

Habitat preference of the Bengal Tiger, *Panthera tigris tigris* in the Sundarbans

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Abstract

A study was conducted in Katka-Kochikhali of the Sundarbans between January 1999 and March 2000. The major habitat of the study area was categorized into freshwater hole area, sea beach, forest edge, forest, grassland and riverbank. Tiger trails were recorded 47% from the freshwater hole area and 5% from the riverbank. The overall occurrence of tiger trails in different habitat types varied significantly.

Key words: Habitat preference, Bengal tiger, Sundarbans.

The Bengal tiger, *Panthera tigris tigris* (Linnaeus, 1758), is one of the eight subspecies of tiger that occurs in India, Bangladesh, Nepal and Bhutan. Once the Bengal tiger was distributed all over the country, but is now confined to the Sundarbans mangrove forest of Bangladesh. Tigers outside the Sundarbans were shot in the *sal* (*Shorea robusta*) forests of Thakurgaon district in 1956, Bhawal Madhupur tracts in the 70s, in the mixed evergreen forests of Kassalong of the Chittagong Hill Tracts in 1976, and in the forest of Pathalia hills of Sylhet district in 1985. The tigers are surviving only in the Sundarbans mangrove forest of Bangladesh with a viable population. The habitat requirements and preferences of this last tiger population in Bangladesh are not properly known to many of us. So, an attempt was taken to study the habitat preference of the Bengal tiger in a selected site of the Sundarbans.

Sundarbans, the last destiny of the Bengal tiger in Bangladesh, is the single largest chunk of productive mangrove forest in the world. The total area of the Bangladesh Sundarbans is 577,000 ha of which about 401,600 ha is land and the remaining 175,600 ha is under water in the form of rivers, canals and creeks (Karim, 1994). The present study was exclusively conducted in Katka-Kochikhali, which is situated in the Sundarbans East Wildlife Sanctuary. The study area, Katka-Kochikhali, is a sea-facing island of about 20 km²; it is surrounded by the Bay of Bengal in the south, Kochikhali and Jamtala *khal* (canal) in the north, Supoti river in the east and Katka river in the west. The coastline of this island is irregular; as a result, number of tidal creeks are formed and criss-crosses the island. The Katka-Kochikhali is an ideal island that covers diverse habitat types. The

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forest covers about 50% of the total area of the island of which meadows cover 30% and the rest 20% are forest edge, sea beach, waterhole area, riverbank and forest offices.

The study area is reported to be an area with high tiger density (Reza, 2000) and hence, the present study was based on the trails and sign survey method (Rabinowitz, 1993) in the Sundarbans. All the identified tiger trails were recorded and placed on a base map of Katka-Kochikhali. To assess the habitat preference of the Bengal tiger, different habitats of the study area were regularly surveyed to record the available tiger trails. Once recorded, tiger trails were wiped out to avoid duplication.

Between January 1999 and March 2000, a total of 10 trips was made to carry out the fieldwork. A total of 81 days and 744 hours was spent for field data collection during the 15 months, study period. The fieldwork was scheduled in two time blocks between 0600 and 1000 hrs, and 1500 and 1800 hrs because the tiger was the most active during these time blocks (Reza 2000). The whole Katka-Kochikhali area was divided into six categories; i.e. waterhole area, sea beach, forest edge, forest, grassland and riverbank.

The tiger trails survey was conducted on foot at a uniform pace of about 1.5 km/hour. Walking in the different habitats, in a zigzag route, the entire terrain, especially, areas favoured for walking on foot (Nair *et al.*, 1977) such as waterhole area, sea beach, forest edge, forest, grassland and riverbank were traversed extensively. To accumulate maximum field data, one local person served as field assistant. A pair of binoculars (8 X 50) and an SLR camera (Minolta XG-1) with 70-300 mm (Vivitar) zoom lens were used in the field.

A total of 111 fresh tiger trails was recorded from Katka-Kochikhali area of the Sundarbans during the study period. Tiger trails in waterhole area, sea beach, forest edge, forest, grassland and riverbank were varied significantly ($\chi^2 = 24$, $df = 20$). Most of the tiger trails were recorded from the freshwater hole area (42%). Lowest amount of tiger trails (5%) were recorded from the riverbank (Fig 1).

Most of the tiger trails beside the freshwater hole area were recorded during summer (March to July). Even the tiger trails were recorded twice on the same day from the same water hole. In summer from March to July there is dearth water in and around the forest, except in some man-made freshwater holes. The salinity of water and soil of rivers, canals, creeks and sea increased to a level of 650+200 micromhos/cm in March (Nazrul-Islam, 1995). This salinity level during summer is much higher than in any other season in the Sundarbans. The tigers faced drinking freshwater crisis in summer which, could make them come to drink freshwater from the man-made water holes.

The beach area was the second preference (27%) for the tiger (Fig 1). Tigers used to come to the sea beach area frequently, possibly to patrol their territory. Tigers did not go close to the seawater; perhaps used the sea beach as their walking path to patrol and occasionally capture the prey species. Tigers used the forest edge habitat (14%) as the place of defecation. Most of the tiger scats were collected, during the present study, from the forest edge (Reza, 2000). Only 6% tiger trails were recorded from the interior of the

forest (Fig. 1). The tigers use the forest as their walking path very occasionally, because the major portion of the forest become inundated during the high tide.

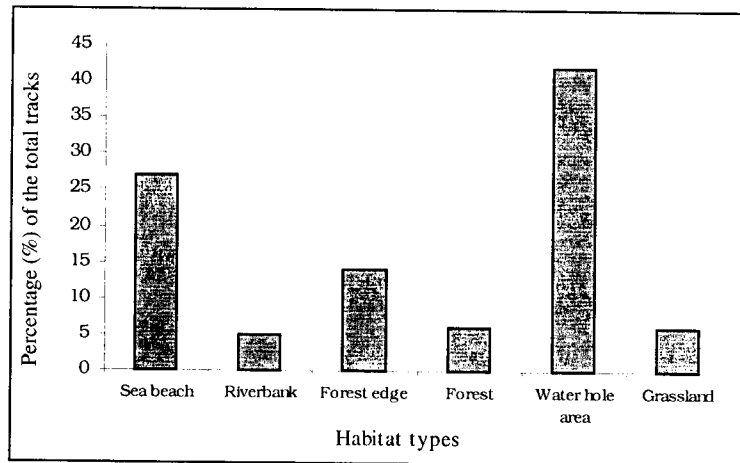


Fig 1. Tiger tracks recorded from different habitats of Katka-Kochikhali during the study period

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