



## Camera trapping survey for snow leopard provides first photographic record of Woolly Flying Squirrel from Kishtwar Himalayas, India

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### Key words

Camera Trap Photograph, Kishtwar, Sciuridae, Woolly Flying Squirrel

### Abstract

The Woolly Flying Squirrel (*Eupetaurus cinereus*), considered native to Northern Pakistan and North-Western Himalaya has remained an elusive species because of its presence in high mountain rocky cliffs near the tree line. These montane habitats have remained inaccessible for research thus making it difficult to study their distribution. Here, we present the first photographic evidence of the Woolly Flying Squirrel from the Kishtwar region of Jammu and Kashmir obtained from camera-traps placed to detect snow leopard presence and distribution. This record adds valuable presence information to the existing distribution range of the species from the North-Western Himalaya.

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## Main Text

The Woolly Flying Squirrel (*Eupetaurus cinereus*), hereby abbreviated to WFS, is a member of the *Sciuridae* family and is considered among the largest flying squirrel species in the world. The species was first described by Thomas (1888) as a member of a new flying squirrel genus based on three specimens from Astor, Gilgit (presently in Gilgit-Baltistan province, Pakistan), and a specimen from Tibet (Anderson, 1878). The species was observed up to 1925 in the areas around Hunza and Gilgit (Lorimer, 1925) and then was rediscovered in 1994 with the capture of a female squirrel from the same locality (Zahler, 1996). (Agrawal & Chakraborty, 1969) report the species from North Sikkim, India, based on a collected specimen. However, the identity of this species is considered doubtful (IUCN, 2020). Until recently, *E. cinereus* was considered the sole member of the genus, whereas morphometric and molecular analysis, based on analysis of 24 museum samples, have revealed three distinct species, *E. cinereus*, *E. tibetanus*, and *E. nivamons* across the Western, North Central and South Eastern margins of the Himalayas respectively (Jackson et al., 2022). The WFS has been reported from Gilgit-Baltistan,

Pakistan (Dinets, 2011; Oshida et al., 2005; Qamar et al., 2012; Zahler, 1996). (Qamar et al., 2012) reported the species from Neelum Valley (Thomas, 1888) signaling an extension of the previously reported distributional range, whereas (Pal et al., 2019) reported camera trap records at 4800m elevation of the species from Baghirathi Basin, Utrakhand, India, providing further evidence of its range extension and high elevation occurrence. Here, we present the first record of the WFS from Kishtwar Valley, Jammu and Kashmir, India, which may signal the presence of another population from the Kashmir Himalayas. Not only does the Woolly Flying Squirrel seem to share a large part of their distribution with snow leopards, they have also been identified as potential though obviously rare or very rare prey for snow leopards, *Panthera uncia* (Pal et al., 2020).

Thirty-four camera traps were deployed on different trails for Snow Leopard population assessment in the Paddar region of Kishtwar, by a team of researchers from the Nature Conservation Foundation. The cameras were set for 45 days between October-November 2023, primarily between 3000-4500m at different locations. Multiple camera trap images of the Woolly Flying



Figure 1: Camera trap images of Woolly Flying Squirrel at 3500m elevation in Kishtwar region of Jammu & Kashmir.

Squirrel were captured on different dates between October and November 2023 from one camera (N33.38771, E76.40375, elevation = 3500m). The pictures were cross-checked and identified as Woolly Flying Squirrel (Fig 1) based on a thick, bushy, and cylindrical tail, dense fur, and visual size comparison with the Small Kashmir Flying Squirrel (*Euglaucomys fimbriatus fimbriatus*) from other areas. The habitat from where this record was obtained is a typical rocky cliff, with a Juniper (*Juniperus sp*) patch and few Birch (*Betula utilis*) trees around (Fig 2). The same camera trap also recorded the presence of an individual snow

leopard. These photographic records document the first-ever evidence of this species from this Snow Leopard landscape and represent an important finding distinguishing its distribution with the lesser-known Woolly Flying Squirrel. The nearest known distribution of the Woolly Flying Squirrel (WFS) is ca 250km distant (Neelum Valley, Pakistan), whereas the southern most range extension record is from Harsil Valley, Uttarakhand, India, approximately 345km away. Finally, the role of this squirrel as the potential prey for snow leopards warrants further investigations.

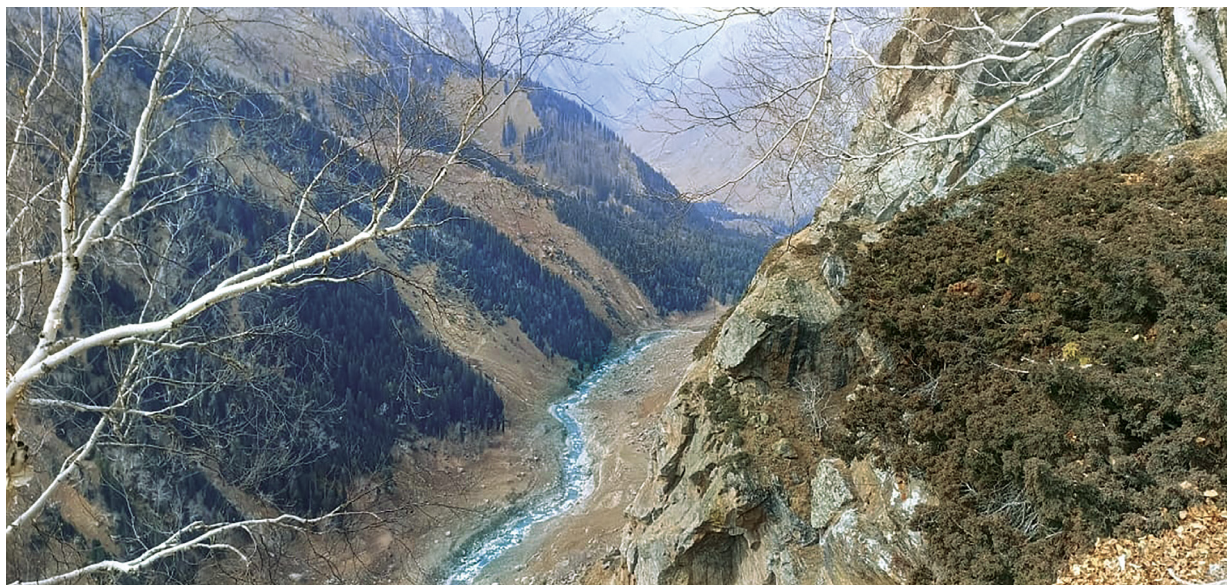


Figure 2: Habitat profile of the location. A camera trap was deployed near the Juniper patch on the right of the picture. Photo by Tanzin Thuktan.

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## Conflict of Interest

No known conflict of interests.

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