

Distribution update

New distribution record of dhole from northern Western Ghats, India

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Abstract

The dhole *Cuon alpinus*, a globally threatened social carnivore, has a declining population trend across its range. Even with a purported wide distribution range from Central Asia, India to South-East Asia, most dhole populations are small and survive in fragmented habitats. Here, we report a new record of the species north of its confirmed known occurrence in the Western Ghats, from Phansad Wildlife Sanctuary in the state of Maharashtra, India. The record adds valuable knowledge to the expanding range of the dhole, which could be crucial for its conservation and respective habitat in the future. The presence of dhole in a protected area like Phansad Wildlife Sanctuary, which has ample resources such as prey base, water and suitable habitats could prove a plus point in the conservation of meta-populations of dholes, and puts further emphasis on conserving possible existing corridors around the sanctuary for dhole movement.

Article

The Asiatic wild dog or dhole *Cuon alpinus* is a globally threatened social carnivore occurring widely from Central Asia, India to South-East Asia (Kamler et al. 2015). It falls within the Endangered (EN) IUCN Red List Category. Globally, the dhole population is declining across its geographic range (Kamler et al. 2015). Expert opinions estimate the total population of dhole to be around 949–2,215 mature individuals; however, recent development of reliable methods to determine population sizes (Ngoprasert et al. 2019) may peg the population at a different figure. India appears to be a stronghold for dhole populations and the Western Ghats retain the largest dhole meta-population globally (Kamler et al. 2015). Owing to a reasonable density of wild prey and a relatively well-established network of protected forests, dhole meta-populations still continue to survive in the Western Ghats and the central Indian forests (Srivathsa et al. 2014; Karanth et al. 2009). Srivathsa et al. (2020) propose that the dhole currently occupies a 249,606 km² area throughout India. In spite of this, there is a limitation on the amount of information available regarding the status, population and distribution of the species in certain parts of the Western Ghats, especially the northern regions (Punjabi et al. 2017). Punjabi et al. (2017) present the northernmost location (18°00'N, 73°40'E) of the dhole, in a patch of semi-evergreen forest near Wai, Maharashtra. We report a new occurrence record of the dhole in Phansad Wildlife Sanctuary and provide an update on its northernmost distribution, further north from that previously known.

Phansad Wildlife Sanctuary is situated in the lower hills of the Konkan coast, covering an area of approximately 53 km² in the Raigad District of Maharashtra, India. Owing to its unique evergreen vegetation type, the

sanctuary is a highly diverse region in the Western Ghats (Gokhale and Velankar 1996), however it is isolated from the main ridge of the Western Ghats mountain range. The sanctuary is situated between 18°19'–18°30'N and 72°54'–73°03'E with an altitude range from 20–350 m. The average annual rainfall in the region varies from 2,162 mm to 3,469 mm. The sanctuary is divided into a number of habitats with some parts bearing degraded, moist, deciduous vegetation, plateau regions showing a grassland type of habitat and the core part of the sanctuary showing evergreen type of vegetation dominated by *anjani* (*Memecylon umbellatum*) (Katwate et al. 2013). During the winter season (5 January 2020) we installed 18 camera-traps (Model: Cuddeback C2) at multiple sites in Phansad Wildlife Sanctuary to understand and document the mammal diversity present in the area. The sites were selected based on a preliminary survey of trails and sign encounters in these areas. Cameras were checked again after a period of 20 days on 25 January 2020.

A single individual dhole was camera trapped on 23 January 2020 at 05:23 AM (Figure 1) at the location 18° 26'N, 72° 55'E at an elevation of 316 m above sea level. However, a close inspection of the area surrounding the camera trap revealed pugmarks of possibly three or four individual dholes in the vicinity, although this remains unconfirmed. The dhole was found on a frequently-used animal trail with species such as sambar deer *Rusa unicolor*, Indian hare *Lepus nigricollis* and wild pig *Sus scrofa cristatus* frequenting the same trail. This trail was in a patch of stunted evergreen type of vegetation with *anjani* trees dominating the landscape. Due to its location in the core forest in the northern part of the sanctuary, the trail did not experience much human activity.

