



**CONSOLIDATED REPORT FOR
CONSERVATION STATUS OF SMALL AND
MEDIUM-SIZED WILD CATS AT PAKKE-
EAGLENEST LANDSCAPE, ARUNACHAL
PRADESH**

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Executive Summary:

The State of Arunachal Pradesh harbours an extraordinary assemblage of seven species of small and medium-sized wild cats. These lesser-known felids, such as the leopard cat, Asiatic golden cat, clouded leopard, and marbled cat, play critical roles in forest ecosystems as mesopredators, regulating prey populations and serving as indicators of habitat integrity. The western Arunachal landscape offers habitat heterogeneity, with diverse ecological niches that support a range of felid species with differing habitat preferences. While recent camera-trap surveys have expanded knowledge of the distribution of small and medium-sized cats in Arunachal Pradesh, they also highlight the vulnerability of these species to habitat loss, road expansion, and hunting pressures.

The Ministry of Environment, Forest and Climate Change (MoEFCC), Government of India, with State Governments of Arunachal Pradesh, Rajasthan, and Uttar Pradesh, UNDP, WWF-India and the Global Tiger Forum (GTF) is implementing a Global Environment Facility (GEF) funded project titled “Strengthening conservation and resilience of globally significant wild cat landscapes through a focus on small cat and leopard conservation.” This project aims to secure the conservation of globally significant wild cat landscapes in northern, northeastern, and western India through a landscape conservation approach for wild cats that brings together species conservation programs, connects stakeholders, and empowers communities, operating across Protected Areas (PAs), tiger corridors, and buffer zones. The Pakke-Eaglenest project landscape is situated in the districts of West Kameng and East Kameng in the western part of Arunachal Pradesh. It consists of three protected areas: the Pakke Tiger Reserve (TR), Eaglenest Wildlife Sanctuary (WLS), and Sessa Orchid Sanctuary, along with surrounding Reserved and Unclassified Forests. In this regard, WWF-India’s objectives for this project were to provide baseline assessments of presence, occurrence and hotspots of small and medium-sized wild cats in the landscape, based on camera trap and village survey data.

Grid based camera trapping exercise was conducted to photo-capture animals, covering areas in Doimara and Amartala Reserved Forests of Khellong Forest Division, Eaglenest WLS and Sessa Orchid Sanctuary. This survey provided valuable baseline data on the presence and relative abundance of four wild cat species. Clouded leopard and leopard cat occurred at multiple locations in these divisions, whereas fewer detections of marbled cat and golden cat highlight that these species may be rarer and need timely and targeted conservation actions, informed by more in-depth research. The survey also revealed distinct diel activity patterns among sympatric felid species, with varying degrees of temporal overlap that likely reflect strategies for coexistence.

To understand how local communities, perceive small cats, a rapid, semi-structured questionnaire survey was conducted in nine villages close to Pakke TR and Eaglenest WLS. The survey was focused to determine if the respondents can identify small cats in their mother tongue, how they perceive small cats, and the requirements for creating awareness for, and protecting the habitats of the small cats. The results revealed that small cats are observed through casual encounters and as predators of livestock. While small cats were recognized generally, it was found that there is poor association with their identities in native languages and local cultures. One of the stronger links associating small cats with the people was wildlife tourism, especially in villages where tourism is driven by PAs such as Pakke and Eaglenest. The workshops and meetings conducted, concluded that there were many landscape challenges, strengths, and spatial understandings of the Pakke TR, Eaglenest WLS, and Sessa Orchid Sanctuary. Continued, rigorous camera-trap monitoring combined with habitat mapping, prey-base assessment, and community-engaged conservation can therefore both deepen scientific understanding and sustain the living cultures that steward these forests.



Overview:

India supports 11 species of small and medium-sized cats, including jungle cat (*Felis chaus*), rusty-spotted cat (*Prionailurus rubiginosus*), leopard cat (*Prionailurus bengalensis*), fishing cat (*Prionailurus viverrinus*), Asiatic golden cat (*Catopuma temminckii*), marbled cat (*Pardofelis marmorata*), clouded leopard (*Neofelis nebulosa*), caracal (*Caracal caracal*), Pallas's cat (*Otocolobus manul*), Eurasian lynx (*Lynx lynx*), and desert cat (*Felis lybica*). These species range in diverse habitats, from wetlands and grasslands to dense forests, cold deserts and even agricultural mosaics (Kitchener et al., 2017; Kumar et al., 2020). North East India, located at the junction of the Indo-Malayan and Palearctic realms, is a hotspot for small wild cat species. Recent records from Arunachal Pradesh, Assam, and Nagaland reaffirm the significance of North East (NE) India for small cat conservation (Bora et al., 2020).

Arunachal Pradesh, situated in the eastern Himalaya, is one of India's most biodiverse states and harbours an extraordinary assemblage of carnivores, which include seven species of small and medium sized wild cats (Bashir et al., 2011; Selvan et al., 2013). These lesser-known felids, such as leopard cat (*Prionailurus bengalensis*), Asiatic golden cat (*Catopuma temminckii*), clouded leopard (*Neofelis nebulosa*)¹ and marbled cat (*Pardofelis marmorata*), play critical roles in forest ecosystems as mesopredators, regulating prey populations and serving as indicators of habitat integrity (Duckworth et al., 2014; Mukherjee et al., 2019). Despite their ecological importance, small and medium-sized wild cats remain underrepresented in ecological studies, with most research in India historically concentrated on larger felids such as tigers and leopards (Kawanishi & Sunquist, 2004; Lyngdoh et al., 2017). Recently, there has been an assessment by National Tiger Conservation Authority (NTCA) and Wildlife Institute of India (WII) on the status of small cats in tiger landscapes of India, where the occupancy status of the three rare and elusive species of NE India were respectively - clouded leopard 3250 km² (2250 - 3725), marbled cat 2325 km² (1375 - 3550), and Asiatic golden cat 1850 km² (1400 - 3075) and these were limited to dense forests of Northeast India (Habib et al., 2025).

The western Arunachal landscape, particularly the contiguous forests of Pakke, Eaglenest, Khellong, and Sessa, offers a unique setting to explore the ecology of these elusive species. This region spans a steep altitudinal gradient, ranging from subtropical evergreen forests in the foothills to temperate and cloud forests at higher elevations (Datta et al., 2008; Choudhury, 2013). Such habitat heterogeneity provides diverse ecological niches that support a range of felid species with differing habitat preferences. Leopard cats are adaptable generalists found across disturbed and undisturbed forest types, while marbled cats are more closely tied to intact, closed-canopy forests, and golden cats occupy a variety of elevations but are typically associated with dense forest cover (Bashir et al., 2011; Ross et al., 2015).

