



Short Communication

Population Status of Mugger Crocodile (*Crocodylus palustris*) in Similipal Tiger Reserve, Odisha, India

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Abstract

Total 85 numbers of mugger crocodiles are recorded from six rivers named East Deo, West Deo, Palpala, Khadkei, Khairi and Budhabalanga running through seven Ranges of Similipal Tiger Reserve. Out of 85 individuals, highest 64 numbers of muggers are recorded from West Deo followed by 9 individuals from Khadkei, 6 from Khairi, 3 from East Deo, 2 from Palpala and 1 from Budhabalanga. Maximum size of about 2.45 metre of single individuals is recorded from West Deo River at Patbil darh region of Upper Barakamuda Range. The recorded size varies from individual to individual according to different age groups and lies between 0.5 m to 2.5 metre. Among different age groups Juveniles are more (43.52%) followed by sub adults (21.17%), adults (16.47%) and yearlings (7.05%). Age group is unknown for 11.76% individuals. Among the study Ranges Upper Barakamuda Range hosts highest (52) number of mugger crocodiles followed by Karanjia Division (12), Nawana South Range and Jenabil Range (9), Nawana North Range (3) and no crocodile is observed from Chahala Range and National Park Range.

Keywords: Population status, mugger crocodile, tiger reserve.

Introduction

Out of three Indian crocodiles Gharial (*Gavialis gangeticus*), Mugger (*Crocodylus palustris*), Estuarine crocodile (*Crocodylus porosus*) Mugger is resident to freshwater habitats ranging from ponds and reservoirs to fast flowing streams and river. Similipal hosts several perennial rivers like river Budhabalanga in the North, Khadkei, Khairi and Bhandan in the north-west, west Deo in the south west, Salandi in the south and East Deo and sanjo in the east. According to Sahu and Swain¹, results of a survey conducted in November–December 1979 indicates that the Mugger had virtually become extinct in the Similipal Tiger Reserve area. After that crocodiles have been released to the rivers of Similipal year after year from Ramatirtha crocodile breeding centre of Jashipur. Conducting census and estimating population status of Mugger crocodile in Similipal Tiger Reserve is important to know survivability of the species in wild. Population status of Mugger crocodile in wild has been studied by Andrews² in Tamil Nadu and by Vijaya Kumar *et al*³ in Gujarat.

Study Area: Similipal Tiger Reserve located in the Mayurbhanj District of Orissa and spreads over 2750 km² of the Chotanagpur plateau. The park is surrounded by high plateaus and hills, the highest peak being the twin peaks of Khairiburu and Meghashani (1515m above mean sea level). At least twelve rivers cut across the plain area, all of which drain into the Bay of Bengal. The prominent among them are Budhabalanga, Palpala Bandan, Salandi, Khairi and Deo. Beautiful waterfalls

like Joranda and Barehipani enriches the scenic beauty of the tiger reserve. The riparian zones, perennial streams and meadows form key areas of the reserve. An astounding 1078 species of plants including 94 species of orchids find their home in the tiger reserve. It hosts 55 species of mammals, 304 species of birds, 60 species of reptiles, 21 species of frogs, 38 species of fishes and 164 species of butterflies that have been recorded from the Park. The core area comprises of 7 Ranges with an area of 1194.75 km².

Methodology

The study was conducted during the month of March 2011 in seven Ranges of Similipal Tiger Reserve named Upper Barakamuda (UBK), Chahala, Jenabil, Nawana South, Nawana North, National park, Pithabatha and Karanjia Division. Both direct sighting and track evidence Singh, 1999⁴ was taken in to consideration for study.

Direct sighting: Approximate measurement from direct sighting was taken basing on following criteria. If head is seen, Body length = 7.0 x head length, If snout tip to hind leg is visible, Body length = 2 x snout-vent length, If tail tip to hind leg is visible, Body length = 2 x tail length.

Track evidence: Approximate measurement from track was taken basing on following criteria. If hind paw mark is seen, Body length = 14 x paw length excluding claw, If tail mark is seen, Body length = 65 x maximum distance between two lines formed by tail scutes.

Results and Discussion

Total 85 numbers of mugger crocodiles are recorded from six rivers named East Deo, West Deo, Palpala, Khadkei, Khairi and Budhabalanga running through seven Ranges of Similipal Tiger Reserve. Out of 85 individuals, highest 64 numbers of muggers are recorded from West Deo followed by 9 individuals from Khadkei, 6 from Khairi, 3 from East Deo, 2 from Palpala and 1 from Budhabalanga (table-1). Maximum size of about 2.45 metre of single individuals is recorded from West Deo River at Patbil darh region of Upper alBarakamuda Range. The recorded size varies from individual to individual according to different age groups and lies between 0.5 m to 2.5 metre. Among different age groups Juveniles are more (43.52%) followed by sub adults (21.17%), adults (16.47%) and yearlings (7.05%). Age group is unknown for 11.76% individuals. Among the study Ranges Upper Barakamuda Range hosts highest (52) number of mugger crocodiles followed by Karanjia Range (12), Nawana South Range and Jenabil Range (9), Nawana North Range (3) and no crocodile is observed from Chahala Range and National Park Range (figure-1). The distribution map of Mugger crocodiles in Similipal Tiger Reserve is shown in figure-2.

