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Occurrence of Indian Grey wolf in Laudoha forest in the Ukhra range of the Durgapur Forest Division in Paschim Bardhaman district, West Bengal

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Abstract

Our camera trapping data revealed the presence of an isolated pack of Indian Grey wolves (*Canis lupus pallipes*) in the Laudoha forest and its vicinity, consisting of breeding pairs, a secondary male, a sub-adult male and a helper female besides two cubs. This study also examines the social structure of the wolf pack in Laudoha, their dietary habits, the availability of prey, and the conflicts with humans in the study area.

Keywords: Grey Wolf, Laudoha Forest, *Pallipes,* Status Survey

Introduction

The Grey Wolf ranks among the most widely ranging canid species globally. In the Indian subcontinent, two recognized subspecies are the Tibetan Wolf (*Canis lupus chanco* Gray, 1863) and the Indian Grey Wolf (*Canis lupus pallipes* Sykes, 1831). The Tibetan Wolf is found in the higher elevations of the Himalayas, typically at altitudes of 3000-4000 meters, and occupies an alpine niche; these two subspecies differ in size, coat colour, and fur density. The Indian Grey Wolf (*Canis lupus pallipes*) primarily inhabits the semi-arid regions of the Indian subcontinent, including degraded plains, semi-arid grasslands, and scrublands. Its body size is significantly smaller compared to other wolf subspecies, apart from the Arabian Wolf, *Canis lupus arabs*, which resides in the Arabian Peninsula (Jhala, 2003). Although the Indian wolf is thought to have developed as a temperate species, it is well adapted to living in semi-arid and warm habitats. Its smaller size lowers food requirements, allowing it to thrive on smaller ungulates, lagomorphs, and rodents. The shedding of underfur and behavioural thermoregulation enables this canid to exist in hot, arid conditions. Nevertheless, the Indian wolf still requires adequate drinking water and is not fully adapted to desert life like the chinkara (*Gazella bennettii*).

The eastern population of *Canis lupus pallipes*, located in Odisha, Bihar, and certain areas of West Bengal, is unique because it inhabits more humid forested environments (Shahi, 1982); however, even in these areas, wolves are absent in regions with dense forests. Jhala (2003) conducted a population assessment of Grey Wolves in Bihar-Jharkhand, and Jhala (2000) provided an estimate for the overall Grey Wolf population in India. The only assessment of the Grey Wolf's status from the Zoological Survey of India has been conducted in the West Bengal and Jharkhand areas, specifically in Purulia, Bankura, Midnapore, and Dalma, as reported by Saren *et al.* (2019), along with a more recent study in Purulia by Mukherjee *et al.* (2021). Therefore, to gain insight into the current status of the Grey Wolf, a field study was carried out in various sites within the Laudoha forest and the nearby villages of Madhaiganj and Srikrishnapur in the West Bardhaman district of West Bengal.

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Materials and Methods

During the present study, we conducted intensive field studies from December 2023 to March 2024. Besides line transect and direct encounter methods, we deployed four Spypoint Solar camera traps in various locations within the Laudoha forest (23°40'7.1"N, 87°19'11.2"E) and the nearby villages of Madhaiganj and Srikrishnapur to monitor wolf (Figure 1) movements both during the day and at night and to assess their pack size. We also recorded the other species of mammals and large birds in the wolf's habitat vicinity through camera traps, such as Indian hare and wild boar, along with other wildlife present in the area, including Indian fox, jungle cat, jackal, small Indian civet and small Indian mongoose, and peafowl (Figures 3 a-f). The research team has also interacted with 44 villagers from Laudoha Forest to gather data on different fauna including wolves and how often the people encounter different species as per the methodology of the People's Biodiversity Register with a simple question-and-answer procedure.

Results and Discussion

Two groups of wolves, each consisting of 6-7 individuals (Figures 2, 3a), have been spotted moving from Tilboni Reserve Forest to Srikrishnapur village, covering an area of approximately 112 square kilometres in the Ukhra Range of the Durgapur Forest Division in Paschim Bardhaman district, West Bengal. Within this region, notable forest patches include Laudoha (close to Madhaiganj village) and Kantaberia forests (near Gopedanga and Adivasipara villages), while the remaining area is characterized by scrublands and eucalyptus plantations, along with agricultural fields from various villages.

Territory size is influenced by factors such as food, water, and the availability of habitat for denning and rendezvous sites (Fuller, 1989; Jhala & Giles, 1991). Wolves that rely on wild prey in regions with high prey density tend to have smaller territories (less than 100 sq km), whereas those that primarily feed on domestic livestock have larger home ranges (up to 250-300 sq km) that encompass the grazing areas of multiple villages (Jhala, 2003). In the Ukhra Range of Durgapur Forest Division, wild prey is scarce for the wolves, which mainly consists of Indian hares (*Lepus nigricollis*) and wild boars *(Sus scrofa*). Consequently, the wolves must rely on domestic livestock (goats) and cattle carcasses from various villages in the summer and monsoon seasons, while in winter, they take advantage of sheep brought in by migratory herders. Water is a limited resource in these dry, arid regions; however, the Forest Department has addressed this issue by digging freshwater ponds in the Laudoha and Kantaberia forest patches. As a result, the combination of domestic prey availability, water sources, and abandoned World War II bunkers for denning has led wolves to favour Laudoha forest as their denning and rendezvous location.