Pakke Tiger Reserve (TR), with its riverine and lowland forests, has yielded photographic evidence of all three species, demonstrating its importance as a refuge for forest-dependent carnivores (Datta et al., 2008; Srivathsa et al., 2020). Pakke TR and adjacent Papum



forests are characterised by humid tropical and subtropical forests at lower elevations that rise into rich foothill and mid-elevation rainforest. Eaglenest Wildlife Sanctuary (WLS) and its adjoining areas, including Khellong and the Lama/Bompu corridors, provide closed-canopy structurally complex habitats, a steep elevation gradient and a rare mix of subtropical broadleaf trees, temperate oak-rhododendron stands and cloud forest. Marbled cats and golden cats are regularly recorded in these habitats, often in association with bamboo stands and montane broadleaf forests (Bashir et al., 2011; Aiyadurai & Singh, 2019). Sessa Orchid Sanctuary, although smaller in size, represents a critical link in maintaining habitat connectivity, supporting both prey diversity and the fine-scale habitat features essential for these felids (Rai et al., 2019). Sessa and the Khellong areas are particularly notable for their high orchid and avian diversity, but they are equally important for small carnivores because intact understory and bamboo thickets provide structural complexity and prey availability like small mammals, birds, and arboreal rodents. Additionally, a landmark wildlife survey conducted in Arunachal Pradesh by WWF-India in 2024 has recently revealed the first-ever photographic evidence of the elusive Pallas's cat in the state from Tawang, West Kameng district. Alongside, photocapture records of clouded leopard, marbled cat and leopard cat have also been found in this survey. (<https://www.wwfindia.org/?27922/first-photographic-record-of-pallass-cat>).

While recent camera-trap surveys have expanded knowledge of small and medium-sized cat distributions in Arunachal Pradesh, they also highlight the vulnerability of these species to habitat loss, road expansion, and hunting pressures (Singh & Macdonald, 2017; Rashid et al., 2022). The small-cat guild in Arunachal Pradesh faces several anthropogenic and landscape-scale threats like forest fragmentation from proposed and existing road projects, shifting agricultural fronts and infrastructure development, retaliatory persecution when cats are perceived to threaten poultry, and competition/edge effects near human settlements. Recent large-scale camera-trap surveys in Arunachal Pradesh have even extended the known altitudinal ranges of several felids documenting high-elevation detections that challenge prior assumptions about habitat limits, underscoring both the resilience of these species and the urgent need for fine-scale ecological data to inform management across elevation belts.

Conservation of small wild cats in the Arunachal Landscape is not only about safeguarding predators but also about preserving the ecological resilience of North east Himalayan forests. Continued, rigorous camera-trap monitoring combined with habitat mapping, prey-base assessment, and community-engaged conservation can therefore both deepen scientific understanding and sustain the living cultures that steward these forests. Importantly, these forests are interwoven with the lives and stewardship of local communities, such as the *Nyishi*, *Bugun*, *Monpa*, and *Sherdukpen*, whose traditional practices and emerging community conservation initiatives have played a decisive role in protecting wildlife (Tag et al., 2020). Together, these landscapes and their people provide a powerful opportunity to advance both ecological understanding and inclusive conservation of small and medium-sized wild cats in one of India's last great wilderness frontiers.

¹**Note:** The large cat lineage (*Pantherinae*), which includes tigers (*Panthera tigris*), lions (*Panthera leo*), leopards (*Panthera pardus*), jaguars (*Panthera onca*), and snow leopards (*Panthera uncia*), is phylogenetically closer to the clouded leopard (*Neofelis nebulosa*) (Kitchener et al., 2017). Clouded leopard shares physical characteristics of big cats, such as a powerful skull and lengthened upper canines (Christiansen, 2006). An estimated 6.4 million years ago, the *Neofelis* branched off from the ancestral line that led to *Panthera* (Johnson et al., 2006; O'Brien & Johnson, 2007; Kitchener et al., 2017). Its ossified hyoid bone more closely resembles that of small cats (Hemmer, 1978; Christiansen, 2006; Weissengruber et al., 2002), and thus it lacks the ability to roar. It is thus, considered a medium-sized cat.



Project Background:

The Ministry of Environment, Forest and Climate Change (MoEFCC), Government of India, with State Governments of Arunachal Pradesh, Rajasthan, and Uttar Pradesh, UNDP, WWF-India and the Global Tiger Forum (GTF) is implementing a Global Environment Facility (GEF) funded project titled “Strengthening conservation and resilience of globally significant wild cat landscapes through a focus on small cat and leopard conservation.” This project aims to secure the conservation of globally significant wild cat landscapes in northern, north-eastern and western India through a landscape conservation approach for wild cats that brings together species conservation programs, connects stakeholders and empowers communities, and operates across Protected Area (PA)s, tiger corridors and buffer zones.

Each project landscape is built around a key PA for wild cat conservation and surrounding buffer zones that contain important habitats for small cats. Activities are being conducted within PAs, buffer zones (demarcated as up to 10km around each PA) and identified tiger corridors within these landscapes. The project landscapes are - Dudhwa landscape in Uttar Pradesh, and Pakke – Eaglenest landscape in Arunachal Pradesh. In addition, Ranthambhore landscape in Rajasthan is covered under the UNDP GEF funded components of the project for soft support (e.g. staff training) and as such is excluded from the scope of WWF/GTF/GEF intervention.

Project Objective:

The project objective is to secure populations and habitats of wild cats, subject to habitat encroachment, human-wildlife conflict, poaching and illegal trade in priority landscapes of northern, north-eastern and western India. This will be achieved through four complementary components that aim to:

Component 1: build the required enabling policy framework and institutional capacity.

Component 2: strengthen government management of wild cats and habitats.

Component 3: build community stewardship at landscape level.

Component 4: enhance corporate sector partnerships, regional collaboration, and knowledge transfer and learning.

Components 2 and 3 (GTF/GEF funded) will be implemented in two project landscapes (Dudhwa and Pakke-Eaglenest), putting in place the required local capacity, collaborations and community stewardship for landscape-scale conservation in globally-significant landscapes for wild cats that are focused on Key Biodiversity Areas (KBAs) where small cat distribution overlaps with big cat habitats. Component 2 will bring together key Government departments with roles to play in wild cat conservation to support the implementation of landscape-scale master plans. This will help to build a complementary and coordinated action portfolio for wild cat conservation bringing together big cat and small cat conservation under the guidance and supervision of NTCA. Working in parallel with Component 2, in the same wild cat landscapes,



Component 3 will build community stewardship and engagement towards the co-management of wild cat habitats.

Project Landscape - Pakke – Eaglenes landscape in Arunachal Pradesh:

The Pakke-Eaglenes project landscape is situated in the districts of West Kameng and East Kameng in the western part of the State of Arunachal Pradesh, India. It consists of three protected areas, the Pakke TR, Eaglenes WLS, Sessa Orchid Sanctuary (OS) and surrounding Reserved and Unclassified Forests in Arunachal Pradesh. In the south, the landscape is contiguous with Nameri TR in Assam and in the West with Sakteng WLS in Bhutan. The Pakke river forms the eastern boundary of the Pakke TR and landscape. Altogether it forms a large tract of forested landscape in the mountains of Eastern Himalaya, spreading across more than 3000 km². The PAs of Pakke TR (862 km²), Sessa OS (100 km²) and Eaglenes WLS (217 km²) cover a large altitudinal gradient from the foothills in Pakke to about 3000 m asl in the Eaglenes WLS, thus encompassing a large fraction of the biodiversity of this exceptionally biodiverse part of the Himalaya. It harbours seven small and medium-sized cat species - jungle cat, fishing cat, leopard cat, marbled cat, Asiatic golden cat, Pallas's cat and clouded leopard along with the big cats – tiger, leopard and snow leopard. The pronounced altitudinal gradient is associated with and a corresponding ecological gradient from lowland tropical evergreen (below 1000 m), subtropical (1000 m –2000 m) to temperate broadleaved and temperate coniferous forest (above 2000 m). The treeline in the Eastern Himalaya is at about 4000 m. Project activities in Components 2 and 3 mainly focus on the buffer zone areas of Eaglenes WLS and Pakke TR, including parts of Tenga Reserved Forest and Papum Reserved Forest.

