

Case Studies on Direct Sighting of Two Big Cats Tiger (*Panthera tigris*) and Leopard (*Panthera pardus*) in the Core Area of Similipal Tiger Reserve, Odisha, India

Sandeep Ranjan Mishra and H.K. Bisht

Similipal Tiger Reserve, Baripada, Mayurbhaja, India

Abstract: The three years 2006, 2007 and 2008 sighting records of two big cats, Tiger *Panthera tigris* and Leopard *Panthera pardus* were compiled and analysed from all seven Ranges such as Upper Barakamuda (UBK), Jenabil, Chahala, National Park, Nawna North, Nawna South and Pithabata of core area of Similipal Tiger Reserve. It was found that tiger sighting is highest (76.1%) than leopard sighting (23.8%) in the core area of Similipal Tiger Reserve. Out of seven Ranges a total number of highest sighting of the big cats occurred in UBK (29, 43.28%) followed by Jenabil (11, 16.41%), Nawna North (9, 13.43%), Nawna South (6, 8.95%), Chahala (5, 7.46%), National Park (4, 5.97%) and Pithabata (3, 4.47%). Highest number of sightings observed in the year 2008 (30 sightings, 44.7%) followed by 2007 (20 sightings, 29.85%) and 2006 (17 Sightings, 25.37%).

Key words: Ranges • Core area • Similipal Tiger Reserve • Tiger • Leopard

INTRODUCTION

Tiger *Panthera tigris* has been an important flagship species for biodiversity and wildlife conservation in India over the past thirty years [1]. The Royal Bengal tiger *Panthera tigris* is categorized as Endangered on the IUCN Red List (IUCN, 2008) and listed under Schedule-I of Wildlife (Protection) Act, 1972 in India and Appendix-I of the CITES. Leopard *Panthera pardus* is also included in the Schedule- I of the Indian Wildlife Protection Act, 1972 and is placed under Least Concern category of 2002 IUCN Red List of threatened animals. Tiger is the most threatened large carnivore in India [2]. Tigers are under threat mainly due to habitat loss, depletion of prey population and direct killing [3]. Threats to its survival appear to have increased in recent years due to widespread overhunting of its prey [4, 5], poaching of tigers for commercial reasons [6, 7] and from habitat destruction [8]. Combined with slackening efforts for socio-political reasons [9]. Population estimation of carnivores is extremely difficult owing to an extensive spatio-temporal distribution, Secretive life, Wide ranging behaviour, low detectability and low densities [10]. The problem of animal population sampling are the inability to survey the entire area of interest and the

inability to detect all individuals even within the surveyed area [11, 12]. Similipal Tiger Reserve is one of the largest Tiger Reserves of India with an area of 2750km² with core area 1194.75km². The analysis of direct Sighting records by different forest staffs at different times is important to know the status and distribution pattern of these two large cats in the Core area of this Tiger Reserve which is one of the UNESCO recognised Biosphere Reserve and natural Heritage in the world.

Study Area and Methodology: 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 Meghashini (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 Burhabalanga, Palpala Bandan, Salandi, Kahairi 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

