

Use of tree cavity for denning by Rusty-spotted Cat in Keonjhar, Odisha

The Rusty-spotted Cat *Prionailurus rubiginosus* is reported as the smallest wildcat of Felidae family in class Mammalia, order Carnivora (Prater 1971; Menon 2014). This species is distributed in the Indian subcontinent, including Nepal, India and Sri Lanka. In India, it is reported from an elevation range up to 2,480 m. Despite wide distribution, it is rarely sighted and categorized as 'Near Threatened' species in the IUCN Red List (Mukherjee et al. 2016) and protected as Schedule I species in the Wildlife Protection Act (1972) of India. It occupies moist and dry deciduous forests, mixed species woodlands, and are observed active in modified habitats and human habitations as adaptive behaviour (Bora et al. 2020; Chaudhary et al. 2022). The population of this species is threatened due to loss of habitat by anthropogenic pressure in the form of modification and disturbance of natural habitats (Mukherjee et al. 2016).

Camera-trap and photographic records provide critical



Rusty-spotted Cat in sleeping position in day den. © Bharati Patel.

evidence for confirming the presence, distribution, and relative abundance of this species (Chaudhary et al. 2022; Palei et al. 2023). The Rusty-spotted Cat predominantly inhabits dry and moist deciduous forests, including isolated forest fragments (Mukherjee et al. 2016). Although it exhibits both terrestrial and semi-arboreal behaviour, the use

of tree cavities has not yet been documented from India, and information on cavity characteristics as well as whether the species is a facultative or obligate cavity user remains unknown (Kumara & Singh 2007). Ecological data and reliable estimates of local abundance are limited, likely due to the species' nocturnal and highly elusive behaviour (Nowell & Jackson



Habitat and host tree. © Bharati Patel.

1996; Bhandari et al. 2025), which continues to constrain the development of effective conservation strategies.

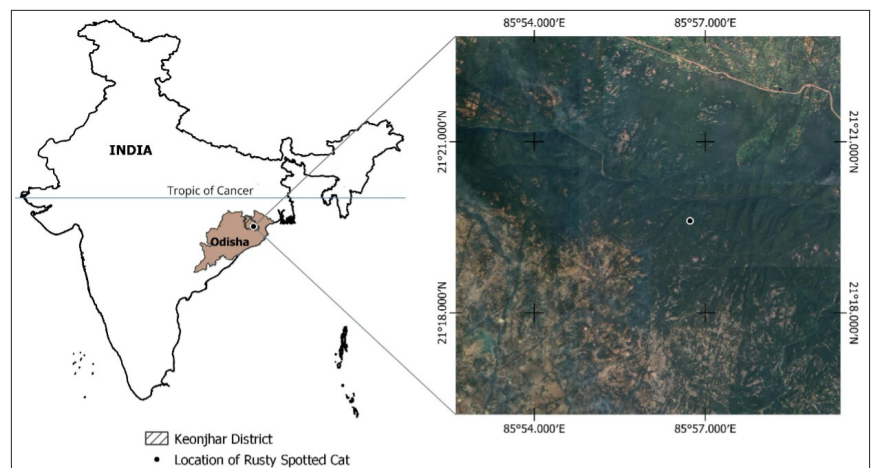
The present report is from Keonjhar wildlife division of Odisha where an adult Rusty-spotted Cat was observed denning in a tree cavity during day on 26 February 2025. The species was observed while inspecting the cavity during the survey of flora and microhabitat structures in the forests of Keonjhar Wildlife Division. The tree height was measured using altimeter. Tree girth and cavity dimensions were measured

using a measuring tape. The characteristics of the host tree and cavity is described below:

The cavity host tree species was an unhealthy *Syzygium nervosum* DC. The girth at

breast height of host tree was 106 cm. Tree height was 24.8 m. Cavity occupied by the Rusty-spotted Cat was at the base of main stem of the tree. It was a naturally formed cavity in the form of hollow stem as core had rotten till base of the tree. Height of cavity entrance was 157 cm, cavity entrance length was 28 cm, cavity entrance width was 17 cm, vertical depth of cavity was 60 cm, horizontal depth of cavity was 36 cm, width of cavity floor was 18 cm, cavity orientation was oriented to the north-east direction. The cat was observed sleeping in the tree cavity with head facing down, hiding between the forelegs. It was identified with its unique fur pattern.