Project Deliverables by WWF-India:

Output 1

Strengthened policy, planning and institutional framework for wild cat conservation in accordance with the National Wildlife Action Plan 2017-2031.

Output 1.1

Landscape level master plans for wild cat conservation developed and institutionalized into Government plans and programs for Arunachal Landscape

Deliverables

- i. Assessment of small cat presence in Arunachal Landscape
- ii. Documenting occurrence of small cat species using camera trap data
- iii. Documenting occurrence of small cats based on indirect evidence (field and village survey)
- iv. Identify probable hotspots of small cat species in Arunachal Landscape
- v. Threat to small cat habitat



Chapter 1: Understanding the Distribution of Small Cats in the Foothills of West Kameng District of Arunachal Pradesh

1.1 Introduction:

The foothill forests of West Kameng district in Arunachal Pradesh form a unique ecological transition between the plains of Assam and the montane forests of the Eastern Himalaya. This region harbours a remarkable diversity of flora and fauna, including several species of small wild cats that occupy a range of habitats from dense evergreen forests to tea gardens and human-modified landscapes. Despite their ecological importance, information on the occurrence and distribution of small cats in the foothills of West Kameng remains scarce. Most available records are either incidental or part of broader mammalian surveys, leaving significant gaps in understanding their habitat associations, elevation ranges, and adaptability to changing landscapes. Given the rapid pace of land-use change, particularly along the foothill corridor, it is increasingly vital to document and understand where these species persist and how they utilize this heterogeneous environment. This chapter aims to explore the distributional patterns of small wild cats across the foothill landscape of West Kameng, contributing to a clearer picture of their ecological presence and informing future conservation planning in this biodiversity-rich frontier.

1.2 Study Area:

The study area comprises a biodiverse and ecologically significant landscape located in the West Kameng district of Arunachal Pradesh, India. It includes the Doimara and Amartala Reserved Forests within the Khellong Forest Division, the Eaglenest Wildlife Sanctuary, and the Sessa Orchid Sanctuary (Figure 1). This region lies within the Eastern Himalaya, a globally recognized biodiversity hotspot, and showcases a wide range of altitudinal gradients from subtropical forests to temperate and alpine zones. The Eaglenest Wildlife Sanctuary is particularly renowned for its avifaunal diversity, including the discovery of the rare Bugun liocichla, while the Sessa Orchid Sanctuary is celebrated for its remarkable variety of orchids and other endemic plant species. Together, these protected areas form an interconnected ecological corridor that supports high levels of species richness and endemism, making the region crucial for biodiversity conservation and ecological research.

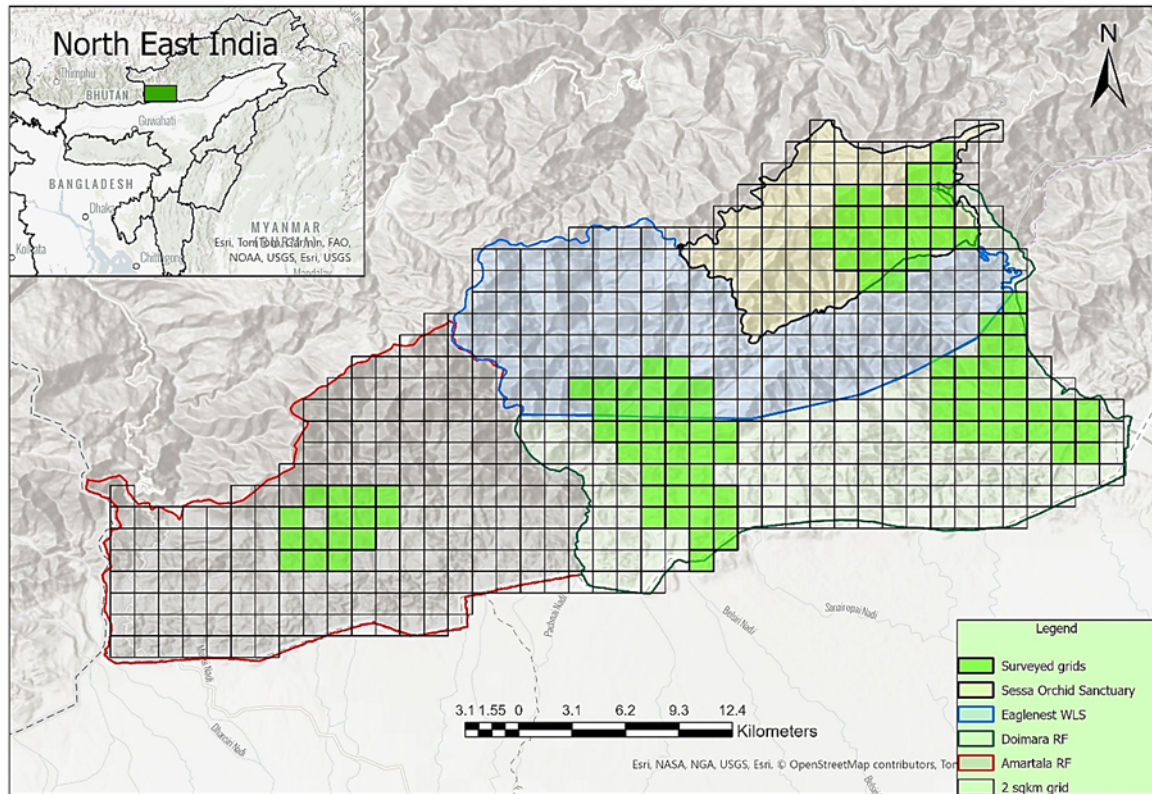


Figure 1: Study area with surveyed grids and deployed camera traps

1.3 Survey Methods:

Grid based (1.4 x 1.4 km) camera trapping exercise was conducted to photo-capture animals, covering areas in Doimara and Amartala Reserved Forests of Khellong Forest Division, Eaglenest Wildlife Sanctuary and Sessa Orchid Sanctuary. WWF-India deployed 107 cameras, with one camera trap in each grid, between November 2024 to April 2025. Camera traps were strategically positioned along trails, roads, or riverbanks after surveying the area for signs of wild animals to optimize the chances of capturing large and medium sized mammals.

1.4 Results and Discussion:

The findings present baseline information for small cat species documented and their photo-capture rate index (PCRI). The total number of camera trap nights was 5318, with a mean of 49.7 trap night (SD $\pm$ 20.6) per camera trap station. Each photograph was manually checked to identify the species. A PCRI indicates the frequency with which a species is photo-captured at a location at specific time intervals. For this, captures that were 30 minutes apart for each station were considered independent events. This was divided with the total camera trap-effort for that station (the number of trap days) and expressed as a rate per 100 trap-days (Carbone et al. 2001). The photographic records to estimate naïve occupancy and to indicate species presence in that particular grid were used.



