

Field Report

A lone wolf with a pack of wild dogs: first record of dhole-wolf association in Melghat Tiger Reserve of India



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Abstract

Direct observations of interspecific interactions among large carnivores remain relatively uncommon in the wild, largely due to their elusive behaviour and low densities. This note reports an unusual instance of a lone Indian wolf *Canis lupus pallipes* associating with a pack of dholes *Cuon alpinus* on three separate occasions in Melghat Tiger Reserve, Maharashtra, India. The pack, consisting of two adult dholes and three pups, exhibited no signs of aggression or avoidance toward the male wolf, which was observed moving and resting in close proximity to the group. Such affiliative behaviour contrasts with typically antagonistic interactions reported between sympatric carnivores and suggests behavioural flexibility potentially shaped by factors such as habitat structure, prey distribution, availability of conspecifics, or shared space use along habitat edges. These observations add to the limited but growing evidence of context-dependent associations between social carnivores in India.

Introduction

Interspecific interactions among large carnivores are central to understanding community dynamics, shaping patterns of coexistence, competition, and resource partitioning in shared landscapes. These interactions and their complex interplay influence everything from species persistence to ecosystem functioning (Srivathsa et al. 2023). The Asiatic wild dog or dhole *Cuon alpinus* is a globally Endangered social carnivore distributed widely from Central Asia to South-East Asia (Kamler et al. 2015; Srivathsa et al. 2020). The IUCN Red List assessment suggests that India harbors the largest population of dholes; however, the species has lost nearly 60% of its historical range in the country over the last century, indicating a continuing trend of local extinctions (Karanth et al. 2010, Srivathsa et al. 2020). Currently, dholes are found in small and likely declining populations that are primarily limited to forested landscapes in three important regions of India: portions of Northeast India, Central Indian forests, and the Western Ghats and are protected under Schedule-II of India's Wildlife (Protection) Act, 1972 (Durbin et al. 2004, Karanth et al. 2009, Punjabi et al. 2017, Srivathsa et al. 2019a, 2019b, 2020).

Native to the Indian subcontinent, the Indian Wolf *Canis lupus pallipes* is an ancient, endemic wolf subspecies (Sharma et al. 2004, Hennelly et al. 2021; Jhala et al. 2022). This subspecies is classified as Vulnerable and is protected under Schedule-I of India's Wildlife (Protection) Act, 1972. Although earlier studies suggested that wolves seldom inhabit forests, recent observations have confirmed their presence in several forested regions across the country (Jhala et al. 2022). The tiger reserves of Mukundara, Kawal, Udanti, Sitanadi, Melghat, Panna, Palamau, Bor, Kanha, Satpura, and Pench were notable for having a significant number of wolves (Jhala et al.

2022). Although there is little overlap between the wolves and dhole ecological niches, they have been observed to coexist in Central Indian forests, particularly in the buffer zones of Protected Areas. These buffer zones, which surround the core area, serve as transitional regions that allow for certain sustainable uses, while the innermost protected area, known as the core zone, is largely prohibited from human activity. Transitional zones such as these often differ in prey density and tree cover due to anthropogenic pressures (Pfeifer et al. 2017).

Interactions between dholes and wolves are rarely documented, with only two records of such encounters having been reported from parts of Central India (Nair and Panda 2013, Ghaskadbi et al. 2021). Here, we report three sightings of unusual inter-genus interactions between a pack of dholes and a lone male wolf in Melghat Tiger Reserve, Maharashtra, India.

Methods

The observations of dhole and wolf were made opportunistically during field surveys for owls conducted from February to June 2025 in the Gugamal Division of Melghat Tiger Reserve. Melghat Tiger Reserve is situated between 21°15' and 21°45' N and 76°30' and 77°15' E in the Satpura Hill Range of northern Maharashtra, India, covering an area of about 2,768km² (Kulkarni et al. 2022). This landscape facilitates ecological connectivity among protected areas such as Satpura, Pench, and Kanha (Sharma et al. 2013). The vegetation of the reserve is mainly tropical dry deciduous forest, as per forest classification by Champion and Seth (1968). Teak *Tectona grandis* makes up about 75% of Melghat's forest area, with mixed forest featuring species like axle wood tree *Anogeissus latifolia*, indian ash tree *Lannea coromandelica*, flame of the forest *Butea monosperma*, yellow teak