A review of cavity using vertebrates of India lists 517 vertebrate species using cavities as a primary or secondary



Location map showing the observation site of the Rusty-spotted Cat in Odisha.

nesting/denning resource for their survival (Patel et al. 2021). It includes two felines, Jungle Cat *Manis chuas* and Leopard Cat *Prionailurus bengalensis*.

The Rusty-spotted Cat was not listed due to lack of literature and reports on its tree cavity use. With this observation, there is an addition to the list of cavity-users, and 518 species are now known to use tree-cavities.

Large trees and natural cavities are one of the important habitat resources for the Rusty-spotted Cats. The use of tree cavities indicates special habitat requirements of the species. Often, the survival of dependent species depends on the presence of these structures, especially if the species is an obligate cavity user. Considering the type of cavity use reported here, the species can be considered an obligate cavity user. Due to its large body size, this species might prefer large trees.

The species has been reported to use both forests with thick canopy, mixed forests, thorn woodlands and forest areas with anthropogenic activities (Bora et al. 2020; Chaudhary et al. 2022). Therefore, biotic pressure is the biggest threat to the rusty-spotted cats.

Removal of large old, unhealthy and dead trees during salvage logging, for fuelwood collection or considering them as 'hazard trees' in human-dominated landscapes depletes habitat resources for habitat specialist species such as cavity users. Protection of structures such as large dying and dead trees will help to conserve the habitat for these species.

References

- Bhandari, B., V. Thapa, P. Mahatara, N. Dhakal, D. Pariyar, S. Gosai & S.P. Heighton (2025)**. Surviving in a changing world: A systematic review of research trends and threats to the mysterious Rusty-spotted Cat. *Research Square* 5738983/v1
- Bora, J.K., N. Awasthi, U. Kumar, S. Goswami, A. Pradhan, A. Prasad, D.R. Laha, R. Shukla, S.K. Shukla, Q. Qureshi & Y.V. Jhala (2020)**. Assessing the habitat use, suitability and activity pattern of the Rusty-spotted Cat *Prionailurus rubiginosus* in Kanha Tiger Reserve, India. *Mammalia* 84(5): 459–468.
- Chaudhary, R., N. Zehra, A. Musavi & J.A. Khan (2022)**. Status, activity pattern and habitat use of Rusty-Spotted Cat (*Prionailurus rubiginosus*) in Gir Protected Area, Gujarat, India. *International Journal of Ecology and Environmental Sciences* 48(6): 747–753.
- Kumara, H.N. & M. Singh (2007)**. Small carnivores of Karnataka: distribution and sight records. *Journal of the Bombay Natural History Society* 104(2): 155–160.
- Menon, V. (2014)**. *Indian Mammals: A Field Guide*. Hachette Book Publishing India Pvt. Ltd., Gurgaon, India, 528 pp.
- Mukherjee, S., J.W. Duckworth, A. Silva, A. Appel & A. Kittle (2016)**. *Prionailurus rubiginosus*. The IUCN Red List of Threatened Species 2016: e.T18149A50662471. <https://doi.org/10.2305/IUCN.UK.2016-1.RLTS.T18149A50662471.en>. Accessed on 05. viii.2025.
- Nowell, K. & P. Jackson (1996)**. *Wild Cats. Status Survey and Conservation Action Plan*. IUCN/SSC Cat Specialist Group, Gland, Switzerland and Cambridge, UK, 382 pp.
- Palei, N.C., B.P. Rath & S. Nayak (2023)**. Mammalian diversity of Debrigarh Wildlife Sanctuary, Odisha, India. *Journal of Threatened Taxa* 15(4): 23005–23015.
- Patel, B., S. Sivaraman & P. Balakrishnan (2021)**. Use of tree cavities by Indian vertebrates. *Current Science* 121(4): 490–501.
- Prater, S.H. (1971)**: *The Book of Indian Animals*. Bombay Natural History Society and Oxford University Press, 347 pp.

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