Conclusion

In similipal, Survey of the crocodile showed that the population was 85 during 2011. Although the reasons for the extinction of mugger from similipal were not clear, one author cited (Anon⁵) cites adverse factors such as i. Fishing using explosives and nylon nets ii. use of DDT and other insecticides with an intention to control malaria. iii. Fires on the river bank damage the nesting sites, iv. natural affects of activities such as predation and or exhuming of mugger nests by wild boar and monitor lizard. 812 individuals of mugger crocodile have been released in various phase in the river systems of similipal from 1981. Apart from some individuals released in the rivers in core area like east deo and west deo. Most of the others have dispersed widely some migrating far down stream into plain area in search of suitable habitats. Thus, most of these are sighted only sporadically during the census period. Except for the census conducted periodically during summer season there has been no sustained long-term monitoring programme to look into ecological parameters like habitat use, movement patterns, territoriality, prey selection and breeding success of these crocodiles all of which are crucial in understanding the real impact of the rear and release programme in the sustained conservation of *Crocodylus palustris* in similipal.

Table-1
Distribution of Mugger crocodiles in different Rivers of Similipal Tiger Reserve

Name of the River	Size of crocodile					Total
	<1mtr	1 to 1.5mtr	1.51 to 2 mtr	>2mtr.	Without size	
West Deo	2	27	16	14	5	64
Khairi	2	3	1	0	0	6
East Deo	2	1	0	0	0	3
Khadkei	0	3	1	0	5	9
Budhabalanga	0	1	0	0	0	1
Palpala	0	2	0	0	0	2
Total	6	37	18	14	10	85

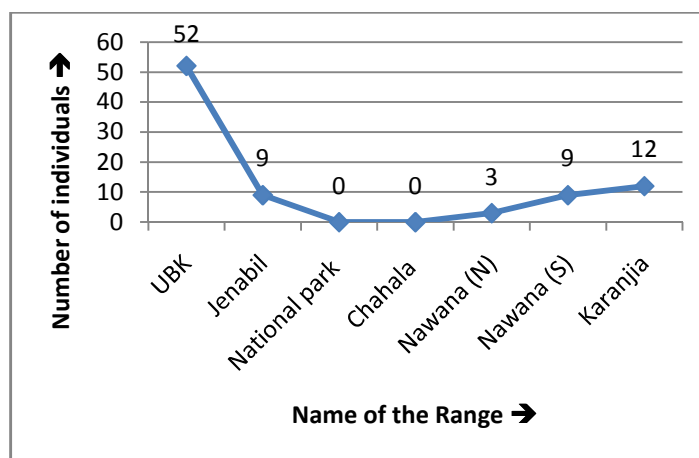


Figure-1
Distribution of Mugger crocodiles in different Ranges of Similipal Tiger Reserve

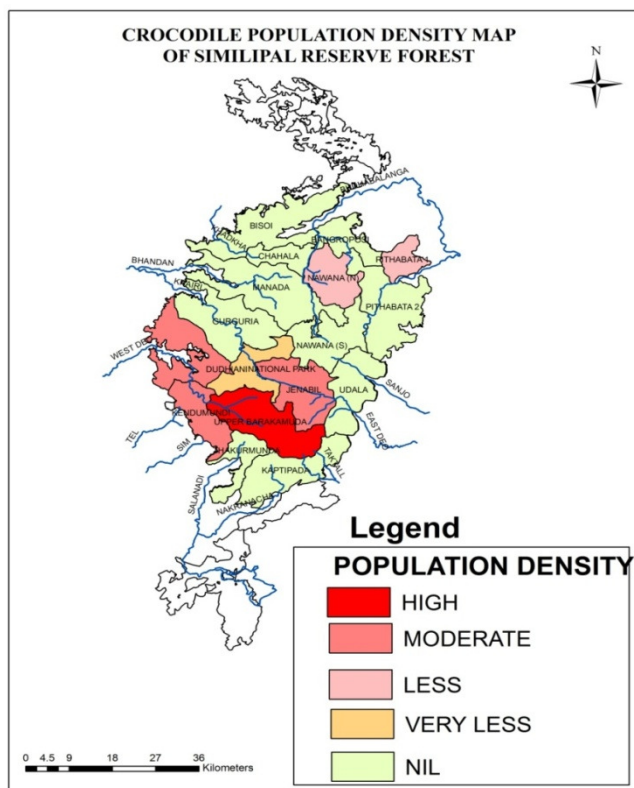


Figure-2
Distribution map of Mugger crocodiles in Similipal Tiger Reserve

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