1.4.1 Species photo-captured

Total 4 species of small cats recorded during the survey among which Clouded Leopard was found to be most photo-captured, followed by the Leopard Cat and Marbled Cat. Clouded Leopard shows the highest number of stations where it was detected (17), highest number of independent events (24), and the highest PCRI (0.45). This indicates a relatively high level of activity and detectability in the study area, which may be in part to the species ranging over larger areas relative to the sympatric small cats. Leopard Cat, classified as Least Concern, also shows high detection levels, with 19 independent events across 14 stations and a PCRI of 0.36. This suggests it's widely distributed and relatively abundant in the area. Marbled Cat and Golden Cat, both classified as Near Threatened, show lower detection rates, with 12 and 6 independent events respectively. Their PCRI values are also lower (0.23 and 0.11), indicating lower encounter rates.

Table 1: Details of the species photo-captured

Species	Scientific Name	IUCN Status	Camera trap stations photo-captured	Total Photographs Obtained	Independent Events	PCRI	Naïve Occupancy
Clouded Leopard	<i>Neofelis nebulosa</i>	VU	17	29	24	0.45	0.16
Golden Cat	<i>Catopuma temminckii</i>	NT	3	7	6	0.11	0.03
Marbled Cat	<i>Pardofelis marmorata</i>	NT	6	13	12	0.23	0.06
Leopard Cat	<i>Prionailurus bengalensis</i>	LC	14	19	19	0.36	0.13

VU: Vulnerable; NT: Near Threatened; LC: Least Concern

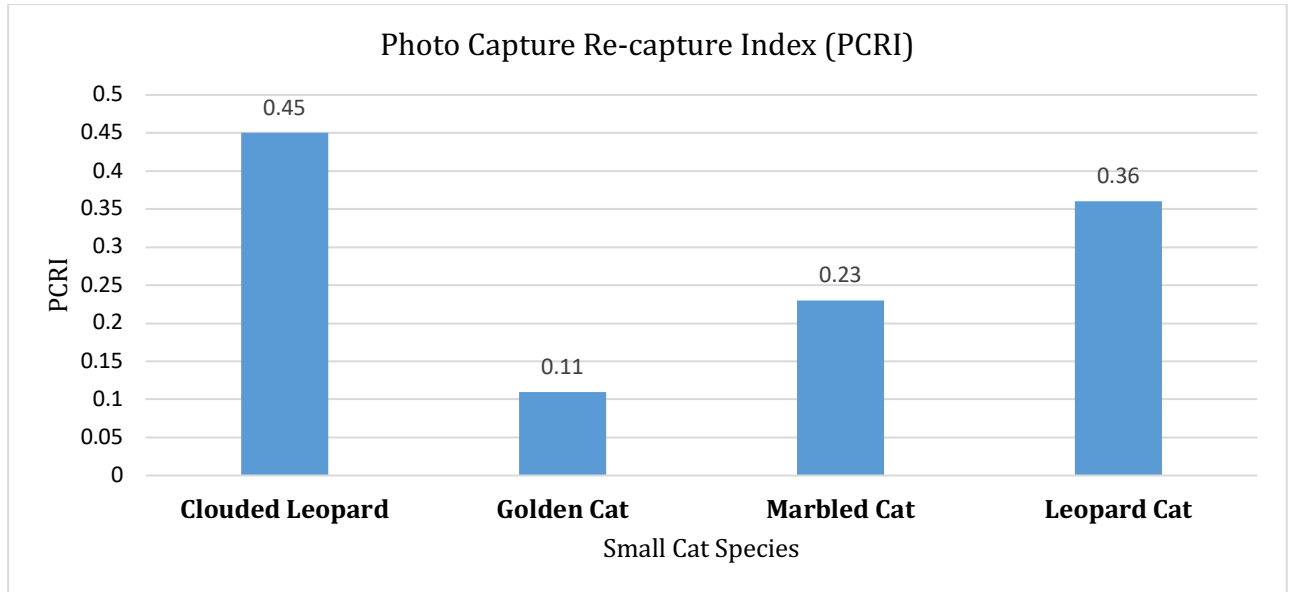


Figure 2: PCRI of 4 small cat species recorded during West Kameng foothills survey, 2025

