

STATUS OF THE ELEPHANTS IN KULDIHA SANCTUARY, ORISSA

D. SWAIN*

Introduction

The Kuldiha Sanctuary is located between 21°20' and 21°30' North latitude and 86°30' and 86°45' East longitude (Fig. 1). In area it covers 272.75 km², in the Nilagiri Range of Balasore District. It was declared a sanctuary by the Government of Orissa in 1984. Kuldiha formed part of the former Nilgiri Feudatory State and has enjoyed the status of a reserved forest since 1900 when the then ruler Raja Shyama Chandra Madharaj Harichandan framed rules for the protection and management of the forests in his State. The Sanctuary is rich in Sal trees (*Shorea robusta*) Forming about 60% of the trees of the 'Coastal Sal Forest'. The principal wild mammals inhabiting the areas are the Elephant (*Elephas maximus*), Bison (*Bos gaurus*), Spotted Deer (*Axis axis*), Barking Deer (*Muntiacus muntjak*), Sambar (*Cervus unicolor*), Sloth Bear (*Metursus urcinus*), Wild Boar (*Sus scrofa*), Leopard (*Panthera pardus*) and Jungle Cat (*Felis chaus*).

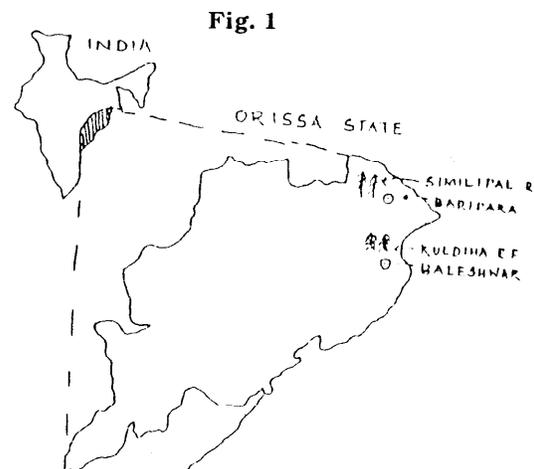
Except for passing reference about the Sanctuary very little is known about the wildlife of the area. In the official records, the Field Director, Similipal Tiger Reserve, Baripada, reports the occurrence of 22 elephants comprising 4 tuskers, 13 females and 5 calves in the Sanctuary based on an Elephant census conducted in May, 1979.

The author, in order to gain first hand information about the status of Elephant in

the Sanctuary, conducted two censuses, one in June and the other in December, 1992, the results of which are given below.

Materials and Methods

For the purpose of the census, the sanctuary was divided into 12 sectors, each with a station located on the periphery of the sanctuary to serve as the starting point for a census party. Each of the 12 census parties consisted of six persons. The stations were located at Hatikholia, Panchalingeswar, Sanjanagarh (Tenda), Garadiha, Dantur (Bandhasahi), Jharanaghati, Betei, Khaddikhania, Gadasahi, Gaja-ambo, Digbhaunra and Agirapada (Fig. 2). Each party moved from the starting station early in the morning of 28th June, 1992 at about 7 A.M., towards



* Silviculturist, Orissa, Ghatikia, Bhubaneswar.

Table 1

Elephant census in Kuldiha Sanctuary : Balasore : Orissa : India on 28.06.1992

Starting point of the census group	Elephant group	No. of Elephants in the group	Approximate Elephant height						Adult above 7'		
			Young Less than 4'			Sub-adult 4' to 7'			M	F	UN
			M	F	UN	M	F	UN			
Panchalingeswar	A	7	-	-	1	1	5	-	-	-	-
Dantur	-	-	-	-	-	-	-	-	-	-	-
Sajanagarh	B	2	-	-	1	-	1	-	-	-	-
	C	2	-	-	-	1	1	-	-	-	-
Gajamba	D	4	-	-	1	1	2	-	-	-	-
Betei	-	-	-	-	-	-	-	-	-	-	-
Garasahi.	-	-	-	-	-	-	-	-	-	-	-
Gadadihi	-	-	-	-	-	-	-	-	-	-	-
Agarapada			Not concluded								
Hatikholia	E	5	-	-	1	1	3	-	-	-	-
	F	1	-	-	-	1	-	-	-	-	-
Digbhanura	-	-	-	-	-	-	-	-	-	-	-
Jharanaghathi	G	3	-	-	-	-	3	-	-	-	-
Khedikhanania	-	-	-	-	-	-	-	-	-	-	-
		7	24	-	-	4	5	15	-	-	-

UN- Sex not known, F - Female, M - Male.

