

A New Insight into the Distribution of Himalayan wolf (*Canis lupus chanco*) in Jammu and Kashmir, India

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Genetic markers identify the Himalayan wolf, with mitochondria revealing a close kinship to the Holarctic grey wolf. The Himalayan wolf is predominantly found in the Himalayas and on the Tibetan Plateau. The primary objective of the study is to document the current distribution of Himalayan wolves in Jammu and Kashmir, India. A Himalayan wolf was recently observed in a human settlement in the Budgam district of Kashmir. Earlier sightings were reported in three districts of Jammu and Kashmir, namely Shopian (Hirpora Wildlife Sanctuary), Anantnag (Overa-Aru Wildlife Sanctuary), and Gandarbal (Thajwas-Baltal Wildlife Sanctuary). Wolves globally tend to utilize human settlements for sustenance, relying on livestock in areas where natural prey diversity or abundance is limited. Consequently, the wolf stands out among carnivores as a major contributor to human-carnivore conflicts. However, the Himalayan wolf thrives at higher elevations rather than in plains or lower altitudes, where it predominantly relies on wild prey for sustenance. It is likely that Himalayan wolves only resort to human settlements when the natural prey base is insufficient, a behaviour observed frequently along the fringes of the Hirpora Wildlife Sanctuary during winter seasons. The finding contributes valuable insights into the current distribution and range expansion of Himalayan wolves in Kashmir, India and holds a significance for ongoing conservation efforts aimed at preserving this species in the region of Jammu and Kashmir.

Keywords: Himalayan wolf, Kashmir, Distribution, Ecology

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INTRODUCTION

The Himalayan wolf is recognised by genetic markers, with mitochondrial DNA (Werhahn et al., 2017) indicating a close relationship to the Holarctic grey wolf (Aggarwal et al., 2007). It is genetically related to Mongolian, Tibetan and African wolves (Aggarwal et al., 2007; Werhahn et al., 2018; Alvares et al., 2019). This species lineage is recognised as a different species. The Himalayan wolf lives in the Western Himalayas and on the Tibetan Plateau (Alvares et al., 2019; Werhahn et al., 2019). In contrast, using the generalised phylogenetic coalescent sampler technique and six samples from the region, researchers found several thousand individuals in Tibet and

Qinghai. Given their geographic position, these populations are most likely Himalayan wolf lineages (Fan et al., 2016; Werhahn et al., 2017).

This species lives in high-elevation areas like the Himalayas and others i.e. Tibetan Plateau (Joshi et al., 2020) and flourishes in a low-oxygen environment (Werhahn, 2020). According to Fox and Chundawat (1995), there were roughly 350 individuals in Jammu and Kashmir as well as Himachal Pradesh, occupying approximately 50000 square kilometres of habitat but the current population status and home range of Himalayan wolves are unknown. The conservation status of the Himalayan wolf, as well as the adoption of protective measures, is jeopardised due to a lack of knowledge about its taxonomy, range, and ecology. Based on the increasing wildlife conflict near the settlements in the Budgam district. We selected the district to identify the presence of predators in the settlements.

MATERIALS AND METHODS

STUDY AREA

Budgam is one of the old districts of Jammu and Kashmir, with a total area of 1,371 Km². We surveyed the whole district to know the presence of wolves in the district. We used direct and indirect evidence to identify their presence (Figure 1).