1.4.2 Distribution of Small Cats:

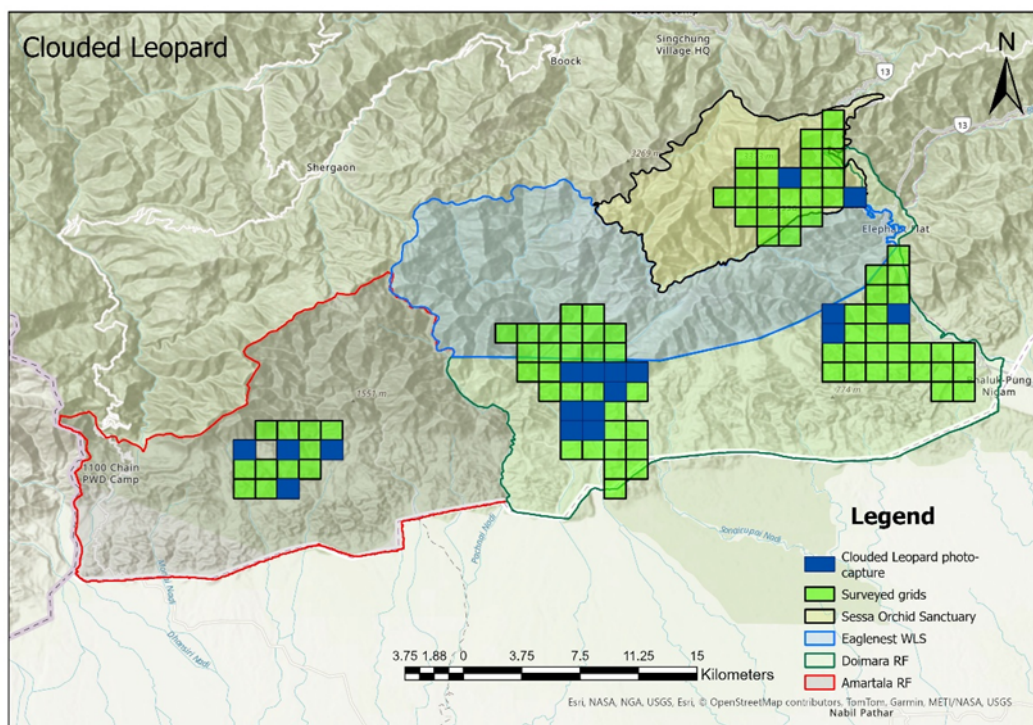


Figure 3: Distribution of Clouded Leopard

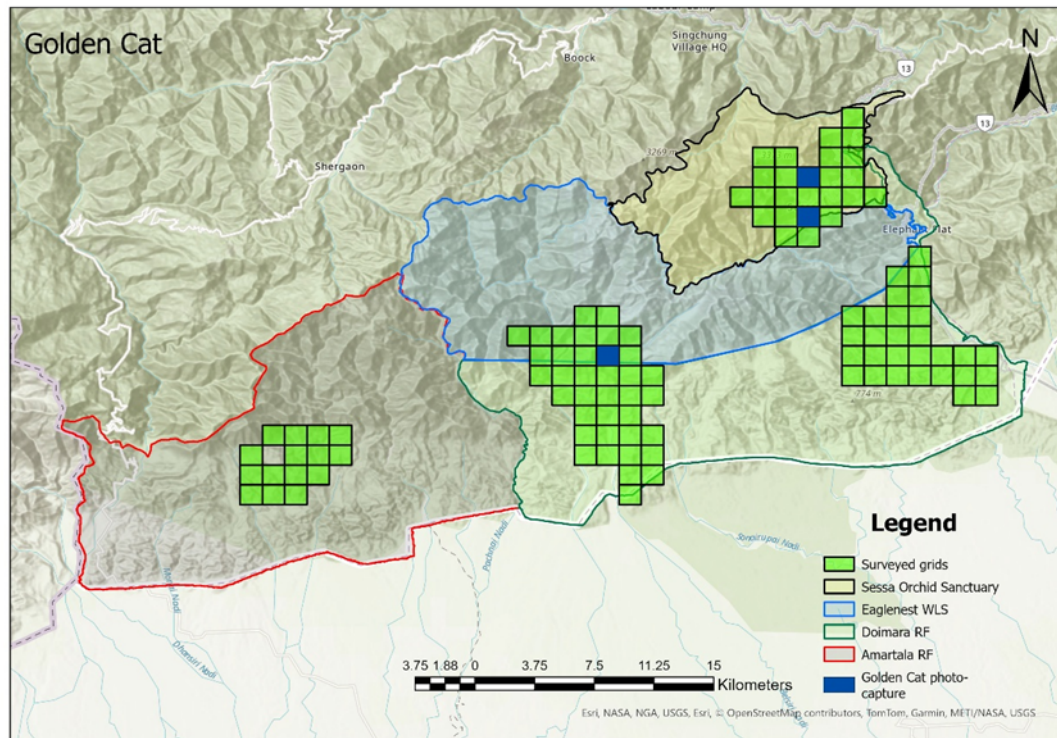


Figure 4: Distribution of Golden Cat

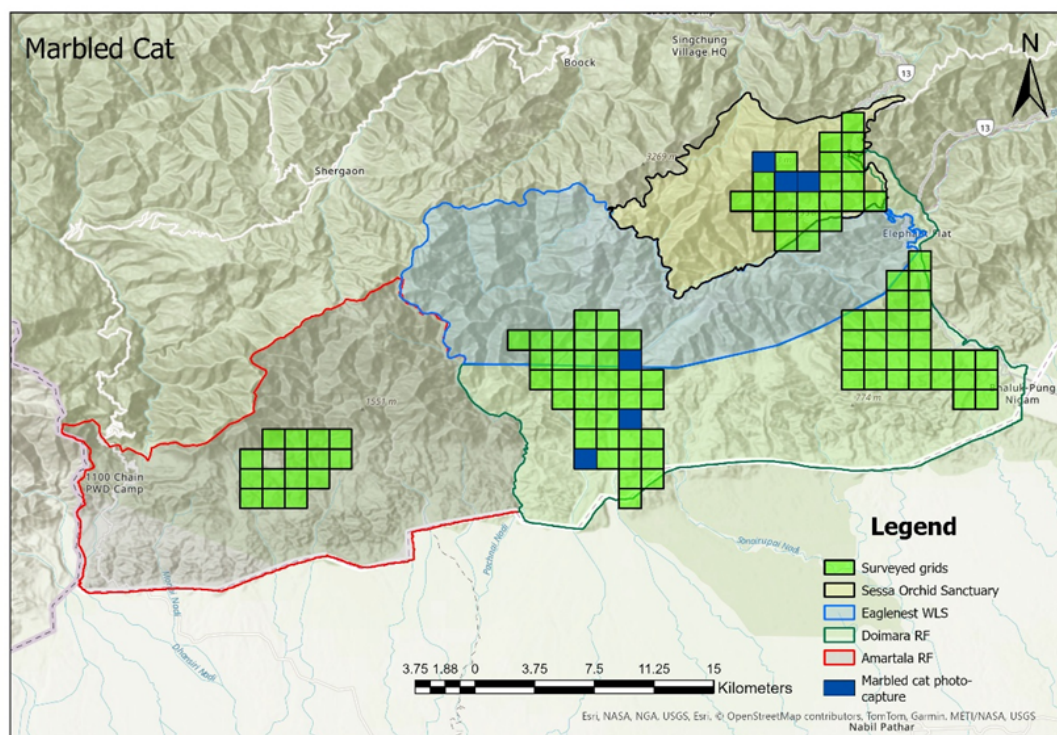


Figure 5: Distribution of Marbled Cat

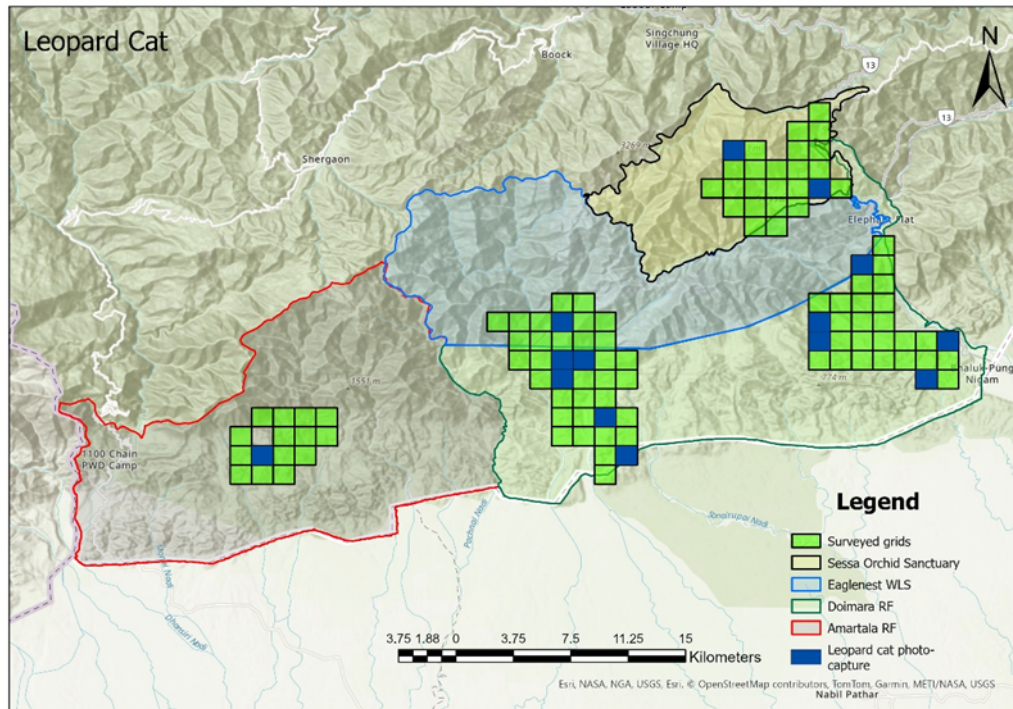


Figure 6: Distribution of Leopard Cat

1.4.3 Activity Pattern of Small Cats:

A total of 61 records were obtained for four felid species: Clouded Leopard ($n = 24$), Asiatic Golden Cat ($n = 6$), Marbled Cat ($n = 12$), and Leopard Cat ($n = 19$). Both the Clouded Leopard and Leopard Cat exhibited low levels of daytime activity, with peak activity occurring during dawn and dusk (Figure 7). In contrast, the Marbled Cat (Figure 7) was primarily diurnal. Due to the limited number of detections for the Asiatic Golden Cat, its activity pattern could not be reliably assessed. The greatest overlap in diel activity was observed between the Clouded Leopard and Leopard Cat ($\Delta I = 0.71$; Figure 8), followed by the Clouded Leopard and Marbled Cat ($\Delta I = 0.49$; Figure 8). However, due to the low number of detections, activity patterns and overlap could not be determined for the Asiatic Golden Cat.

