

Man-tiger interaction in the Bangladesh Sundarbans

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Abstract

A study was conducted on the man-tiger interaction in the Bangladesh Sundarbans. The study was based on the records registered by the Bangladesh Forest Department and field visits between January 1999 and June 2001. A total 401 people (about 24 people per year) was killed by the tigers whereas 41 tigers (about 3 tigers per year) were killed by humans during 1984 to 2000. From January 1999 to March 2000, a total of 6 tiger were killed by humans. Most people were killed in the Burigoalini (45%) and Sarankhola (24%) ranges. Fishermen (44%), woodcutters (36%) and honey collectors (18%) comprised the bulk of tiger victims. Age groups of 26-35 yrs (38%) and 36-45 yrs (30%) were most vulnerable for tiger attacks in the Sundarbans. Most of the respondents (95%) of the questionnaires believed that the Sundarbans is an ideal habitat for the tiger whereas more than 75% respondents wanted to conserve tiger in its natural habitat in the Bangladesh Sundarbans. About 50% respondents had no idea about the Bangladesh Wildlife (Preservation) (Amendment) Act, 1974 and more than 45% feel that Bangladesh Forest Department should be better equipped for tiger management in the Bangladesh Sundarbans.

Key words: Bengal tiger, human, interaction, the Sundarbans.

INTRODUCTION

The Bengal tiger, *Panthera tigris tigris* in the Sundarbans has a particularly nasty reputation throughout the world as a proven man-eater (Mountfort 1969). These tigers are popularly branded as hereditary man-eaters (Chakrabarti 1992). Such a reputation does little to endear the animal to the people who live in and around the Sundarbans, which ultimately foster the conflict situation between the two parties. This conflict between man and tiger dates back a very long time in the Bangladesh Sundarbans (Blanford 1891). There was a time when with the abundance of tiger throughout Bangladesh, the animal was hunted in large numbers by the *Maharajas*, sportsmen and the hunters (Ahmed 1981). Since then, with the loss of forest and prey species, tiger numbers have declined both in range and number. During the beginning of this century, the population of this national animal of Bangladesh was found to be drastically reduced, and nationally categorized as *Critically Endangered* (IUCN Bangladesh 2000). Hence, the conflict between man and tiger that once used to be widespread and prevalent across much of the country, which is today confined to just one area - the Sundarbans. In this conflict, both man and tiger have lost their lives at regular intervals, which seem to be no respite for either species. So, the present study on the man-tiger interaction in the Sundarbans assumes to be important in this context.

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No single animal species is known to influence the life-style of people anywhere in the world to such great extent as the Bengal tiger in the Sundarbans. This extraordinary animal has shaped the social ecology of a region in a way that is without a parallel in the history of man-animal interaction. The tiger in the Sundarbans provides a unique example of an animal's endurance and its adaptability to the rigors and hazards of nature. Hence, the current study mainly aims to keep aware of the country people about the current conflict situation between man and tiger in the Bangladesh Sundarbans, and to investigate the local people's perception about the Bengal tiger and conservation in the Bangladesh Sundarbans.

STUDY AREA

The whole Sundarbans, an area of one million hectares, is the largest mangrove forest in the world. About 62% of this forest lies in the southern districts of Bangladesh and the rest 38% lies in the south-east of West Bengal in India (Choudhury 1968, Islam *et al.* 1999). The total area of the Bangladesh Sundarbans is about 5,770 km² of which 4,016 km² is land and the remaining 1,756 km² are under water in the form of rivers, canals and creeks (Hussain and Karim 1994). The Bangladesh Sundarbans represents 44% of the total forested area of the country, which comprises 45% of the country's total forest revenues. At present, there are 3 wildlife sanctuaries inside the Bangladesh Sundarbans to protect the fragile ecosystem. The total area of these 3 sanctuaries is 323 km². Additionally, in order to draw global attention, this fragile ecosystem was recently declared as a World Heritage Site. The total area of the World Heritage Site is 1400 km². Curtis (1933) divided the entire Sundarbans into three saline zones, e.g. slightly saline zone consists of Chandpai-Sarankhola range, moderately saline zone consists of Khulna range and strongly saline zone consists of Burigoalini range. Much of the man-tiger conflict is centered around the strongly saline zone of Burigoalini range and is not spread widely across the mangrove forests (Rashid *et al.* 1994). There are areas such as Chandpai and Sarankhola are noted for their man-eating tigers. There are several other areas in the Bangladesh Sundarbans where such tiger depredation is rare or non-existent.