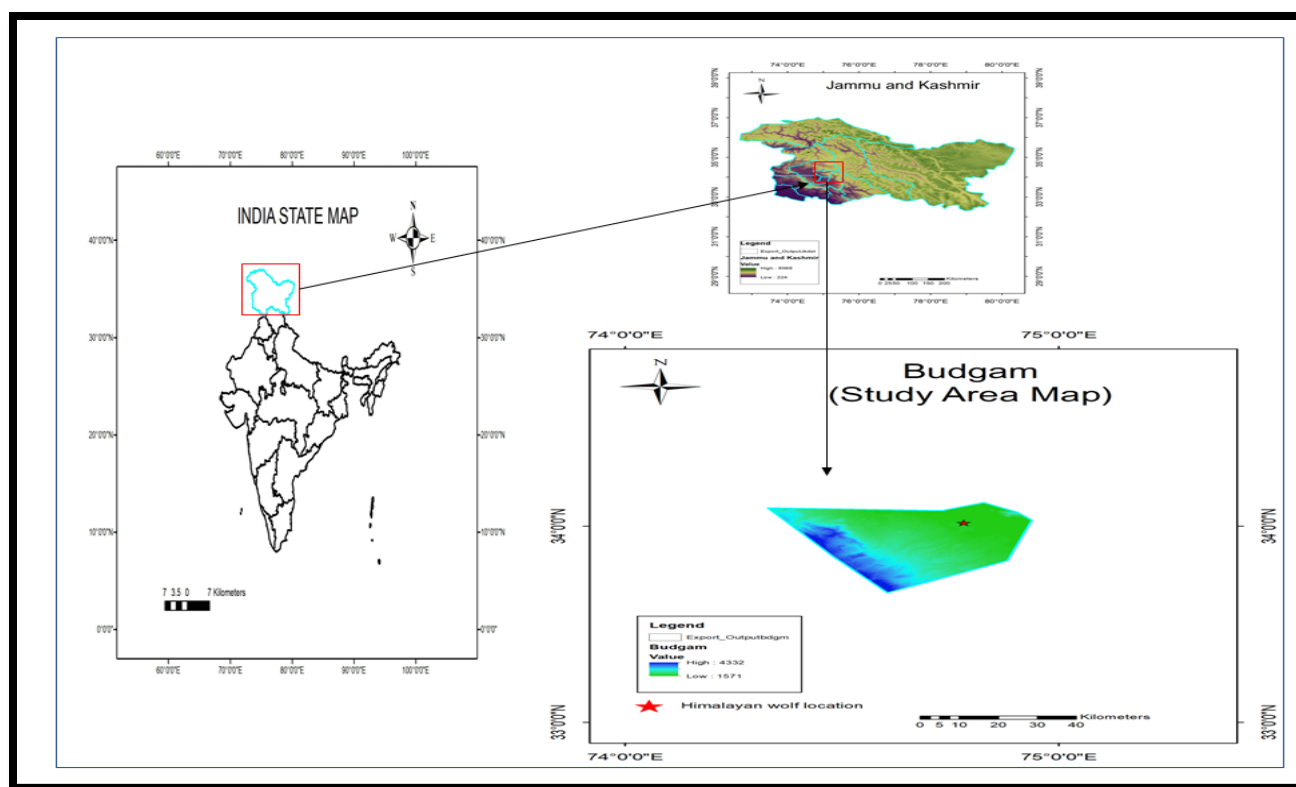


Figure 1: Map of the study area.

METHODOLOGY

We set out on a mission to find the presence of Himalayan wolf like other large carnivores in the district Budgam of Jammu and Kashmir. We used a systematic

strategy to collect reliable data and acquire knowledge about the presence and ecology of this remarkable species in the whole district, which included the following steps: We walked along transects which covers whole districts to get information related species. Besides, we gather information about the Himalayan grey wolf and its habitat in Jammu and Kashmir from current studies, papers, and publications. Consult with wildlife specialists, environmentalists, and local people who have tracked and studied Himalayan wolves in Jammu and Kashmir. They provide helpful information on where to search for wolves, as well as tips on identifying wolf tracks, vocalisations, and other signs of their presence.

RESULTS AND DISCUSSION

Earlier, Himalayan wolves were reported in three districts, namely Shopian and Anantnag in south Kashmir, and Gandarbal in central Kashmir (Habib et al., 2013). In Shopian, they inhabit the Hirpora Wildlife Sanctuary, while in Anantnag, they are found in the Overa-Aru Wildlife Sanctuary, and Gandarbal, and they inhabit the Baltal-Thejwas Wildlife Sanctuary. The study recorded a new sighting of a Himalayan wolf in the Budgam district, near a human settlement in Kashmir. The area is characterized by agricultural fields near the Banihal-Baramulla railway track, surrounded by Karewas of Srinagar International Airport, and connected to the Pir Panjal Mountain range, approximately 30 kilometres from Doodhpathri in Budgam.

While walking along the trail, we initially encountered a pack of three Himalayan wolves (Figure 2 and 3). Due to the presence of human habitation, we initially thought they might be golden jackals. However, the wolves were correctly identified using the field guide of Indian Mammals (Menon, 2023). Himalayan wolves are distinguishable by their large head, long muzzle, extended limbs, short ears, and a bushy black-tipped tail. The wolves were observed feeding on domestic chickens, water birds, and medium-large-sized livestock.

The presence of Himalayan wolves near residential areas, seeking livestock, is attributed to the scarcity of wild prey. Previously, Aaliya Mir from Wildlife SOS responded to calls from locals reporting a similar sighting years ago but couldn't visually confirm the species. Wolves worldwide use human settlements for food, but for the Himalayan wolf, this behavior is noteworthy because it prefers higher altitudes over lowlands. In habitats with low wild prey diversity or abundance, wolves often prey on livestock, making them a key predator and a source of human-carnivore conflict in the Himalayas. Probably, Himalayan wolves utilize lower altitudes only when prey is scarce. The second author frequently observed their evidence in surrounding human settlements, especially during autumn and winter in the Hirpora Wildlife Sanctuary.

Himalayan wolf packs probably select their home locations based on advantageous characteristics such as hiding cover, structural variety, and access to water. This selection process mirrors traits identified in grey wolf den sites in previous investigations (Trapp et al., 2008).

According to our survey, people in the surveyed areas did not receive compensation for losses related to wolf losses. In contrast, other regions, such as the Trans-Himalayas (Shey Phoksundo National Park and the Kanchenjunga Conservation Area), provide compensation for losses resulting from snow leopard predation and other large predators (Subba et al., 2017; Werhahn et al., 2019). The killing of wolves

is sometimes perceived as a communal service aimed at preventing future cattle depredation, fostering the belief that eliminating wolves benefits the entire community by reducing the likelihood of future livestock losses (Sillero-Zubri., 2004).



Figure 2: Himalayan wolf in human settlements in the Gagoo, Budgam, Jammu and Kashmir.

Conservation efforts in the Himalayas have predominantly focused on snow leopards, implementing local insurance programs and awareness campaigns (Mishra et al., 2003; Subba et al., 2017). To foster a more balanced cohabitation between local communities and wolves, conservation initiatives should extend similar financial support for losses caused by wolf depredation.

In conclusion, probably the decline of wild prey species in the natural habitats of wolves is identified as the primary cause of this observation. This finding holds significance for future conservation efforts and species management methods. It reveals the range expansion of Himalayan wolves in the Pir Panjal range of the Kashmir Himalaya, offering promise for ongoing conservation initiatives to preserve this species in the future.



Figure 3: Himalayan wolf near railway in the Gagoo, Budgam, Jammu and Kashmir.

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