

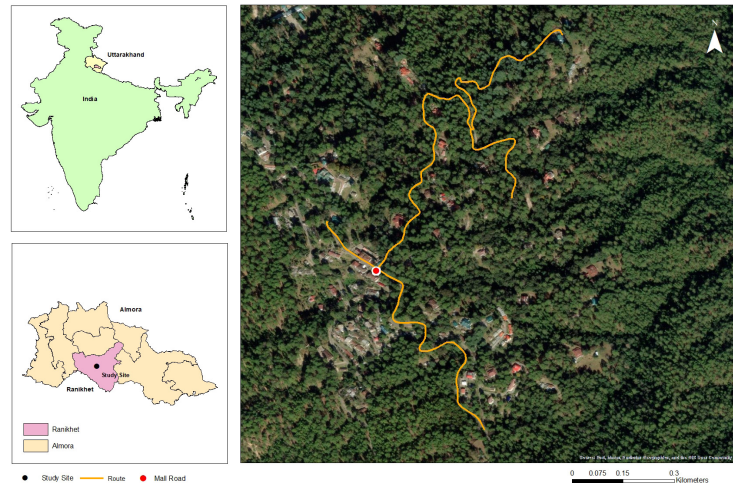


Nocturnal gliders and hidden threats: natural history notes on the flying squirrels of Kumaon Himalaya

The family Sciuridae is represented by 285 squirrel species (58 genera) with different lifestyles viz., arboreal, ground-dwelling and flying squirrels (Thorington et al. 2012). There are nearly 48 species of flying squirrels belonging to 15 genera (Thorington et al. 1996) are present in the world and they majorly occur across North America, Eurasia, and southern & southeastern Asia (Koprowski & Nandini 2008). Squirrels play key roles in forest ecosystem which include pollination, seed dispersal and predator-prey relations (Zahler & Dietemann 1999; Ganesh & Devy 2006; Fan & Jiang 2009).

Flying squirrel diversity is high in eastern Himalaya of India, but as per the literature only three species have been recorded from the Indian western Himalaya, namely, White-bellied Flying Squirrel *Petaurista albiventer*, Small Kashmir Flying Squirrel *Eoglaucomys fimbriatus*, and the endangered Western Woolly Flying Squirrel *Eupetaurus cinereus* (Koli 2016; Pal et al. 2018; Menon 2023).

Flying squirrels are one of the least studied mammalian species of



The study site and survey routes.



White-bellied Flying Squirrel recorded during spotlight survey. © Mirza Altaf Baig.



Injured White-bellied Flying Squirrel on the forest floor. © Mirza Altaf Baig.



Nest of White-bellied Flying Squirrel on *Eucalyptus globulus* tree. © Mirza Altaf Baig.



Electrocuted White-bellied Flying Squirrel near Mall Road, Ranikhet. © Mirza Altaf Baig.

Uttarakhand as information about their natural history from the state is nearly nonexistent (Pasha & Suhail 1997; Pal et al. 2018; Chetia & Chatakonda 2024). In early 2024, we undertook a short exploratory field trip in Ranikhet, Almora District, Uttarakhand, aiming to document

arboreal nocturnal mammals. During this visit, we conducted spotlight surveys focused specifically on the flying squirrels—an often overlooked yet ecologically significant mammalian group.

During February 2024, we conducted 12-night walks (1830–2230 h) around the mall road vicinity of Ranikhet, a peri-urban hill landscape dominated by *Pinus roxburghii* and *Quercus leucotrichophora*. Using a red LED headlamp and flashlight, we scanned the canopy and identified individuals by visual markers and photographic documentation (Krishna et al. 2016).

During these spotlight surveys, we recorded 21 individuals of the White-bellied Flying Squirrel and a single individual of Small Kashmir Flying Squirrel (Yu et al. 2006; Menon 2023). Observations included gliding behavior, resting postures, vocalizations, and feeding activities—particularly on oak leaves, bark, acorns, and resin from pine trees.

Detailed observations of flying squirrels around the mall road area of Ranikhet, Almora District, Uttarakhand.

Species	Time of sightings	Elevation (m)	Number of individuals	Activity
Small Kashmir Flying Squirrel (<i>E. fimbriatus</i>)	1955 h	1,869	1	Resting
White-bellied Flying Squirrel (<i>P. albiventer</i>)	1830–2230 h	1,822–1,881	21	Resting, gliding, calling, feeding on leaves, bark and acorn of <i>Quercus leucotrichophora</i> and resin of <i>Pinus roxburghii</i>



An active cavity nest was also documented on a tall *Eucalyptus globulus* tree.

While the detection of two flying squirrel species is encouraging and reaffirms their presence in the mid-elevation forests of Kumaon (1,800-1,900 m), the short survey also revealed emerging threats to their survival. Two cases of electrocution involving *P. albiventer* were documented during active surveys. In one instance, a flying squirrel was observed bursting into flames after simultaneously contacting a live 11 kV wire and an oak tree trunk at close proximity (< 20 cm). The second incident occurred at a similar elevation near a build-up area with overhead powerlines. These observations suggest that habitat fragmentation and the increasing density of low-hanging electrical wires pose serious risks to flying squirrels in hill towns, particularly during their long-distance gliding attempts.