MATERIALS AND METHODS

The present study was based on the records registered by the Bangladesh Forest Department and field visits in the Sundarbans. Bangladesh Forest Department maintains a registry book where all incidents are being recoded. During the present study, 17 years (from 1984 to 2000) records were collected and analyzed. Besides these, some local informer from the adjacent villages of the mangrove forest supplied valuable information regarding human deaths or injury in the mangrove forest and also about tiger poaching. Moreover, on hearing any news published in the newspaper, regarding tiger killed by man or vice-versa, the area was visited and recorded all available information. All available data were analyzed through various computer models and decisions were taken upon those results. Questionnaire survey and participatory learning appraisal (PLA) techniques were applied to investigate the local people's perception about tiger, its ecology, management and conservation status in the Bangladesh Sundarbans. PLA was conducted

during social discussions and casual conversation with their companions. During this time, general information was collected on their perceptions about the traditional beliefs, myths, taboos related to the tiger in the Sundarbans. For this purpose, a questionnaire format was developed and used during the survey.

RESULT AND DISCUSSION

Man-tiger conflict

Man-tiger conflict study revealed that a total of 401 people was killed by the tiger between 1984 and 2000. The average human death rate was about 24 people per year, but in a publication of the Sundarbans Forest Division, Dey (2001) mentioned that the man death rate was 20 people per year. From 1984 to 2000, 41 tigers were killed by human (Fig. 4). On an average, about 3 tigers were killed by human every year. Again, this is an official figure; the actual figure of tiger killing may be several times higher than these. Very limited number of tigers in the Sundarbans are man-eaters, of which only a few are obligate man-eaters (Reza *et al.* 2000). Moreover, established man-killer are declared as man-eater and killed by the Forest Department. The Forest Department declared 4 as man-eater tigers between 1981 and 1992 in the Bangladesh Sundarbans and subsequently killed by them. From January 1999 to March 2000, a total of 6 tigers were killed, which were not declared as man-eaters (Table 1).

Table 1. Tigers killed (only those were reported) by humans between January 1999 and March 2000

Tiger killed	Place of killing	Killer	Date/ Month	Punishment for poaching	Information source
1	Burigoalini under Satkhira Range	A Major in the Bangladesh Rifles	August, 1998	No punishment	Local people and the killer, also in newspaper (The Daily Star, July 2, 1999)
1	Bogi under Sarankhola Range	2 forest officials, Bangladesh Forest Dept.	November 6, 1998	Arrested by Bangladesh Police and suspended from the Dept.	TIGERLINK, <i>News</i> , Vol. 5, No. 1, January 1999, Ranthambhore Foundation, New Delhi, India. 31 p.
1	Khasiabad under Khulna Range	Unknown; wounded in a trap and found dead	May 19, 1999	Not known (possibly a case was filed by the Station Officer)	A.K.M. Mohiuddin, Station Officer, Khasiabad Forest Station, Khulna Range. Reported on 27.09.99
1	Datinakhali under Satkhira Range	Local poachers supported by a political leader	First week of June, 1999	No report of punishment	Newspaper (The Daily Star, July 2, 1999)
1	Katakhalhi under Chandpai Range	Villagers	July 22, 1999	No report of punishment	Local people and Newspaper (The Daily Observer, Ittefaq, Sangbad, Muktokantho, Janokantha, etc July 24, 1999)
1	Ashirsina under Chandpai Range	Local poachers	August 2, 1999	Brought a law-suit by the Station Officer of Chandpai Forest Range	Local people and newspapers (The Daily Muktokantho, Prothom Aalo, August 4, 6; 1999)

