nature [marsh/pond/lake/island/other (describe)]

Dominant Plants :

No. of Pairs **6** No. of Nests **6** Nests  
with 1 egg : **—** with 2 eggs : **6**

Is the area disturbed : **✓** Yes/No

If yes, disturbed due to : **— men - cattle**

Peoples' attitude towards cranes : **✓** Cranes are no problem/are a nuisance.

They are a nuisance because : **No**

What will people do to reduce the nuisance? **nothing**

Did you see any of the following cranes during the field trip? **Last this winter 87-88**

(Please check and enter the estimate of nos. in the bracket)

Common or Eurasian [ **1200+** ], Demoiselle [ **500+** ], Siberian [ **—** ].

Location : **along the Chambal canal** Where seen (cultivation/fallow/waste land/marsh/  
Taluka : lake margin/island/other) **✓ ✓**

Dist. :

#### NOTES

S. cranes were again observed or nest in sep-oct in the same area  
they were observed in summer months.  
Sarus in these months are to be seen almost <sup>in</sup> every pond  
and marsh area. chicks are commonly observed with the  
adult birds. (most of them are about 15-20 days old) (10.10.88)

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Please use one sheet for one area.

Please investigate each area twice : in Sept./Oct. and in Jan./Feb.

Completed forms may be returned to : Prof. R. M. Naik, Dept. of Bio-sciences, Saurashtra University, Rajkot 360 005 or to Prof. A. H. Musavi, Centre of Wildlife & Ornithology, Aligarh Muslim University, Aligarh (U.P.) or to Prakash Gole, Ecological Society, 1B Abhimanshree Society, Pune 411 008.

APPLICATION FOR GRANTS

FOR PROJECTS UNDER THE ENVIRONMENT RESEARCH PROGRAMME

( To be completed by the Principal Investigator )

- |  |  |
|--|--|
| 1. Title of the Project  | A Status-survey of Sarus Crane (Grus antigone) and an investigation into its Ecological requirements.  |
| 2. Name and Designation of the Investigator  | Prakash Gole<br>Chief Coordinator, Crane Working Group of the Indian Sub-continent.  |
| 3. Postal address of the the Investigator  | Ecological Society<br>1B Abhimanshree Society<br>off Pashan Road, PUNE 411 008   |
| 4. Name of the Institution/ Organization in which the Project will be carried out. | Ecological Society   |
| 5. Names of other Institutions involved in the Project                             | Department of Biosciences,<br>Saurashtra University;<br>Centre for Wildlife & Ornithology,<br>Aligarh University;<br>Bombay Natural History Society;<br>Department of Zoology, Gauhati University. |
| 6. (a) Time required for commencement of Project on receipt of approval            | Within one month of the receipt of approval  |
| (b) Duration of the Project  | Two years.   |
| 7. Total amount of assistance required   |  |
| First Year   | Rs. 79,300/-   |
| Second Year  | Rs. 60,300/-   |
| TOTAL  | Rs.1,39,600/-  |

I/We have carefully read the terms and conditions of ERC/MAB research grants and agree to abide by them.

Signature of the Investigator

Date

Place

ENDORSEMENT

Certified that the basic facilities needed for undertaking the proposed project are available at our institution and these will be extended to the Investigator together with such other administrative facilities required by the terms and conditions of the grant.

Signature of the Head of the Institution

Name and Designation : Shri. L.G. Rajwadi *q*  
Chairman,  
Ecological Society,  
PUNE.

Date

Place

Facilities available at the Ecological Society :

- (1) Administrative and office facilities including tabulation and analysis of data, preparation of maps, typing, etc.
- (2) Laboratory facilities for soil and water analysis, examination of botanical and ornithological specimens, etc.

### About the Principal Investigator

Prakash Gole, the Principal Investigator, has been associated with crane research for well over 12 years. He was a member of the research team under the leadership of the late Dr. Salim Ali, that went to Ladakh to study the Blacknecked Crane (*Grus nigricollis*). He again led the expeditions to Ladakh in 1978, 1980 and 1983 to study the same bird. He had also studied this crane in Bhutan in its winter quarters in 1981 and 1988. He had studied Sarus Crane (*Grus antigone antigone*) in Bharatpur in 1982. In 1986 he organised a meeting of the crane researchers from the Indian sub-continent and the Crane Working Group of the sub-continent was formed. He was elected to be its Chief Coordinator. This Group has monitored the status of cranes in the sub-continent since 1986 and Mr. Gole has pioneered the publication of maps of the distribution of crane species occurring in the sub-continent.