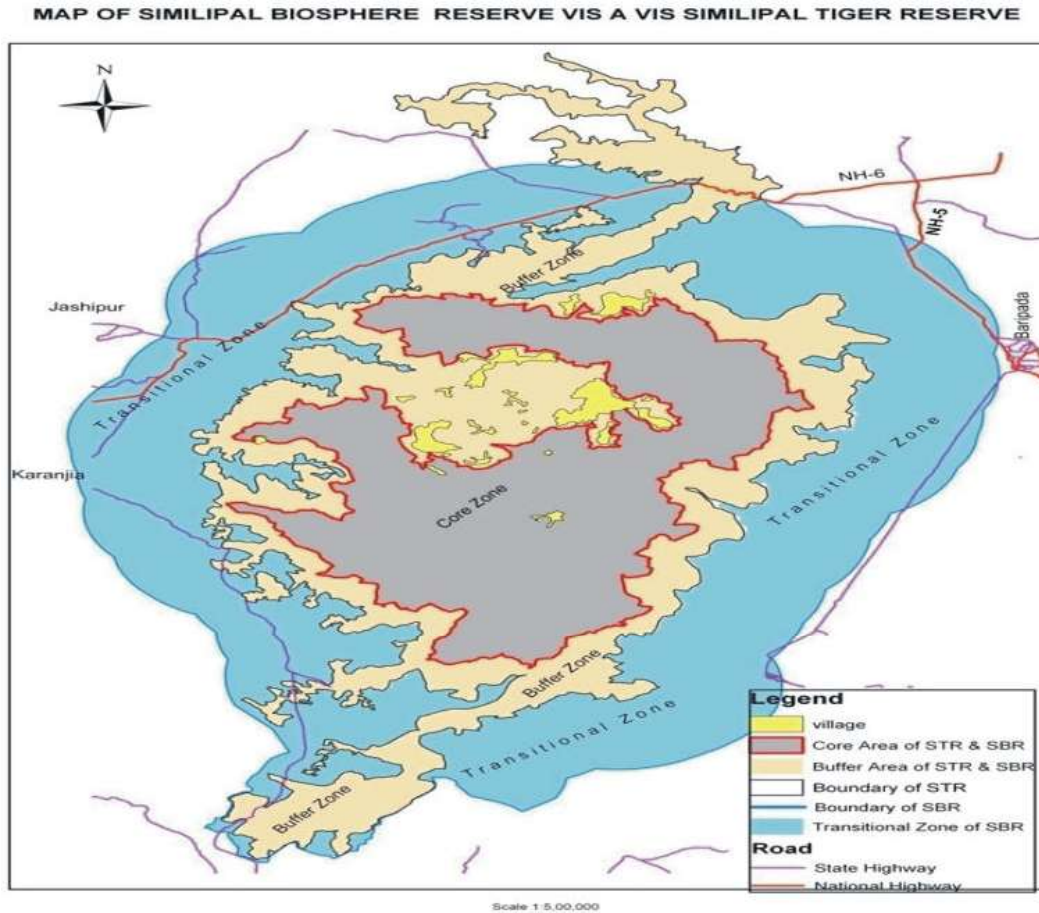


Fig. 1: Map of Similipal Tiger Reserve

birds, 60 species of reptiles, 21 species of frogs, 60 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 and sighting records of all these Ranges are considered.

Direct sighting incidents are recorded by the forest staffs inhabiting in the core areas. These information is collected from Forest Department, Similipal Tiger Reserve for analysis and comparative study.

RESULTS AND DISCUSSION

The sighting records of three years 2006, 2007, 2008 are collected from all the seven Ranges such as Upper Barakamuda (UBK), Jenabil, Chahala, National Park, Nawna North, Nawna South and Pithabata of core area of Similipal Tiger Reserve. Total sightings of tigers and leopards in the above mentioned years from the above mentioned Ranges are 67 out of which 51 (76.1%) are tiger sighting and 16 (23.8%) are leopard sighting. Leopard

sighting in the core areas is less than tigers because leopards prefer periphery areas to sustain than core areas due to presence of high competitor tiger in the core areas.

Out of seven Ranges a total number of highest sighting of the big cats occurred in UBK (29, 43.28%) followed by Jenabil (11, 16.41%), Nawna North (9, 13.43%), Nawna South (6, 8.95%), Chahala (5, 7.46%), National Park (4, 5.97%) and Pithabata (3, 4.47%). This is because UBK Range is present at the South part of the core area of Similipal Tiger Reserve and all types of habitats including meadows and ecotones & prey species are observed in this Range. Therefore in all the years highest number of tiger sighting found in UBK Range in comparison to other ranges. Highest number of sightings observed in 2008 (30 sightings, 44.7%) followed by 2007 (20 sightings, 29.85%) and 2006 (17 Sightings, 25.37%). The detail observation on sighting of big cats (tiger and leopard) in core area of Similipal Tiger Reserve in the above mentioned years are given in Table 1 and Figure 1. Species in the above three years are given below:

Table 1: Sighting record of Big Cats in the core area of Similipal Tiger Reserve

| Year | Sighting of Big Cats | | Ranges | | | | | | | |
|-------|----------------------|-------------|-----------|---------|---------|---------------|-------------|-------------|---------|-------|
| | Tiger (T) | Leopard (L) | Pithabata | Chahala | UBK | National Park | Nawna North | Nawna South | Jenabil | Total |
| 2006 | 14 | 3 | T-2 L-1 | T-1 | T-5 L-2 | T-2 | T-1 | T-1 | T-2 | 17 |
| 2007 | 16 | 4 | – | L-1 | T-8L-1 | T-1 | – | T-3 | T-4L-2 | 20 |
| 2008 | 21 | 9 | – | T-3 | T-11L-2 | T-1 | T-4L-4 | L-2 | T-2L-1 | 30 |
| Total | 51 | 16 | 3 | 5 | 29 | 4 | 9 | 6 | 11 | 67 |

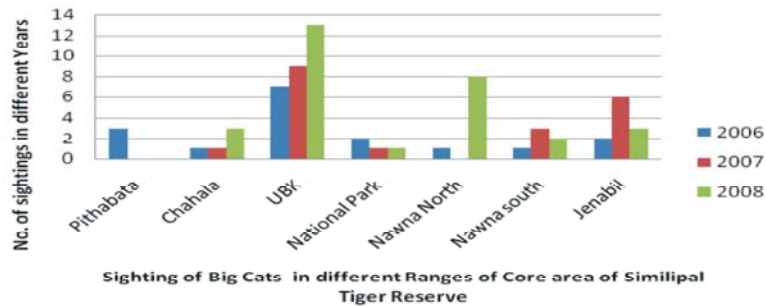


Fig. 2: Range wise sightings in different years

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