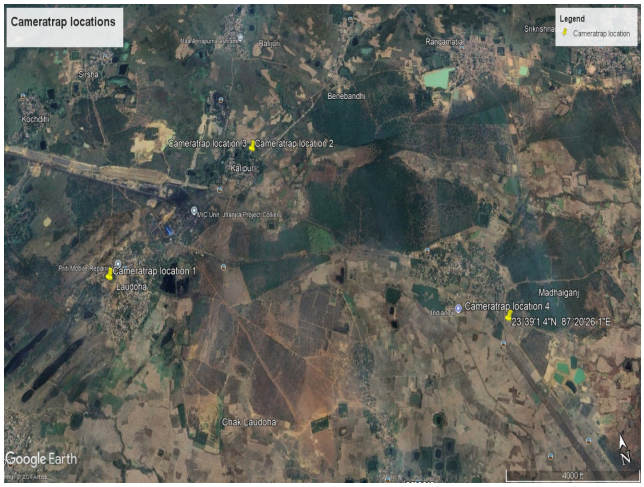

Figure 1. Google Earth map showing the study area with the camera trap locations in Laudoha Forest in the Ukhra Range of the Durgapur Forest Division in Paschim Bardhaman district, West Bengal.

Figure 2. A camera-trap image of the alpha male of the Indian Grey wolf (*Canis lupus pallipes*) from Laudoha Forest of West Bardhaman District, West Bengal.

