

Photographic evidence of Red Fox from Timli Range, Kalsi-Uttarakhand, India



Camera trap images of Red Fox in Timli Forest Range, Soil Conservation Forest Division, Kalsi, Uttarakhand. © WWF-India.

Three fox species are recognized in India: Indian Fox *Vulpes bengalensis*, Tibetan Fox *V. ferrilata*, and Red Fox *V. vulpes montana* (Sillero-Zubiri et al. 2004). While the Red Fox's distribution and ecology are globally researched, its Indian context remains limited (Macdonald & Reynolds 2004). The IUCN Red List categorizes the Red Fox as 'Least Concern' (Hoffmann & Sillero-Zubiri 2021). With an opportunistic diet, the Red Fox thrives in diverse habitats worldwide, thanks to its adaptability (Cavallini & Volpi 1995; Cagnacci et al. 2003).

In India, the Red Fox's range spans the Himalayan and Trans-Himalayan regions, from 2,100 to 5,200 m in altitudes, across Jammu

& Kashmir, Himachal Pradesh, Uttarakhand, Arunachal Pradesh, and Sikkim (Maheshwari et al. 2013; Umariya et al. 2020). Despite their affinity for dry, mixed landscapes with scrub and woodland forests, Red Foxes are commonly found in urban areas and seem to flourish near human settlements due to the availability of food resources (Macdonald & Reynolds 2004; Umariya et al. 2020). No prior studies recorded Red Foxes in Kalsi Soil Conservation Division, Uttarakhand. It is conceivable that Red foxes might have been present in the area but remained unnoticed due to their timid and nocturnal behaviour.

The Timli Forest Range is situated in the Soil Conservation Forest Division, Kalsi, Uttarakhand,

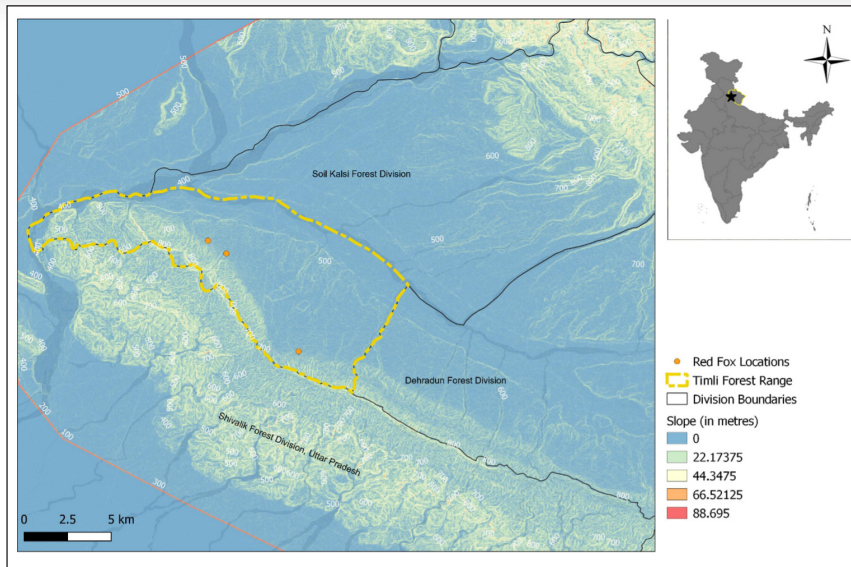


Photo capture locations of Red Fox from Timli Forest Range, Uttarakhand.
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India. It shares borders with the Barkala Range of the Shivalik Forest Division to the south, the Malhan Range of the Dehradun Forest Division to the east, and is connected to the Kalesar National Park in Haryana via the Yamuna River to the West. Encompassing an area of approximately 70 km², the range is located around 45 km from Dehradun City. Summer temperatures range 16–46 °C, while winter temperatures plummet to as low as 6°C, occasionally even below freezing. Noteworthy ecosystems within the range include Sal forests *Shorea robusta*, mixed forests (dominated by *Mallotus philippensis*), and Himalayan forests (characterized by

Pinus roxburghii). The Timli range features distinct forest types such as dry Shivalik Sal forest, moist Shivalik Sal forest, northern dry mixed deciduous forest, moist Bhabar Dun Sal forest, and dry deciduous scrubs, each contributing to its ecological diversity (Singh et al. 2003).