Clouded Leopard ($n = 24$) and Leopard Cat ($n = 19$) showed crepuscular activity, with peaks around dawn and dusk. Both species exhibited low levels of daytime activity, suggesting possible nocturnal tendencies or an adaptation to avoid human disturbance or competition. Marbled Cat ($n = 12$) was found to be primarily diurnal, indicating a different temporal niche from the more nocturnal Clouded and Leopard Cats. This behaviour might reflect differences in prey preferences, predator avoidance, or interspecies competition. Asiatic Golden Cat ($n = 6$) had an insufficient number of detections to reliably determine its activity pattern. The low sample size limits the ability to draw firm conclusions about its diel behaviour.

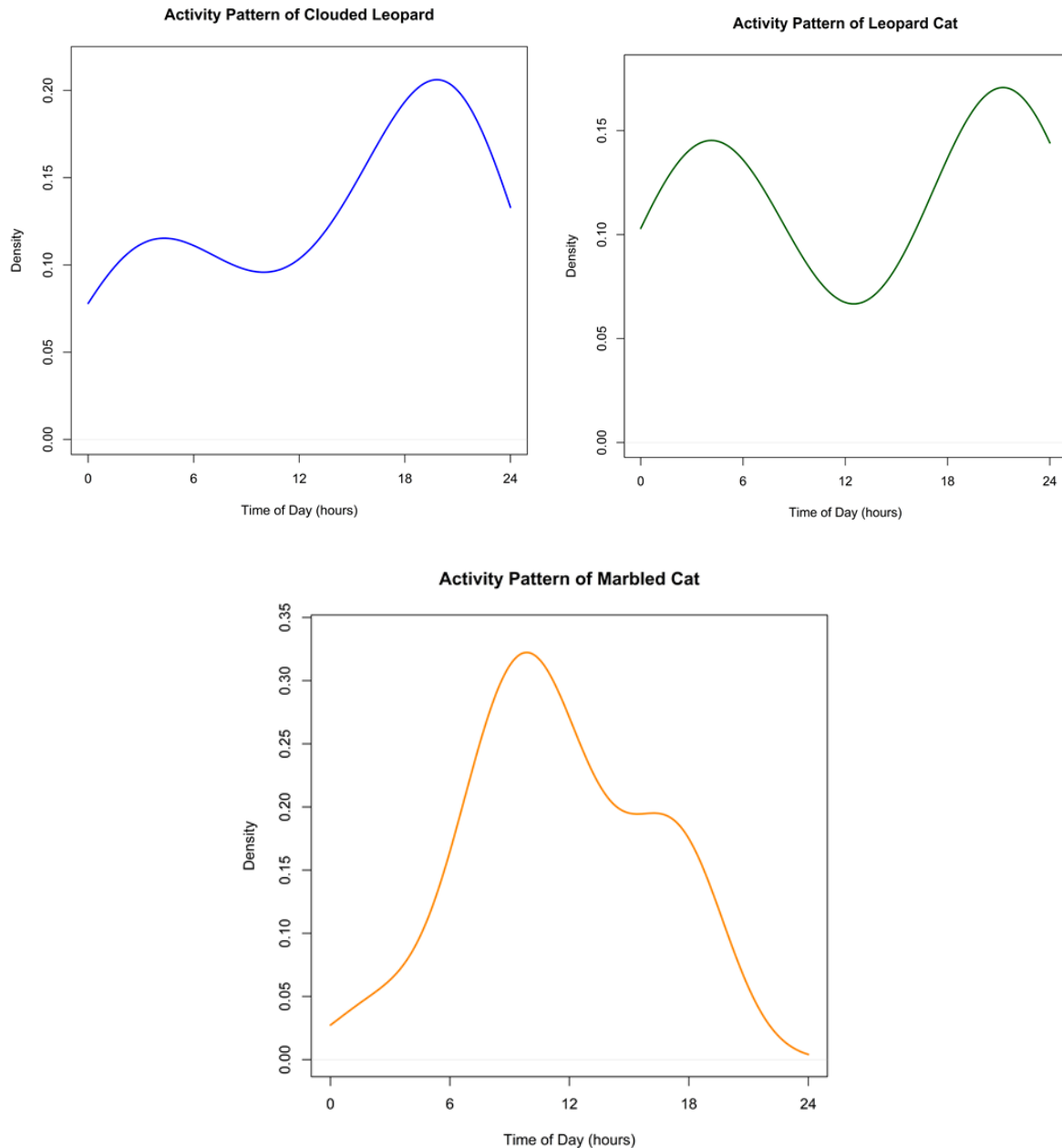


Figure 7: Activity Patterns of Clouded Leopard, Leopard Cat and Marbled Cat

Clouded Leopard and Leopard Cat exhibited the highest diel activity overlap ($\Delta I = 0.71$), suggesting that these two species share similar temporal niches. Despite their size difference and likely dietary separation, this overlap may indicate tolerance of some level of temporal coexistence, possibly facilitated by differing habitat use or prey selection. Clouded Leopard and Marbled Cat had a moderate overlap in activity ($\Delta I = 0.49$), reflecting partial temporal segregation. The Marbled Cat's diurnal behaviour likely reduces direct encounters with the Clouded Leopard, which is primarily active at dawn and dusk. Due to the low number of detections, activity overlap metrics for Asiatic Golden Cat species could not be calculated. This data gap highlights the need for additional targeted surveys or longer-term monitoring to better understand its activity patterns.

