Vol X 2020

ISSN : 2250-2653

RESEARCH FRONTS

A Peer Reviewed Journal of Multiple Sciences, Arts & Commerce

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ISSN : 2250-2653

A Peer Reviewed Journal of Multiple Sciences, Arts & Commerce

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Published by:

Government Digvijay P.G. Autonomous College, Rajnandgaon. Chhattisgarh 491 441 (India)

Printed at :

Naveen Sahakari Press Maryadit, Rajnandgaon (C.G.)

Contents

From the Desk of Chief Editor . . .

I feel a sense of relief with the publication of **Research Fronts** (A Peer Reviewed Journal of Multiple Sciences, Arts and Commerce) **Vol. X 2020** in this Covid-19 Pandemic situation world-wide. As usual, a few notable features of this volume are as follows. **One**, it has maintained the diversity of research papers encompassing the disciplines of economics, geography, business management, library science and zoology. **Two**, Inclusion of research papers from Gujarat (Western India), Madhya Pradesh & Chhattisgarh (Central India) and West Bengal (Eastern India) amply demonstrates a wide spatial coverage that gives it status of national journal. **Three**, the issue of core and periphery, though applied for the major tribal languages by taking up the Chotanagpur and Its surrounding region, would attract researchers from other disciplines to venture in this direction. **Four**, Man-wild life interaction, or conflict, or co-existence is a very pertinent issue addressed in a research paper entitled Tiger Roaming for Survival – A case study of Rajnandgaon district, Chhattisgarh, India.

I take an opportunity to appreciate the authors who have made invaluable contributions not only for sending their original research papers, but also for directly helping the regular publication of this journal since 2011.

- Dr. Krishna Nandan Prasad

TIGER ROAMING FOR SURVIVAL

A CASE STUDY OF RAJNANDGAON DISTRICT , CHHATTISGARH (INDIA)

Sanjay Thiske[1] and Pramod Kumar Mahish[2]*

[1]Department of Zoology, Govt. Digvijay Autonomous PG College Rajnandgaon (C.G.)

[1]Department of Biotechnology, Govt. Digvijay Autonomous PG College Rajnandgaon (C.G.)

*Corresponding Author Email : *drpramodkumarmahish@gmail.com*

Abstract

An adult male tiger was spotted near Rajnandgaon which was found roaming around Rajnandgaon, Durg and Balod district of Chhattisgarh state. The natural habitats of tiger near Rajnandgaon are Tadoba Tiger Reserve, Kanha Tiger Reserve and Indravati Tiger Reserve. From its natural habitat tiger migrated to the semi urban area of Rajnandgaon. Food, finding own roaming area and finding of couple should be the reasons of its migration and roaming. Conflict was also observed during its roaming. Risk of poaching and man-tiger conflict is major concern of tiger roaming in the area.

Keywords – Tiger roaming, Rajnandgaon, Risk of poaching, Tiger habitat

Introduction

There are about 2967 tiger in India which is 70% of the worlds population according to the All India Tiger Estimation (WWF India 2019). The tiger (*Panthera tigris Linnaeus*, 1758) is the cat species of genus Panthera. The tigers are endengered as per the red list of IUCN (Goodrich, 2015).

Inside woods territories, tigers firmly favored locales that are farther from water bodies, higher in elevation, farther from edge, and nearer to centroid of enormous backwoods block; and unequivocally favored destinations with thicker understory cover, lower level of aggravation, higher height, and more extreme incline (Sunarto et al., 2012). Decrease in the tiger forest area is observed over the period. Jain et al (2020) has been

reported a wrost disturbance of tiger area in Sariska Tiger Reserve of Indian tropical forest. Similarly land-cover change and landscape fragmentation was observed in Tadoba Andhari Tiger Reserve, India (Nagendra et al., 2006). Apart from the space issue Tigers continue to face unprecedented threats to their existence due to poaching, habitat loss, habitat fragmentation, reduction in genetic diversity and anthropogenic disturbances (Tyagi, 2019). Solitary life, and large individual home ranges are also some concern of tiger survival. A list of habitat loss of tiger protected area is presented in the table 1.