To assess local perceptions and ethnozoological connections, we conducted informal interviews with residents, including shopkeepers, students, and former hunters. Interestingly, most locals referred to flying squirrels as “flying foxes”, with majority believing them to be carnivorous or insectivorous. One respondent claimed they snatch human eyes while gliding overhead, while another described the use of their nails as protective amulets for children. These beliefs, while deeply rooted in folklore, may hinder conservation awareness and rescue efforts, especially in the cases of electrocution.

This short field study suggests that both *P. albiventer* and *E. fimbriatus* continue to persist in the Kumaon Himalaya despite

urban pressures. To our knowledge, this is the first focused survey of flying squirrels conducted in the Kumaon region. The study not only confirmed their local presence but also highlighted key threats to the species and revealed local community perceptions surrounding these nocturnal gliding mammals. However, flying squirrels remain absent from public awareness and conservation focus.

Notably, *E. fimbriatus* is still unlisted under India’s Wildlife (Protection) Act of 1972, despite being restricted to high-elevation forests and facing threats like habitat loss. In contrast, *P. albiventer* as listed under Schedule I of the WPA, and yet very little conservation action is directed towards the species.

Electrocution-related mortality should be considered a critical and growing threat for arboreal gliders in hill landscapes where forest canopies intersect power infrastructure. There is an urgent need to insulate live wires, especially in forest-edge or tree-rich urban zones, to prevent such incidents.

Additionally, local education programs, ecotourism models, and wildlife rescue training for hill town residents can foster co-existence and conservation. This study, although short in duration and spatial scale, serves as a baseline for future studies and points to the ecological importance of even small forest patches. A more comprehensive approach using camera traps, acoustic monitoring, and long-term spotlight surveys could yield richer insights into the population dynamics and behavior of these elusive mammals.



References

Chetia, H. & M.K. Chatakonda (2024). Rarest of the rare: people's awareness and perceptions about the woolly flying squirrel in Uttarakhand Himalaya, Northern India. *Integrative Conservation* 3(3): 281–285.

Fan, P. & X. Jiang (2009). Predation on giant gliding squirrels (*Petaurista philippensis*) by black crested gibbons (*Nomascus concolor jingdongensis*) at Mt. Wuliang, Yunnan, China. *Primates* 50(1): 45–49.

Ganesh, T. & M.S. Devy (2006). Interactions between non-gliding mammals and flowers of *Cullenia exarillata* Robyns (Bombacaceae), a canopy tree from the wet forests of Western Ghats, India. *Current Science* 90(12): 1674–1679.

Koli, V.K. (2016). Biology and conservation status of flying squirrels (Pteromyini, Sciuridae, Rodentia) in India: An update and review. *Proceedings of the Zoological Society* 69(1): 9–21.

Koprowski, J.L. & R. Nandini (2008). Global hotspots and knowledge gaps for tree and gliding squirrels. *Current Science* 95(7): 851–856.

Krishna, M.C. et al. (2016). Diversity, distribution and status of gliding squirrels in protected and non-protected areas of the Eastern Himalayas in India. *Hystrix-Italian Journal of Mammalogy* 27(2): 111–119.

Menon, V. (2023). *Indian Mammals: A Field Guide*. Hachette Book Publishing India Pvt. Ltd., India, 544 pp.

Pal, R. et al. (2018). Range extension and high elevation record for the endangered woolly flying squirrel *Eupetaurus cinereus* in western Himalaya, India. *Mammalia* 83(4): 410–414.

Pasha, M.K.S. & I. Suhail (1997). Range extension of the Kashmir Flying Squirrel (*Hylopetes fimbriatus* Gray). *Journal of the Bombay Natural History Society* 94: 395–396.

Thorington, R.W. Jr., et al. (1996). Validity of three genera of flying squirrels: *Eoglaucomys*, *Glaucomys*, and *Hylopetes*. *Journal of Mammalogy* 77(1): 69–83.

Thorington, R.W. Jr. et al. (2012). *Squirrels of the World*. Johns Hopkins University Press, Baltimore, 459 pp.

Yu, F., et al. (2006). Phylogeny and biogeography of the *Petaurista philippensis* complex (Rodentia: Sciuridae), inter-and intraspecific relationships inferred from molecular and morphometric analysis. *Molecular Phylogenetics and Evolution* 38(3): 755–766.

Zahler, P. & C. Dietemann (1999). A note on the food habits of Eurasian Eagle Owl *Bubo bubo* in northern Pakistan. *Forktail* 15: 98–99.

Mirza Altaf Baig^{1,3*}, Rupali Thakur^{2,4}, Nazneen Zehra^{1,5} & Jamal Ahmad Khan^{1,6}

¹Department of Wildlife Sciences, Aligarh Muslim University, Aligarh, Uttar Pradesh 202002, India.

²Wildlife Institute of India, Chandrabani, Post Box # 18, Dehradun, Uttarakhand 248001, India.

Emails: ³gi3958@myamu.ac.in (Corresponding author)

⁴rupalithakur0204@gmail.com

⁵nzehra@myamu.ac.in

⁶secretarywsi@gmail.com.

Citation: Baig, M.A., R. Thakur, N. Zehra & J.A. Khan (2026). Nocturnal gliders and hidden threats: natural history notes on the flying squirrels of Kumaon Himalaya. *Small Mammal Mail* #459, In: *Zoo's Print* 41(9): 32–35.