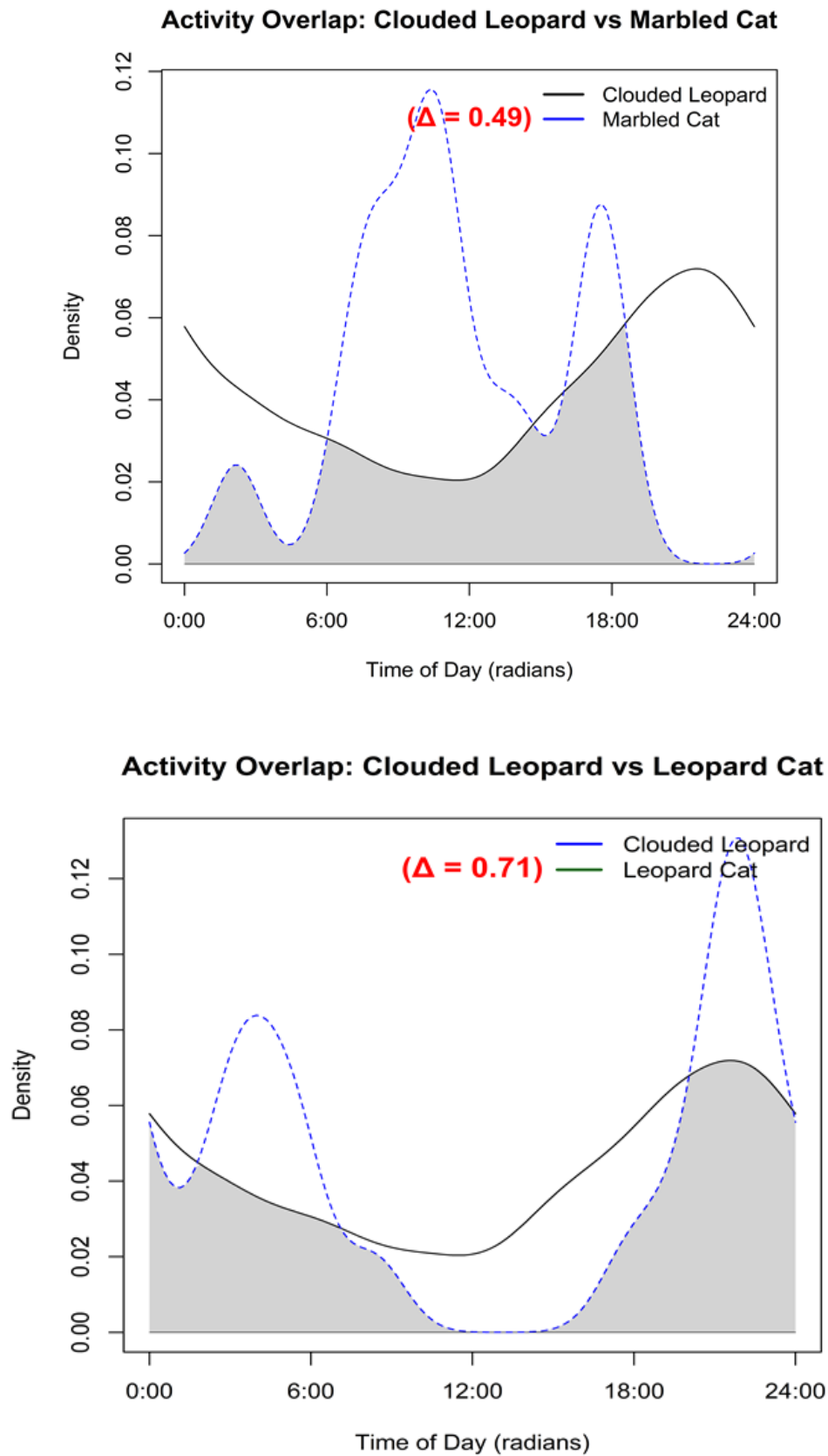


Figure 8: Activity Overlap between small cat species



1.5 Conclusion:

Clouded Leopard, a Vulnerable species, appears to be relatively well represented in this area. Its high PCRI and occupancy suggest that this habitat may be important for its conservation. Golden Cat and Marbled Cat, both Near Threatened, show limited detections and spatial presence. Their low occupancy could indicate either low population density, but it is also possible that they range over small areas and more captures would be obtained by increasing the intensity of camera trapping. Further investigation is needed to confirm the observations. The widespread presence and relatively high detection rate of leopard cats is consistent with its Least Concern status, showing its adaptability and resilience.

This survey provides valuable baseline data on the presence and relative abundance of four wild cat species. While the Clouded Leopard and Leopard Cat show promising signs of population stability within the area, the lower detections of the Marbled Cat and Golden Cat highlight the need for more detailed ecological research and targeted conservation efforts.

This analysis reveals distinct diel activity patterns among sympatric felid species, with varying degrees of temporal overlap that possibly reflect strategies for coexistence. The Clouded Leopard and Leopard Cat share similar crepuscular habits, while the Marbled Cat occupies a more diurnal niche. The data underscore the importance of temporal partitioning in multi-predator ecosystems and highlight knowledge gaps, particularly for the Asiatic Golden Cat, that required further study.

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Chapter 2: Understanding the perceptions regarding small cats in and around Pakke-Eaglenest Landscape, Arunachal Pradesh, India

2.1 Introduction:

Conservation of small and lesser-known species is crucial for maintaining ecological functions, which requires a diversity of niche specialists with unique and irreplaceable functions. Small cats, in their functional role as mesocarnivores, prey on a diverse range of rodents and medium-sized ungulates. With canids, they form a complex community of sympatric carnivores, adapted to share the same space with overlapping niches and food preferences, symbolising a healthy ecosystem. These species are often shy and elusive by nature, rendering it difficult to make direct observations. Camera traps deployed to monitor large carnivores often capture small cats, providing important insights into their occurrence, relative abundance, and behaviour.

Local communities often observe or interact with the wild animals they share their space with. Such incidents, even if fleeting, are memorable due to the rarity of species or people's associations with species based on folklore or cultural value. Small cats, despite being secretive, are encountered by local communities. Not uncommonly, the interactions are also within or near human settlements, as the cats may stalk poultry. These interactions, whether negative or benign, shape people's perception towards a species over time. In addition to such perceptions being informed by direct interactions with a species, they may also be shaped by culture, traditional practices, beliefs, and intersections with livelihood and the economy. For instance, tourism often shapes how wild animals are perceived, since wildlife tourism helps boost the local economy. Similarly, cultures shape perceptions when wild animals, such as tigers and elephants, are revered or otherwise hold significance in worship and beliefs.

Table 1. Small cat species considered for the perception survey in the Pakke-Eaglenest landscape.

S. No	NAME	IUCN STATUS	WLPA STATUS
1	Leopard Cat	Least Concern	Schedule I
2	Marbled Cat	Near Threatened	Schedule I
3	Jungle Cat	Least Concern	Schedule I
4	Fishing Cat*	Vulnerable	Schedule I
5	Asiatic Golden Cat	Vulnerable	Schedule I
6	Clouded Leopard	Vulnerable	Schedule I
7	Pallas's Cat	Least Concern	Schedule I

*Note: *While the Fishing Cat has not been documented from Arunachal Pradesh, it has been listed here based on its potential presence (reported by communities).*



In Arunachal Pradesh, seven species of small cats have been recorded, mainly through camera-trapping exercises. Much of their distribution lies within the lower and middle Himalayan ranges except for Manul. In addition, the leopard and the tiger are also found in the state (Table 1).

To understand how local communities perceive small cats, a rapid, semi-structured questionnaire survey was conducted in nine villages close to Pakke Tiger Reserve and Eaglenest Wildlife Sanctuary. The objective of the survey was to determine if the respondents can identify small cats in their mother tongue, how they perceive small cats, and the requirements for creating awareness for, and protecting the habitats of, the small cats.

2.2 Methodology:

A semi-structured questionnaire-based survey was undertaken between September 16 and September 25, 2025. A total of 21 people were interviewed, with five interviewed individually and the remaining 16 in groups of two to four (11 respondents). A total of 15 participants were men and 6 women. The participants belonged to six communities, comprising 19 individuals from five ethnic groups: Aka, Bugun, Hruso, Monpa, and Nyishi, and two individuals from the Nepali community.