His research papers, notes and articles on cranes have appeared in Journal of Bombay Natural History Society, in Crane Research Round the World, in Animal Kingdom, in Hornbill and in The Proceedings of the International Crane Workshop, Bharatpur, 1983. He has participated in Crane Workshops held in Sapporo, Japan, Bharatpur, India and Quigihar, China and had chaired sessions on cranes of the sub-continent. He is the author of the book 'A Field Guide to cranes of the Indian Sub-continent'.

A STATUS SURVEY OF SARUS CRANE (Grus antigone)  
AND  
AN INVESTIGATION INTO ITS ECOLOGICAL REQUIREMENTS

1. Introduction

Sarus is our tallest flying bird. Wherever it occurs, it is such a conspicuous feature of the scene, that it was identified and given a name since very ancient times. Sarus crane thus finds mention in our ancient religious texts, literature, ballads and folklore. People recognised long ago that male and female Sarus are held together by a pair bond which snaps only when one of them is no more. On account of this sentiment, the Sarus pair became an object of admiration, came to be considered as a symbol of conjugal love and was not hunted or killed over much of its range in our country.

The protection the Sarus pair enjoyed since long, made them more or less unafraid of human beings and the pair became an integral part of the village scene.

However, in recent years the picture is not as hopeful for the Sarus as it used to be. Though hunting pressure on these cranes continues to be low, knowledgeable observers believe that suitable breeding habitat for the Sarus is shinking rapidly. Familiar nesting sites, which generations of Sarus have used, have disappeared under expanding cultivation or urban areas. Undisturbed marshlands are fewer, isolated shallow pools and ponds less available and nests in paddy fields and amidst cultivation are no longer tolerated. even in protected areas such as the Keoladeo Ghana National Park, the number of breeding Sarus pairs has come down drastically. Rapidly growing human population and consequent pressure on cultivable land are probably making life difficult for the Sarus.

(2) The social milieu of which Sarus was an integral part, is now changing fast due to technological advance and resultant changes in the pattern of production and consumption. How are the birds faring under such pressures? How many Sarus are there in our country and what is their distribution? Where do they breed? Are the breeding areas to be found only in national parks and sanctuaries or do they still breed outside these areas? What sort of pressures these areas face today? What is the rate of recruitment in the Sarus population? Is the population declining in number? To answer these questions it is proposed to carry out a status survey of Sarus crane and an investigation into its econological requirements.

(3) The Project Proposal

Two sub-species of Sarus are believed to occur within Indian limits. The Indian Sarus (*Grus antigone antigone*) occurs over much of northern India from the eastern fringe of the Thar desert to Bangla Desh and from the foothills of the Himalaya to north Maharashtra and adjacent areas of Andhra Pradesh. Though the exact limits of its distribution are yet to be defined, the area within the triangle formed by joining Ahmedabad, New Delhi and Patna with each other, the area lying between latitude  $22^{\circ}$  N to  $29^{\circ}$  N and longitude  $72^{\circ}$  E to  $86^{\circ}$  E may be the area where Sarus was believed to be common, while it becomes progressively less common towards north, east, south, and west of this core area.

The sub-species that occurs east of Bangla Desh through our eastern states, Burma, Thailand, Malaysia, Vietnam, Philippines to Australia is called Eastern or Burmese Sarus (*Grus antigone sharpii*). This is considered to be an endangered bird and believed to be extirpated over <sup>m/</sup> such of its range except Australia which it colonised as recently as the 1950s. Its status within Indian limits remains uncertain.

The present study will be divided into two phases :

Phase I : During this phase the status, distribution and ecological requirements of the nominate form viz. *Grus antigone antigone* will be investigated.

Phase II : This phase will concentrate on investigating the status, distribution and ecological requirements of the Eastern Sarus, *Grus antigone Sharpii*.

(4) Methodology

For the last two years members of the Crane Working Group of the Indian Sub-continent have been keeping a watch on the numbers and distribution of the Indian Sarus in selected areas. The results of these investigations are shown in the two maps enclosed. The areas investigated include Gujerath, east Rajasthan, west U.P. and north Maharashtra. 551 Sarus were recorded in these areas in 1986-87 while in 1987-88 only 373 Sarus were recorded. During the present study it is proposed to cover these areas more thoroughly as well as to cover areas that are either not studied so far or are only marginally studied. Such areas include parts of Gujerath and Rajasthan, almost the whole of Madhya Pradesh, central and eastern Uttar Pradesh, the whole of Bihar and Orissa and areas in northern Maharashtra not studied so far. This work will be undertaken during Phase I. Eastern States south of the Brahmaputra will be investigated in Phase II.