Table 2

Elephant census in Kuldiha Sanctuary : Balasore : Orissa : India on 11.22.1992

Starting point of the census group	Elephant group	No. of Elephants in the group	Approximate Elephant height						Adult above 7'		
			Young Less than 4'			Sub-adult 4' to 7'			M	F	UN
			M	F	UN	M	F	UN			
Panchalingeswar	A	9	-	-	2	1	6	-	-	-	-
	B	1	-	-	-	1	-	-	-	-	-
Dantur	C	3	-	-	1	-	1	-	1	-	-
Sajanagarh	D	1	-	-	-	1	-	-	-	-	-
	E	2	-	-	1	-	1	-	-	-	-
Gajamba	F	2	-	-	1	-	1	-	-	-	-
Betei	G	4	-	-	-	-	-	-	-	4	-
Garasahi.	-	-	-	-	-	-	-	-	-	-	-
Gadadihi	H	6	-	-	1	-	5	-	-	-	-
Agarapada	-	-	-	-	-	-	-	-	-	-	-
Hatikholia	I	2	-	-	1	-	1	-	-	-	-
Digbhanura	-	-	-	-	-	-	-	-	-	-	-
Jharanaghathi	J	3	-	-	1	-	-	-	1	1	-
	K	3	-	-	-	-	-	-	1	2	-
Khedikhanania	-	-	-	-	-	-	-	-	-	-	-
		11	36	-	-	8	3	15	-	3	7

UN- Sex not known, F - Female, M - Male.

Kuldiha Sanctuary is connected with the Similipal National Park in the Mayurbhanj District through Sukhuapata and North hill ranges forming part of the Eastern Ghats mountain ranges, which serve as the corridor of migration of Elephants of Similipal hill forests to Kuldiha forests covering a distance of about 20 km.

It appears from the two censuses that the Elephants of the Kuldiha Sanctuary live in highly fragmented groups varying from 2 to 9. Prater (1965) records that Elephants live in herds of five to sixty or more and that herds are believed to be composed of single families which break up into small groups when there is scarcity of food.

Tiwari (1990) reports that in the Periyar Tiger Reserve, Kerala, the herd size depended on the season and availability of fodder. It was minimum in January and February and maximum in April to June when the grass was fresh and green due to pre-monsoon showers. Basavaraju (1990) states that in the Mudumalai Wildlife Sanctuary, Kerala, the Elephant group sizes are 3, 6, 7, 11 and 13. Often younger males (10-15 years) are observed leading solitary life.

In Elephants, females and males are sexually mature when about 15 years old (Basavaraju, 1990). It is presumed that a 15 year old adult Elephant attains a height of 2.1 metres and above. Whereas, no adult was encountered in the Kuldiha Sanctuary during the census conducted in June, 1992. Only 3 males and 7 females were spotted in December, 1992 census. The break-up of the later census indicates that out of a total number of 36 Elephants, 3 are adult males, 7 adult females, 15 sub-adult females, 3 sub-adult males and 8 young. This indicates

very low effective population size with very low breeding potential. Unless effective corridor to the Similipal hills is maintained the Elephants of this sanctuary is destined to get wiped out in the human Elephant conflict. Practically nothing is known about the minimum viable population size in the Asiatic Elephant (Anon., 1990).

The period of gestation in the Asiatic Elephant in Kerala is 22 ± 1 months. The young is dropped in all months of the year, the maximum occurring in February, April, May and January (Nair, 1990). Sighting of 4 adult females, and 9 sub-adult juveniles

Table 3

Human interference in the Kuldiha Sanctuary, District Balasore, Orissa.

1. Number of villages within one km radius of Kuldiha Sanctuary. 19
2. Total population within one km radius of Kuldiha Sanctuary. 14,020
3. Regular head loaders entering the forest. 7,507
4. Cattle population depending on the forest (regular grazing). 37,297
5. (a) Head loader density 27.5 km²
(b) Cattle population density. 136.7 km²
6. Yearwise Elephants killed/died and reason are given below :

Year	Killed/Died	
1981	1	(Natural)
1982	2	(Poaching)
1984	2	(Unknown)
1987	1	(Unknown)
1989	1	(Poaching)
1990	1	(Unknown)
1991	1	Natural
1992	1	Poaching
1993	1	Poaching
	1	Natural
	1	Poaching
Total	13	

and young without the attendance of an adult/old leader female in the December census and similar sightings of sub-adult and young without an adult female in small groups of 7, 5, 4, 3 and 2 is intriguing.