The forest range has notable existence of mammals including Goral *Naemorhedus*, Sambar Deer *Rusa unicolour*, Chital Deer *Axis axis*, Barking Deer *Muntiacus muntjak*, Blue Bull *Boselaphus tragocamelus*, Indian Crested Porcupine *Hystrix indica*, Indian Wild Boar *Sus scrofa*, and Elephant *Elephas maximus*. Apart from the Red Fox, other

carnivores such as Leopard Cat *Prionailurus bengalensis*, Small Indian Civet *Viverricula indica*, Masked Civets *Paguma larvata*, Palm Civets *Paradoxurus hermaphroditus*, Golden Jackal *Canis aureus*, and Leopard *Panthera pardus* are also found in Timli Range.

The region features undulating terrain, ranging 300–1,000 m, marked by elevated peaks, steep hills, deep valleys, and rocky streams (Raus). Rainfed seasonal rivers like Rau drain the lower Shivalik and Himalayan ranges. The northern part displays the characteristic hilly Shivalik range with steep slopes, while the southern portion contains extensive Sal forest patches, frequented by elephants. Timli Range includes numerous waterholes and forest streams along the Yamuna River, ensuring a consistent water supply for the local wildlife year-round.

Timli Range also functions as a vital wildlife corridor for Tigers, Elephants, Leopards, and other animals, facilitating their movement between Rajaji Tiger Reserve, Shivalik Forest Division in Uttar Pradesh, Kalesar National Park in



Habitat of Timli Forest Range, Uttarakhand. © Devavrat Pawar.

Haryana, and Simbalwara Wildlife Sanctuary in Himachal Pradesh (Kumar et al. 2022).

The Red fox was photo captured in three camera traps at 1920 h on 02 March 2022, at 0216 h and at 0232 h at two separate locations on 03 March 2022.

Red Foxes are rare in Uttarakhand's Shivalik Bhabar region, but some evidence exists of their presence in the Terai region. Previously, a Red Fox was spotted in Ramnagar Forest Division at 505 m, possibly the lowest in India (Anwar et al. 2014). The photos of the Red

Fox from our study were taken at comparable elevations: 527 m, 594 m, and 619 m. These sporadic records in the lower Himalayan region could result from climate change and habitat shifts. Elevated temperatures are transforming alpine zones, leading to a preference for lower habitats. Human-induced changes, like farming and urbanization create fragmented landscapes, requiring adaption from red foxes. The interplay of climate shifts and human impacts shapes wildlife distribution in evolving environments.

Previously, no documented Red Fox records existed in the Soil Conservation Forest Division,

Kalsi, nor have studies assessed their presence and distribution there. The photographic evidence in this report is vital to the forest department and other biologists. It offers insights into the spatial and temporal presence of Red Foxes in the area. Such insights are vital for holistic conservation strategies, ensuring the species' protection in its natural habitat within the Soil Conservation Forest Division, Kalsi. Moreover, understanding red fox coexistence and its interactions with other species underscores the need to investigate the impacts of habitat decline on inter-species dynamics and potential conflicts.

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Devavrat Pawar¹, Siddhant Umariya², B.B. Martolia³ & IP Bopanna⁴

^{1,2,4} WWF-India, Terai Arc Landscape Head Office, Dehradun, Uttarakhand 248001, India.

³ DFO-IFS, Soil Conservation Forest Division, Kalsi, Uttarakhand 248158, India.

Email: ¹devavrat.pawar@wur.nl (corresponding author)

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