Among the four existing forest ranges of the Sundarbans Forest Division, the conflict between man and tiger was highest in the Burigoalini range (45%) and lowest in the Khulna range (9%) (Fig. 1). Burigoalini range, where the man-tiger conflict is highest, is situated in the western corner of the Bangladesh Sundarbans. Here, the Sundarbans mangrove forest is the next-door neighbour of the villagers. Everyday the people from the adjacent villages enter into the forest to collect the natural resources for their livelihood. Many of them enter into the reserve forest illegally. These people are not much aware of the tiger attack, which may be one of the major causes of such conflict. Salinity is supposed to be another major cause of being man-killer in this area, as the area is situated in the highly saline zone (Siddiqi and Choudhury 1987). In this area, the vegetation of the forest is different from the eastern portion of the Sundarbans. As a result, the populations of the main prey species of tiger, the spotted deer and the wild boar, are not so healthy as compared to the eastern portion of the forest.

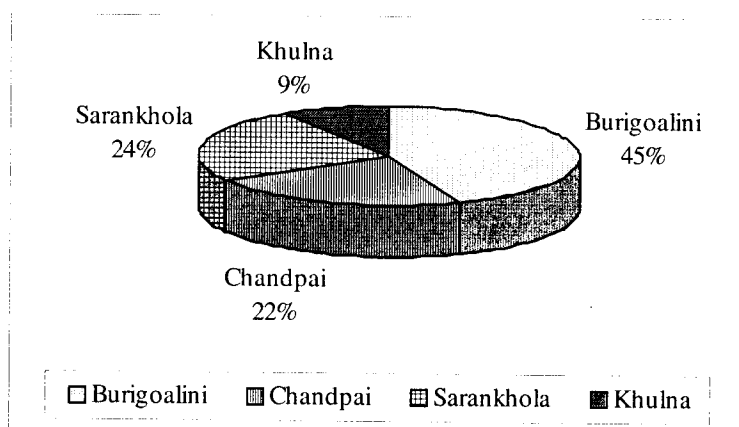


Fig. 1 People killed by the tigers in four forest ranges of the Sundarbans during 1984-2000

Eight types of occupational people were identified who regularly enter into, or live nearby, the Bangladesh Sundarbans. This study revealed that people from certain professions were at a higher risk than the others. During 1984 to 2000, among all other professions, the fishermen (44%) were the main tiger victims, followed by the woodcutters (36%) and honey collectors (18%) (Fig. 2). Fishermen, woodcutters and honey collectors constitute the bulk of the permit holders, who enter into the forests in pursuit of forest products and resources. These people think that it is their professional fate and there is no alternative solution to avoid the conflict. Therefore, it is their job to enter and collect the natural resources from the forest to meet their daily livelihood needs as they inherit it from their parents or ancestors.

The tiger victims were divided into 7 age groups. The most likely victims were people aged between 26-35 years (38%) followed by 36-45 years (30%) (Fig. 3), possibly because people in these age groups have become more daring about their safety.

Supernatural qualities are attributed to man-eaters and tiger attacks are accepted as professional hazards. In fact, there are elaborate rituals to ensure co-existence. A persist accompanies the workers to the forest and invokes the blessings of the Banbibi – the principal folk deity and tiger Goddess of the forest – as well as blessings from Dakshin Rai, Gazi Saheb, Narauani Ma, Kalukhan and Sha Jungli to obtain immunity from tigers, crocodiles, snakes and other creatures (Chaudhury and Choudhury 1994).