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Adina cordifolia, kaim *Mitragyna parviflora*, Indian laurel *Terminalia elliptica*, and small flowered crape myrtle *Lagerstroemia parviflora*, making up the remaining 25%. The reserve is also home to a large population of bamboo *Dendrocalamus strictus* (Kulkarni et al. 2022). Melghat Tiger Reserve supports a rich assemblage of biodiversity, including a diverse guild of carnivores, like tiger *Panthera tigris*, leopard *Panthera pardus*, sloth bear *Melursus ursinus*, and striped hyena *Hyaena hyaena*. Herbivores in the reserve include nilgai *Boselaphus tragocamelus*, sambar *Rusa unicorn*, chital *Axis axis*, gaur *Bos gaurus*, muntjac *Muntiacus muntjac*, and four-horned antelope *Tetracerus quadricornis* (Kulkarni et al. 2022). Furthermore, more than 260 different bird species have been recorded, including the Endangered forest owl *Athene blewitti*, leading to the reserve's designation as an Important Bird Area (BirdLife International 2025).

The human population within the reserve's buffer area is increasing at a rate of 15 % a decade (Chikkanarayanawamy et al. 2024). Their presence and associated activities exert pressure on local biodiversity. Stressors include forest land encroachment for agriculture, unauthorized tree felling for personal and commercial purposes, illegal grazing, occasional animal poaching, and man-made forest fires (Chikkanarayanawamy et al. 2024).

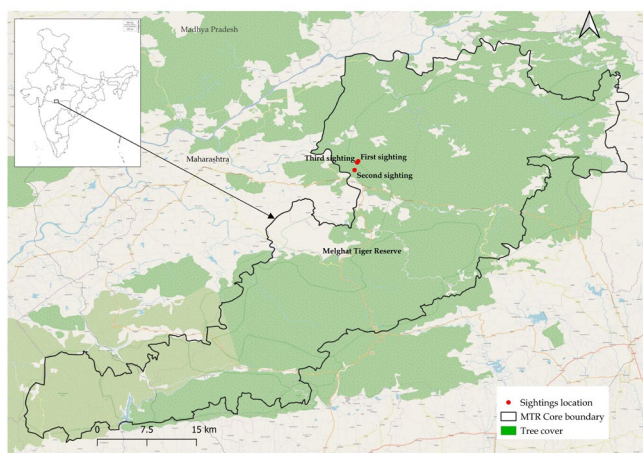


Figure 1. Map of the three locations where the dhole pack and wolf interactions were observed in Melghat Tiger Reserve, India.

Results

Three independent observations of an unusual association between a pack of dholes and a lone wolf were recorded near the boundary between the core and buffer zones of Melghat Tiger Reserve (Figure 1). The first encounter took place on 07:00 on 24 March 2025 when the dhole pack was spotted by the side of the road. When approached by a vehicle, the group, consisting of two adult dholes and one male wolf, quickly moved inside the forest away from the road. The second encounter took place at 15:00 on 03 May 2025, approximately 2km from the first location. This time, three pups and two adult dholes (a male and a female) were seen with the male wolf. They were crossing a forest road and the wolf trailed them while keeping a small distance. There were indications of some familiarity as neither species displayed any signs of fear, aggression, or hesitation. During the first observation, recorded more than a month earlier, the pups were not present. Since the dhole denning season extends from December to February and the post-denning (pup-rearing) period from March to June (Johnsingh. 1982, Acharya. 2007), it is likely that the pups were inside the den at the time of our first encounter.

At 07:00 on 20 May 2025, we observed a third encounter near a forest road (Figure 2a, b), where the group was discovered resting together. Adult dholes, their pups, and the male wolf retreated in a composed and well-coordinated movement. The pups showed no signs of fear, and the adult dholes displayed no defensive or aggressive behavior, despite the wolf being in close proximity to the young. These opportunistic observations, recorded over two months, suggest that the wolf may be in some form of temporary associative relationship with the dhole pack.