The investigators will be asked to prepare a detailed map of their movement in the area allotted to them. While on the move they will be asked to record the following : The number of Sarus pairs, the number of families and the number of chicks/juveniles in each family. If breeding area is found, the nature and extent of the area, the number of nests and the number of eggs in each nest. They will also be asked to interview people in order to

ascertain their views about the occurrence of the Sarus, whether the bird has any nuisance value and how do they deal with the nuisance?

They will be asked to assess the nature of the Sarus's breeding and non-breeding habitats and the threats the birds face.

A questionnaire (Pro forma enclosed) will be issued to investigators to record their observations.

These observations will be recorded during September-October and again in January-February.

The field-work will be co-ordinated as follows :  
Department of Bio-sciences, Saurashtra University will co-ordinate and guide the field-work in Gujerath and east Rajasthan.

The Centre for Wildlife and Ornithology will guide and co-ordinate the work in Haryana, Delhi, and west and central U.P.

Bombay Natural History Society will guide and coordinate the work in east U.P. Bihar and Orissa.

The Ecological Society through the Principal Investigator will be in charge of the over-all coordination as well as in particular the investigation in north Maharashtra.

The Principal Investigator will compile and analyse the information collected and will prepare the final report.

During Phase II, investigations will be carried out in similar way by the Principal Investigator in collaboration with such agencies as Guwahati University.

(5) Duration of the Study

The total duration of the study will be :

Phase I : One year; Phase II : One year. Total - 2 years.

Time Chart :

Phase I : Field-work will be carried out in September-October 1988, and again in January-February 1989.

Analysis of data and preparation of report will be done in the next six months, i.e. March-August 1989.

Phase II : Field-work will be carried out in November 1989 to February 1990.

Analysis of data and preparation of report will be carried out from March to August 1990.

(6) Expected Results

- a. A map of the distribution of Sarus, also giving information on key areas, the size of the breeding population and nature of the habitats etc. It will also pin-point areas that need protection.
- b. Knowledge of the basic ecological requirements of Sarus.
- c. A slide-presentation on Sarus to be used in educational institutions, nature camps and other youth activities.
- d. Research papers on Sarus.
- e. While looking for Sarus the investigators can also record information and status of other cranes such as Siberian, Eurasian and Demoiselle.

(7) Project Personnel

1. Principal Investigator
2. Field-work Coordinators
3. Investigators
4. Research Assistant

Duties :

The Principal Investigator will be in over-all charge. He will also act as the field-work coordinator for North Maharashtra and adjacent areas of M.P. A.

In Phase I, there will be 3 field-work coordinators for the following areas and drawn from the following agencies :

1. Gujerath and Rajasthan drawn from Saurashtra University;
2. Haryana, Delhi, West U.P. and North M.P. drawn from

Centre for Wildlife & Ornithology, Aligarh University;  
3. East U.P., Bihar and Orissa, drawn from Bombay Natural  
History Society.

In Phase II, there will be 1 field work coordinator  
drawn from Guwahati University.

The investigators will be drawn from Crane Working  
Group members, university students and amateur bird-  
watchers.

Research Assistant will help the Principal Investi-  
gator in field-work, analysis of data and preparation of the  
report.

(8) Budget

<u>Salaries/Wages</u>	<u>Phase I</u>	<u>Phase II</u>	<u>Total</u>
Honorarium for field- work coordinators	4,500	1,500	6,000
Research Assistant	10,800	10,800	21,600
<u>Permanent Equipment</u>		— Nil	
<u>Expendable Items</u>			
Photography, stationery, Typing, etc.	3,000	3,000	6,000
<u>Travel</u>			
<u>For Investigators:</u>			
Vehicle Expenses	35,000	20,000	55,000
T.A./D.A.	7,000	5,000	12,000
<u>For Principal Investigator:</u>			
Vehicle Expenses	10,000	12,000	22,000
T.A./D.A.	3,000	4,000	7,000
<u>Other Costs</u>			
Printing, Cyclostyling, Xerox, artists' fees, etc.	5,000	3,000	8,000
<u>Contingencies</u>	1,000	1,000	2,000
<u>Grand Total</u>	79,300	60,300	139,600