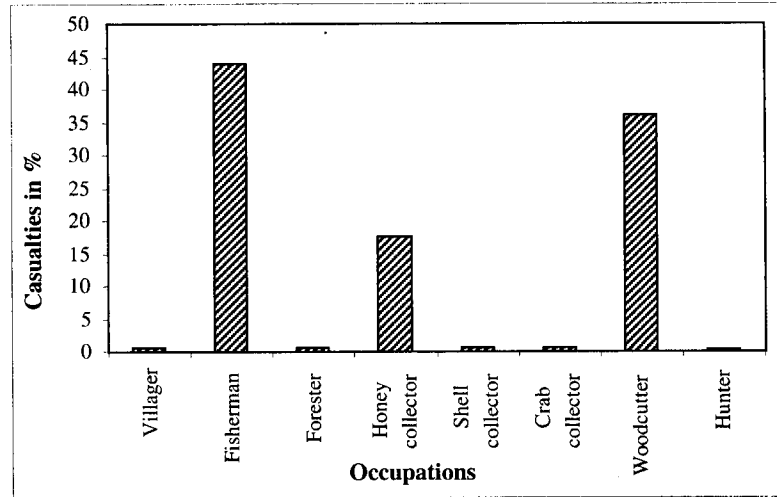


Fig. 2 People of different occupation killed by the tigers in the Sundarbans during 1984-2000

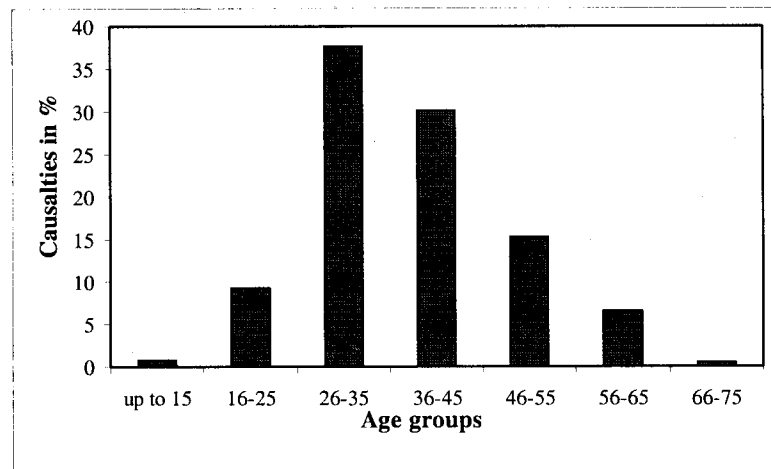


Fig. 3 People of different age group killed by the tigers in the Sundarbans during 1984-2000

We need to identify the causes of tiger depredation if we are to come out with the appropriate measures for the mitigation of this continued conflict between man and tiger. Tigers in general are shy animals that hunt in the night using the sense of smell. Unlike the lion they are not social animals that hunt in pride (Krebs and Davies 1992). Therefore, hunting is an extremely energy-expending process, and the tiger uses its acute sense of smell plus its stealth in capturing its prey. The prey species of tiger in the Sundarbans mainly comprise of spotted deer and wild boar and also include rhesus macaques, monitor lizards, birds, crabs and fishes (De 1990). The prey animals too are well equipped to escape the tiger predation. Therefore, any opportunity to attack sluggish/easy to capture prey is exploited by the tiger. Hence, humans may be easy prey for the tigers.

Furthermore, as a tiger gets older, his teeth drops and the animal find capturing the fleet-footed prey extremely difficult. It is in such situations that the tiger may turn as man-eater since attacking human beings especially those who are either defenseless or fast asleep is relatively easy. The problem is further exacerbated by the fact that thousands of fishermen, woodcutters and honey collectors enter the mangrove forests inhabited by the tiger in the Sundarbans. It is this category of forest exploiters that fall victim to tiger attacks.