The tiger has gotten progressively imperiled, and out of the nine putative tiger subspecies, three (Javan, Balinese, and Caspian) have gotten terminated over the most recent 100 years (Yamaguchi et al., 2013). We are among the fastest growing population, the UN estimate 1.64 biollion population of India by 2050. Protected areas of India cover 156,700 square kilometers (60,500 sq mi), roughly 4.95% of the total surface area. However these area are protected but much more influenced by anthropogenic activities like collection of resources for the survival, not timber forest products and area for the grazing of livestock. It leads to the disturbance of wild animals including tiger to avoid the presence of human. Fearness of poaching, roaming, reducing reproduction and food availability are the some major concern facing by tigers when anthropogenic activity are there in the natural habitate (Ciuti et al., 2012; Hussain et al., 2016).

Loss of habit and anthropogenic influence are the major causes of man tiger conflict. Man tiger conflict was observed in Kerinci Seblat National Park, Sumatra, Indonesia due to the co-existence between human and tiger (Nugraha and Sugardjito, 2009). More than 150 causality has been recorded (only in 2003-2005) from the Satkhira area of Sundarbans Reserve Forest due to co existence and anthropogenic richness in tiger protected area in Bangladesh (Neumann-Denzau aand Denzau, 2010). Singh et al., (2015) uses molecular methods like DNA fingerprinting to understand the human tiger conflict in Terai-Arc Landscape of Corbett Tiger Reserve India.

Review of literature

Notwithstanding, the order of metropolitan environment is moderately new and one that is going through quick development. All natural life in metropolitan zones will

collaborate with people somewhat (Soulsbury and White, 2015). Land acquisition for the urbanization and future governance was observed in the tiger roaming area of Combodia (Debonne et al., 2019). Sunarto et al., 2012 investigated the tiger-habitat relationships using systematic detection, non-detection sign surveys in central Sumatra forest. Tigers and people coexistence occurs in the multiple-use forests of the island of Sumatra, Indonesia. Man tiger conflict was continuously reported from the area (Nyhus and Tilson 2004). Anthropogenic disturbance in 12 habitat fragments across San Diego County, California was reported by Nicholls et al., (2008).

In his book, George B. Scalar(1967) studied in detail the behavior of the quadrupeds. According to Scalar, quadrupeds go a long way in hunting. During the research, he observed that a tiger usually travels several miles from its range in search of prey. During the research, he observed that a tiger usually travels several miles from its range in search of prey and if it fails in hunting it increases further and the tiger is about 14 to 31 or 10 to 20 miles distance covers. The Tiger is very powerful and good sprinters. Dr. Schlaer give very important information about tiger. A tiger usually needs to reach a range of about 9–24 m (30–80 ft) of prey before it can run to successfully bring down the prey.

Another important feature of a tiger is its good swimmer which makes him the best hunter. It is cross rivers 6-8 km (4-5 mi) wide (Mazák 1981). Tigers have been seen cross the see and cover distance of 11 k.m. approximately 7 mils.(Thapar 1981,86,92,99, 2004). They are mastered in the art of climbing and leaping, and they climb trees in search of prey and on trees with heavy prey, the best example of this is the cheetah. An example of such art was seen when Bangladesh came under severe floods in 1979 and it was seen that many tigers saved their lives by taking shelter on trees. Surprisingly these tigers are 5 ks 4 m approx 16 se 20 feet climbed on tree.

Table 1: Habitat loss of the tigers in protected area worldwide

S. No.	**Area**	**Type of loss**	**Tiger type**	**Reference**
1	Kerinci Seblat National Park	Habitat destruction	Sumatran tiger	Linkie, et al., 2003
2	Chitwan National Park	habitat loss and	Bengal tiger	Carter et al.,

		degradation		2013
3	Sundarbans, coastal Bangladesh	Habitat loss	Bengal tiger	Mukul et al., 2019
4	Peninsular Malaysia	habitat loss	Malayan Tiger	Shevade et al., 2017
5	northeastern China and Russia Far East	Poaching, habitat degradation, habitat loss, and habitat fragmentation.	Amur Siberian Tiger	Yu et al., 2011
6	Tadoba Andhari Tiger Reserve, India	Deforestation, forest fragmentation	Bengal tiger	Nagendra et al., 2006
7	Nameri Tiger Reserve (NTR) Assam, India	Deforestation, forest fragmentation	Bengal tiger	Saikia et al., 2013