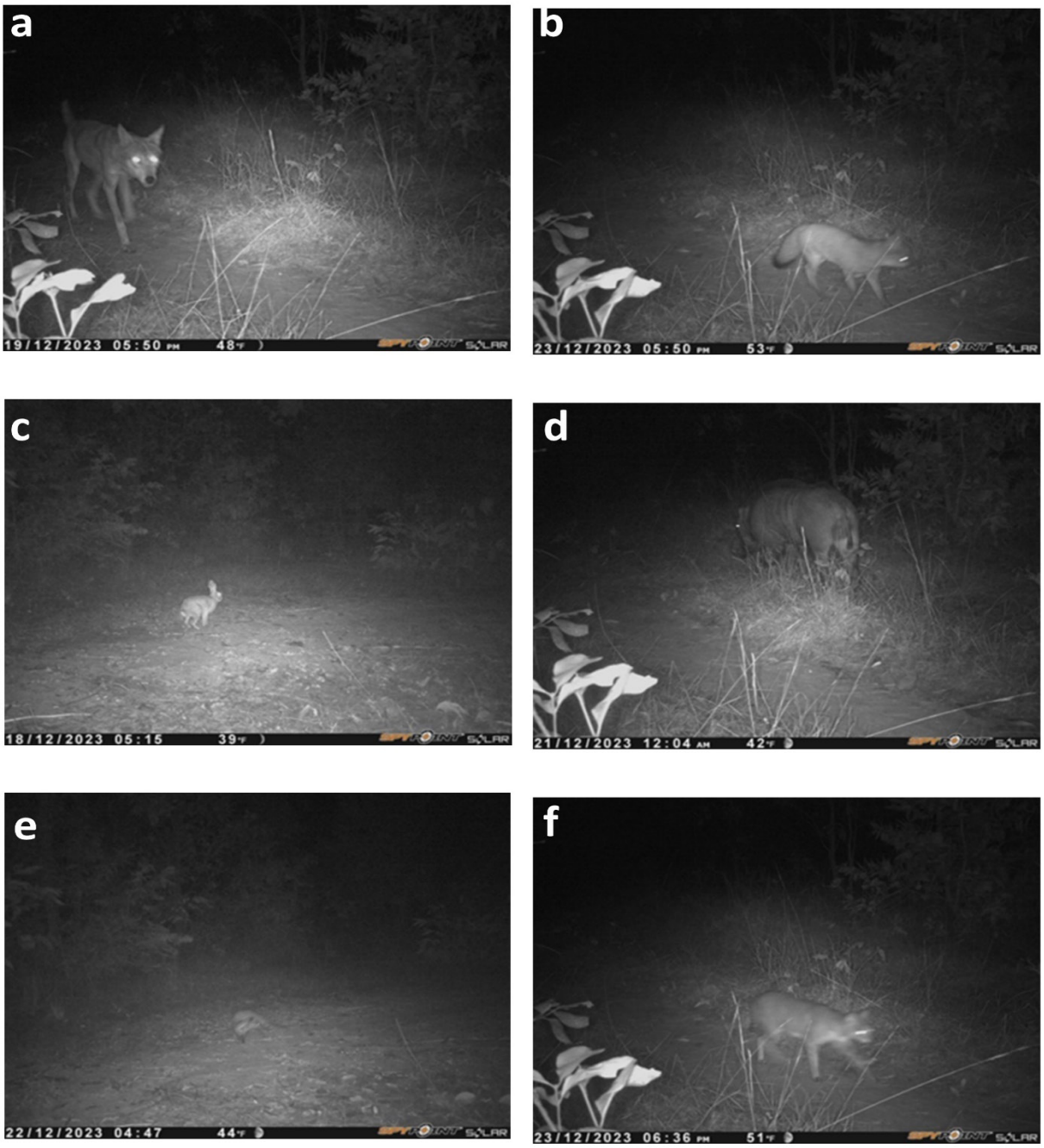

Figure 3. Camera-trap image of **(a)** Indian Grey wolf, **(b)** Bengal fox, **(c)** Indian hare, **(d)** Wild boar, **(e)** Small Indian civet and **(f)** Jungle cat from Laudoha Forest of West Bardhaman District, West Bengal.

Larger packs (6 to 12 wolves) were recorded in areas where wild ungulate prey was abundant (e.g. Velavadar National Park, Nannaj, Dwarka and Rollapadu). In areas where domestic livestock formed the major component of the diet, pack size ranged from 1 to 4 individuals. Large numbers are more likely to be detected by vigilant pastoralists and their dogs and may prove to be a disadvantage while hunting domestic prey (Jhala & Giles, 1991). Hence, the size of a wolf pack in the study area is only 4-5 individuals, plus the 2-3 pups born every winter.

Social Organisation of the Wolf Pack at Laudoha

Wolves, being the largest members of the canid family, possess a complex social structure. Wolf communities are

centred around the breeding or alpha pair, with the alpha pair and their offspring cohabiting as a pack. Generally, a pack functions as a family unit that may consist of either related or unrelated wolves. The pack claims and protects its territory from rival wolf packs. Territorial defense is accomplished through scent marking, vocalizations, and confrontations with neighbouring packs (Mech, 1970). As young wolves mature, they commonly either leave their natal pack or remain as helpers to their parents. Indian wolf pups might begin to disperse as early as 7-8 months old. Those that disperse roam in search of partners and suitable habitats to create their territories and packs, while helpers wait until they can breed themselves by taking over or displacing their parents (Packard & Mech, 1980).

Our camera trapping data indicated that the wolf pack in Laudoha forest and its surroundings includes breeding pairs: alpha male and female (which is a lame individual missing the claws on its left hind leg, likely due to a road injury or capture in a jaw trap), a secondary male, a sub-adult male and a helper female.

Food Habits

Most research into food habits has taken place in protected locations, leading to an overestimation of wild prey's role in the diet of wolves. Nevertheless, it is reasonable to assert that a significant number of wolves in India primarily rely on small livestock, particularly goats and sheep (Shahi, 1982; Jhala & Giles, 1991). In the Laudoha forest region, this wolf pack survives by hunting domestic livestock (mostly goats) and feeding on cattle carcasses during the summer and monsoon months, while they consume sheep that migratory herders bring to the area in winter. A decrease in body size minimizes food requirements, enabling Indian wolves to survive on smaller prey such as hares (*Lepus nigricollis*) and rodents. Additionally, Indian wolves also consume locusts, various insects, reptiles, birds, and plant materials, including the pods of *Prosopis chilensis* and the fruits of *Zizyphus* spp. (Sharma, 1978; Jhala, 1993).

Conflict with Humans

Many wolf populations in India inhabit areas outside of wildlife reserves, existing primarily in landscapes dominated by humans, where they mainly rely on livestock for food. In large parts of the wolf's territory, local communities predominantly engage in livestock rearing. Extensive herds of cattle, sheep and goats graze in the semi-arid regions. Most of these animals suffer from malnutrition and often perish due to disease and starvation. As people in India seldom consume cattle, many of these carcasses are left available for scavengers like dogs, vultures, jackals, hyenas, and wolves. In addition to scavenging, wolves also hunt livestock such as village goats, sheep, and calves. Wolf attacks significantly impact the economy of pastoral communities that struggle to survive in the heavily overgrazed and degraded semi-arid landscape of India (Jhala, 2003).

The wolves in the Durgapur Forest Division rely on domestic livestock, primarily targeting goats from nearby villages around Laudoha and Kantaberia during the summer and monsoon seasons, in addition to feeding cattle carcasses and sheep brought in for grazing by seasonal pastoralists in the winter. This behaviour leads to direct conflicts with residents in villages like Gopedanga, Adivasipara, Kantaberia, Banshia, Amdohi, and Srikrishnapur, especially those living right next to the forests. During our survey, 44 villagers were interviewed, of which 50% of villagers from these areas reported losing goats to the wolf pack. One villager from Gopedanga, which borders Kantaberia forest, mentioned that he lost 9 out of his 13 goats to the wolves over the past two years! Unless a form of compensation is provided, these unfortunate villagers may retaliate, and West Bengal State could face a significant decline in its wolf population. Besides the anthropogenic disturbance, prey depletion, inbreeding and habitat destruction are considered threats to this species. Hence, essential conservation efforts are required, for designating Laudoha forest as a Wolf Wildlife Sanctuary.

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