People's perception about tiger

A total of 111 sets of responses was obtained which covers people from all local communities (e.g. grasscutters, woodcutters, fishermen, honey collectors, shell collectors, businessman, tourists, farmers, forest officials, etc.). The Sundarbans is the only forest in Bangladesh where there is no permanent settlers. So, it was very difficult to get more respondents. It is notable that this questionnaire survey was conducted among 111 people, all of which were men, because with the exception of very few female tourists, there were no women engaged in activities in the forest. All the respondents were divided into six categories, *viz.* grasscutters, woodcutters, businessman related to forest products, farmer and day labour, tourists and forest officials. Among the 111 respondents, the forest officials were the highest (32%) followed by the grasscutters (19%).

Tiger sightings and activity hours

It appeared from the study that the grasscutters encountered tigers (67%) more frequently followed by the farmers and day labourer (47%). Though the tigers are the main attraction for the tourists in the Sundarbans, but they could not observe (100%) any tiger. More tiger sightings occurred in the morning (between 0600 and 1000 hrs) (52%) and evening (between 1400 and 1800 hrs) (31%). The study revealed that the tigers are more active either in the morning or in the evening.

Knowledge about breeding season, habitat quality and medicinal value of tiger parts

The monsoon (45%) and winter (31%) are the breeding seasons for the tiger in the Bangladesh Sundarbans according to the respondents of the survey whereas 24% had no idea. More than 60% respondents mentioned that for hunting the prey and also the humans, the tigress was more active than the tigers whereas 27% people believed that both tiger and tigress were equally active for hunting. Most of the respondents (95%)

believed the Sundarbans as an ideal habitat for tiger. More than 55% respondents believed that tiger body parts might have some medicinal value.

Conception about the Wildlife Act 1974, Forest Department and tiger conservation

About 50% local people and 17% forest officials had no idea about the Bangladesh Wildlife (Preservation) Act, 1974. Nearly 50% respondents thought that Bangladesh Forest Department should be well equipped and 20% respondents opined that the Forest Department was not so effective for the overall management of the mangrove forest. More than 75% respondents did not think that the tiger as an enemy and wanted to conserve the species in the Sundarbans. About 23% respondents felt it a threat to their lives and did not want to conserve it.

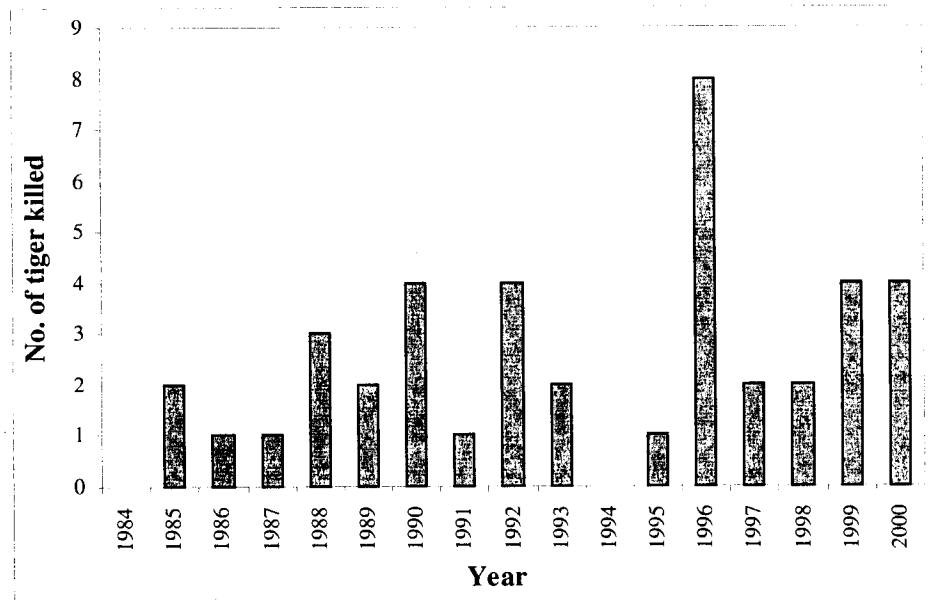


Fig. 4 Tigers killed by humans (only those were recorded) in and around the Sundarbans between 1984 and 2000

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