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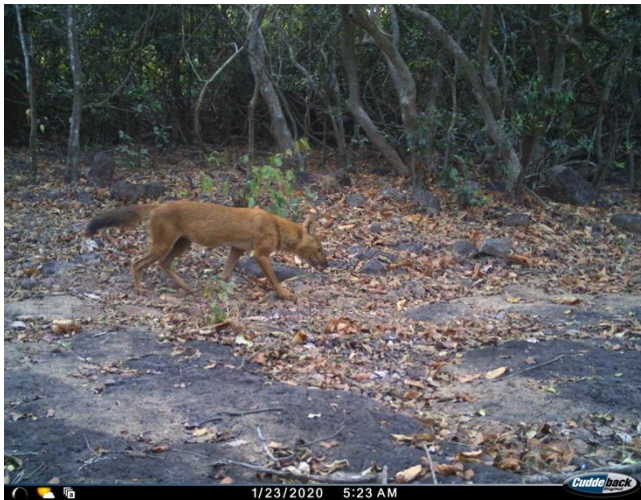


Figure 1: Camera-trap photograph taken on 23 January 2020 at 05:23AM in Phansad Wildlife Sanctuary.

Other species captured on the camera-trap include sambar deer, Indian hare, Indian chevrotain *Moschiola indica*, and wild pig. We believe this is a new record of the dhole in Phansad Wildlife Sanctuary and a northward extension of its distribution range by about 93km from the previous published record (Figure 2).

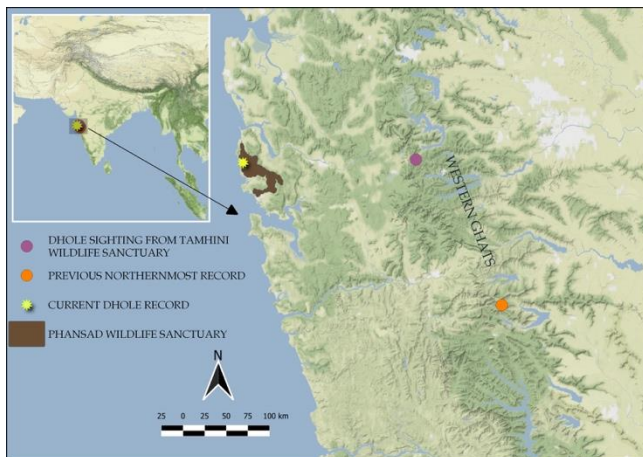


Figure 2: Previous dhole record (from Punjabi et al. 2017) and current record of dhole in Phansad Wildlife Sanctuary.

Although the forest of Phansad Wildlife Sanctuary is not directly connected to the main range of the Western Ghats, it is similar in terms of floral and faunal diversity (Rodgers and Panwar 1988; Pande et al. 2005). Sambar deer, chital *Axis axis* and barking deer *Muntiacus muntjac* form a major part of the dhole diet with sambar deer being the most preferred (Selvan et al. 2013; Hayward et al. 2014). Srivathsa et al. (2019) stated that dhole population is positively affected by the availability of prey base and negatively affected by factors such as loss of forest cover and human presence, and further that the probability of extinction is higher with the loss of forest cover. They also stated that the occupancy of dholes in the protected areas was greater than that outside protected areas owing to the rapid forest destruction outside the reserves. The dhole primarily inhabits forested areas and requires a healthy habitat to thrive (Karanth and Sunquist 2000; Grassman et al. 2005; Kamler et al. 2015). Phansad Wildlife Sanctuary harbours a healthy population of sambar deer and barking deer which form part of the dhole diet. In addition to this, the sanctuary also has a range of suitable habitats and plentiful water sources to ensure dhole movement and survival.

Further, the sanctuary falls under the network of protected areas, where forest loss and illegal human encroachment are monitored.

Hence, Phansad Wildlife Sanctuary has the potential to ensure the survival of a meta-population of dholes and for their conservation in the future. An unpublished record exists (from December 2018) of the dhole near Tamhini Wildlife Sanctuary (18°26'N, 73°25'E) outside of Pune, Maharashtra (Chirag Munje, pers. comm.). It is possible that the dhole recorded at Phansad may have migrated from Tamhini Sanctuary, as this is the closest connecting forest near Phansad. No protected forest corridors are present which connect Phansad Wildlife Sanctuary with other protected areas (Kale et al. 2010), where known dhole populations occur in this region. However, we predict that some corridors may be present between Tamhini Sanctuary and Phansad which might be important for their movement. Remnant forest patches however, are subject to fragmentation as a result of planned large-scale infrastructure projects and associated land use changes.

Given their wide-ranging habits, dholes require larger zones for survival than most other carnivores (Woodroffe and Ginsberg 1998, Kamler et al. 2012). Phansad is an important refuge habitat and we recommend that efforts should be invested to safeguard forest corridors around the sanctuary for dhole persistence and dispersal.

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Biographical sketch

Anish Pardeshi is a wildlife biologist whose interests lie in mammal biology and landscape conservation.

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