Case study of Rajnandgaon

Possible habitat of tiger

The habitats of tiger near Rajnandgaon are Tadoba Tiger Reserve of Chandrapur, Maharastra, Indravati Tiger Reserve Bastar, Chattisgarh and Kanha Tiger Reserve, Mandla and Balaghat, Madhya Pradesh (Figure 1). These reserves are about 150km from Rajnandgaon. The forest official expected that tiger strayed into Rajnandgaon district from either Tadoba Andhari Tiger Reserve Maharashtra or Indravati Tiger Reserve.

Roaming area

After its entrance, the tiger found roaming in the three districts of Chhattisgarh Rajnandgaon, Durg and Balod. The tiger was first spotted in Manghata district rajnandgaon then roaming towards south east and lastly spotted at Gurur forest district Balod after 15 days. The tiger spotted in various locations is listed in the table 2 and tiger spotted in manghata is presented in figure 2 and 3.

Table 2: Roaming area of tiger in Rajnandgaon, Durg and Balod district

S. No.	Area where tiger was spotted	Geographical Location	District	Conflict	Spotted by	Identification

1	Manghata	21°12'12.8"N 81°09'51.2"E	Ranjandgaon	No incident	Forest Guard	Live
2	Achhoti	21°19'10.0"N 81°28'19.4"E	Durg	Killed a Cow	Villagers	Conflict
3	Latabod	20°47'22.7"N 81°14'47.8"E	Balod	No incident	Villagers	Pugmarks and Barking
4	Gurur	20°41'48.3"N 81°23'19.0"E	Balod	No incident	Villagers	Pugmarks

Reasons

The reason for the roaming of the tiger is half expected that it was a male tiger searching for female one. Food should be another reason of its migration from natural habitat. The individual roaming area of existing tiger do not allow another one therefore migration is very natural for the finding of own roaming area.

Roaming history

The forest official confirms its roaming history that it was the same tiger observed in 2014 near Rajnandgaon.

Risk of Poaching

The tiger roaming around semi urban area have a high risk of poaching because of the massive demand of its skin and various organs in national and international illegal market.

Risk of conflict – in the present case tiger migrated from its natural forest habitat to the semi urban which makes a possibility of man- tiger, other animal to tiger conflict. Conflict is observed at Achoti village where the roaming tiger killed a cow.

Figure 1: Natural habitat of Tigers and roaming of among one in Rajnandgaon and surroundings. A – Kanha Tiger reserve, MP; B – Tadoba Tiger reserve, MH; C – Indravati Tiger reserve; a – Tiger spotted at Manghata, Rajnandgaon; b - Tiger spotted at Achhoti, Durg; c - Tiger spotted at Latabod, Balod and d - Tiger spotted at Gurur, Balod

Figure 2: Live identification of tiger in Manghata, district Rajnandgaon

Figure 3: Pugmark of the roaming tiger

Discussion

The movement and encroachment of tiger has increased in rural and urban areas. The ever increasing encroachment of human population in the forest area, the ever increasing cultivation area in the rural areas, unusual changes in the weather, the destruction of the natural habitat of the wild animals and the natural habitat built for the protection of the wild animals in many areas, they create ideal conditions to increase their own population, some important reasons that force tigers and other wild animals to migrate in the populated areas. Such incidents not only build a threat to the existence of tigers but are also harmful to the general public. Presently the national animal tiger of our country is facing some similar unusual situations. This thing can be understood from a similar unusual event that happened in Rajnandgaon.

Conclusion

After analyzing the facts mentioned in the present study, it was revealed that the Maharastra border region, the forested area of Kanha Kisli and Rajnandgaon district comes under the buffer zone. So it may be a common occurrence for some tiger to come in for a few kilometers. But after taking a long distance, entering the semi urban area is not common. It shows that the tiger is looking for the food resource, and Chasing prey

must have entered Rajnandgaon district. Tigers travel long distances is not a good sign for wild life. For this type of incidents not to recur, more detailed research is needed in the matter of animals conservation, so that wild animals can be safe in the forests.

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