Figure 2. (a, above, and b, below) images of the lone wolf and the dhole pack moving together (photos by Vishnu Pattayil)

Discussion

This field note documents a first recorded instance from Melghat Tiger Reserve, Maharashtra, describing an association between a lone male wolf and a pack of dholes. The observation showed no signs of aggression, avoidance, or competition, even with the presence of dhole pups. Usually, the breeding dhole pair, especially the mother, is more territorial and protective (Maestripieri 1992, González-Mariscal 2022), but in this case, they showed a neutral response towards the wolf even when it remained in close proximity to the young. Their familiarity and consistency of the interaction suggest that this was not a chance encounter but rather a case of prolonged interspecific tolerance. Previous Indian records further support the possibility of tolerant or context-dependent relationships between these two species. For example, in Debrigarh Wildlife Sanctuary, Odisha, a lone wolf maintained a neutral association with a dhole pair for over a month (Nair and Panda 2013). In contrast, in Satpura Tiger Reserve, a wolf attempting to scavenge at a cattle carcass faced aggression from a dhole pack, although it was later seen moving without conflict alongside a smaller group of four dholes (Ghaskadbi et al. 2021). These examples highlight the variability of interspecific interactions, which may range from antagonism to apparent cohesion depending on ecological and social contexts. Interestingly, the observation in Satpura Tiger Reserve was seen in the buffer zone and all three sightings in Melghat took place close to the boundary between the core and buffer zones of the reserve. Anthropogenic disturbances influence tree cover and prey density in these transitional zones, which may, in turn, promote behavioral adaptability among carnivores (Habib et al. 2021). These ecological dynamics are tied to how sympatric carnivores usually manage to coexist, by partitioning their niches through temporal, spatial, or spatio-temporal segregation. However, when prey is scarce, overlaps in their activity tend to

increase (Glen and Dickman 2005, Karanth et al. 2017). Given the interaction's location, edge habitats may contribute to the formation of unusual associations like the one observed here.

Mixed-species groups are a common phenomenon in mammalian taxa, especially among primates and ungulates (Stensland et al. 2003). Functional drivers such as improved foraging efficiency or enhanced predator detection frequently underlie the formation of such groups (Stensland et al. 2003). For instance, zebras *Equus quagga* and wildebeest *Connochaetes taurinus* in East African grasslands regularly form seasonal mixed groups potentially driven by anti-predator advantages (Kiffner et al. 2014). Similarly, in the Western Ghats of India, Nilgiri langur *Semnopithecus johnii* and tufted grey langur *Semnopithecus priam* have been documented forming associations in several locations for increasing their foraging efficiency and reduce predation risk (Mahato et al. 2024). Although the advantages of these associations may not be distributed equally and can shift with resource availability, habitat structure, or seasonality. Interspecific associations have also been documented in carnivores like coyotes *Canis latrans* and American badgers *Taxidea taxus* in North America. They have been observed engaging in interspecies hunting associations, where they travel and hunt in close proximity, an association thought to be driven by foraging advantage when hunting ground squirrels (Kiliaan et al. 1991; Minta et al. 1992). These cases suggest that carnivores such as wolves and dholes, both being social species with flexible group structures, may also form such associations under particular ecological conditions (Stensland et al. 2003). Solitary Ethiopian wolves *Canis simensis* are known to associate with gelada monkey herds *Theropithecus gelada* for increasing social benefits (Venkataraman et al. 2015). Hence, a lone wolf, possibly a dispersing individual and lacking nearby conspecifics, may temporarily associate with another social canid to gain social benefits.

These observations suggest that interspecific associations between large carnivores can arise under specific ecological and social contexts. The apparent tolerance between wolves and dholes indicates behavioral plasticity in both species and underscores the ecological significance of edge habitats as dynamic spaces that merit conservation attention. In India, both species face considerable pressures from habitat fragmentation, human encroachment, and resource variability. These interspecific associations may signal these stressors and offer insights for adaptive management. The observation also raises questions about the potential absence of conspecific wolves present or a low local wolf population. Recognizing that carnivore coexistence can involve both tolerance and competition is crucial for developing multi-species management strategies in human-influenced landscapes. Further research employing camera traps, long-term behavioral monitoring, genetic analyses, and spatial movement data is needed to assess the frequency, drivers, and ecological consequences of these interspecific associations.

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