Although Kuldiha is a Sanctuary and protected by Wildlife (Protection) Act, 1974, the denizens of this forest are subjected to much competition for food with domestic cattle and human interference. Within a radius of one kilometer of the sanctuary there are 19 villages with a total human population of 14,020 (Census, 1991) and cattle population of 37,297 for which the sanctuary serves as the grazing grounds. As surveyed by the author as many as 7,507 people visit the sanctuary daily to collect a head load of firewood to eke out a living by selling in the village fare or market (Table 3).

The Future

As would appear from the foregoing, the Kuldiha Sanctuary is subjected to tremendous human interference in addition to poaching as evidenced by the fact that during the period 1981-1993, death of 13 Elephants were reported, of which 3 deaths are believed to be natural, 6 were killed by

poachers and the death of 4 remains uncertain (Table 3).

Due to human population growth interference with the freedom of wildlife of the area is increasing in the form of encroachment, deforestation, livestock grazing, sustained yield forestry, poaching, fire hazards, and various developmental activities. In addition, due to the above reasons the corridor facilitating free movement of Elephants from the Similipal forests to Kuldiha and vice-versa is likely to be cut off due to deforestation and human settlement leaving the Elephants of Kuldiha isolated.

In order to maintain the Elephant population of the Kuldiha Sanctuary, careful land-use planning is necessary to ensure the following :

1. The forest corridor connecting Similipal with Kuldiha should be maintained.
2. Efforts should be made so that the Elephant population increases at least to 50 in order to counter in-breeding depression.
3. Cattle grazing and collection of firewood are to be severely restricted.

Acknowledgements

Grateful thanks are due to Dr. B.K. Behura for kind help in the preparation of the manuscript and Dr. S.P. Rath, Department of Botany, Utkal University, Bhubaneswar and Mr. G.S. Padhi, Principal Chief Conservator of Forests, Government of Orissa for constant encouragement.

SUMMARY

Elephant census was carried out by the author twice in the Kuldiha Sanctuary of Orissa, one in June and the other in December, 1992. The result of such census has been discussed in this paper. The Elephants in this sanctuary live in highly fragmented groups due to scarcity of food and biotic interference. Suggestions have been made to save this fragmented population from annihilation.

उड़ीसा के कुल्लिया अभिरण्य में हाथियों की परिस्थिति

डी० स्वेन

सारांश

हाथियों की जनगणना, एक जून तथा दूसरी दिसम्बर 1992 में उड़ीसा के कुल्लिया अभिरण्य में, जिसके परिणाम इस अभिपत्र में वर्णित है। चारे की कमी तथा जैव अवरोध के कारण हाथी इस अभिरण्य में कई समूह व खण्डों में रहते हैं। इस खण्डीय जनसंख्या को लोप होने से बचाने के लिए सुझाव दिए गए हैं।

References

- Anon. (1990). *The Asian Elephant : An action plan for its conservation*, IUCN, Gland, Switzerland, pp. 1-79 + Viii.
- Basavaraju, H.(1990). The study of the ecology of an endangered species of wildlife "The Asiatic Elephant" and its habitats. *Proc. of the Sympo. on Ecology, Behaviour and Management of Elephants of Kerala* (Ed. C.K. Karunakaran) Kerala Forest Dept., Spl. Publ. No.1 pp. 81-91.
- Nair, P.G. (1990). Reproductive behaviour of Indian Elephant (*Elephas maximus maximus*). *Proc. of the Sympo. on Ecology, Behaviour and Management of Elephants of Kerala* (Ed C.K. Karunakaran) Kerala Forest Dept., Spl. Publ. No.1. pp 114-116.
- Prater, S.H. (1965). *The Book of Indian Animals*. Bombay Natural History Society, Bombay 2nd (Revised) p. 225.
- Tiwari, J.K. (1990). Habitat utilization by Elephants in Periyar Tiger Reserve. *Proc. of the Sympo. on Ecology, Behaviour and Management of Elephants of Kerala*. (Ed. C.K. Karunakaran) Kerala Forest Dept. Spl. Publ. No.1 pp 65-70.
-