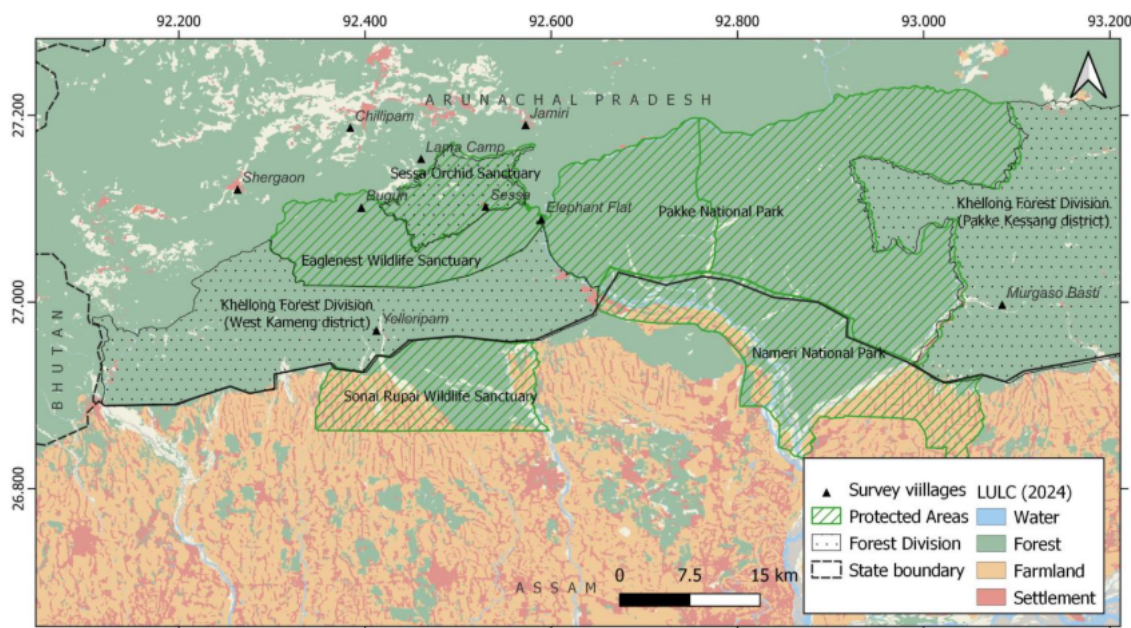


Figure 9: Map showing survey villages with respect to the Protected Areas network of Arunachal Pradesh and Assam. (Map used for representation purposes only.)

The participants hailed from nine villages in two districts, West Kameng and Pakke Kessang. The average altitude of the villages was 1,368 m (SE ± 284 m), the lowest being Murgaso Basti (288 m) and the highest Bugun (2,599 m). The villages were situated close to the following Protected Areas (PAs): Eaglenest Wildlife Sanctuary and Sessa Orchid Sanctuary in West Kameng district and Pakke National Park in Pakke Kessang district (Figure 9).



The survey focused on small cats – primarily cats belonging to family Felidae, in addition to the clouded leopard – with questions aiming at understanding local names of six species of small cats (jungle cat, leopard cat, fishing cat, marbled cat, Asiatic golden cat, and clouded leopard) through printed visual placards used to discuss each species. These cats are recorded from the study area, or are likely to be found in the foothill regions.

2.3 Results and Discussions:

The survey comprised five sections related to: (1) the basic demography of the respondents; (2) awareness about small cats; (3) their interactions and perceptions with small cats; (4) interactions with other wildlife; and (5) about their experiences regarding wildlife conservation, willingness to participate, and alternatives to livelihoods to minimize human-wildlife negative interactions.

2.3.1 Respondent demography:

The villages were situated near forests, with five surrounded by them, one surrounded by three sides, and three located along the mountain foothills in a valley near rivers. Villages above 2,000 m were situated on the mountain slope, and those below 1,000 m were in valleys or at the base of the mountains. The average distance of the villages from the PAs was 3 km (SE $\pm$ 1 km), with two villages, Elephant Flat and Bugun, being along the PA boundaries of Eaglenest Wildlife Sanctuary, and Shergaon being the farthest (5.4 km), although connected to the PAs through the contiguous forests of Shergaon Forest Division. Table 2 summarises the surveyed villages and respondents.

Table 2. List of villages visited and community members surveyed for the study

Village	Community	No. of interviewed individuals	X Coord	Y Coord	Altitude (meters)
Murgaso Basti	Nyishi	2	27.00056	93.08444	288.21
Elephant Flat	Aka	1	27.09222	92.58944	371.99
Jamiri	Hruso	2	27.19333	92.5725	1088.01
Yelloripam (Doimara)	Monpa	1	26.97304	92.41229	450
Yelloripam (Doimara)	Monpa	4	26.97304	92.41229	450
Sessa Camp	Aka	4	27.10611	92.525	1197.68
Sessa	Monpa	1	27.10583	92.52944	1248.15
Shergaon	Sherdukpen	1	27.12417	92.26306	1998
Chillipam	Nepali	2	27.19028	92.38417	2067.55



Lama Camp	Sherdukpen	1	27.15694	92.46028	2374
Bugun	Bugun	2	27.10472	92.39611	2599

Of the 11 respondents, nine practiced farming as main source of livelihood. Four respondents mentioned running a shop, local business, daily wage labour, pickle selling, and animal husbandry as additional sources. Two respondents relied on daily wage labour and tourism as primary livelihood activity. Farmers (eight respondents) cultivated vegetables such as tomato, mustard, ginger, potato, broom grass, corn, cabbage, and kidney beans (rajma). Fruits were also cultivated, including pineapple, banana, orange, watermelon, and apple. One respondent primarily cultivated areca nut and another wheat in addition to vegetables.

All the respondents relied on forests for sustenance or for a certain aspect of livelihood. Forest visits were frequent (from four-times a week to daily, based on requirement) for firewood collection and gathering of herbs and grass. One respondent also collected honey and five relied on forests for livestock grazing. While the respondents primarily relied on non-forest-based livelihoods, forest visits were a part of their daily life. Although hunting was not discussed, it did not come up in conversations either.

2.3.2 Awareness about small cats:

The researchers discussed presence of small cats as observed by the respondents based on visual placards and descriptions provided during the interview. Of the 11 respondents, nine identified Leopard Cat, in addition to Jungle Cat; four identified Clouded Leopard and Marbled Cat each, and three identified Fishing Cat and two Golden Cat. Only one respondent identified a civet based on the description of the animal, distinguishing it from a small cat.

Most of the sightings occurred in the night or when passing through the forest during day time, in the area around the village. While there is a high chance of human error in identification of small cats from memory and based on photographic records which do not give a sense of size, gait, habit, and true colouration, this interview was conducted in absence of photographic (camera trap) records from the immediate surrounding. On being asked if they are able to identify the species based on unique characters or behaviours, the respondents replied in the negative.

Given that these species (excepting the Fishing Cat), have been photo-captured from Pakke National Park and Khellong Forest Division, both surveyed for its mammalian diversity, it is likely that the people may have seen and identified some of them, if not all, with high level of certainty. For instance, some of the respondents were able to distinguish between a Leopard Cat and the Large Indian Civet through its long snout and thick, striped tail. The Fishing Cat (identified by three respondents) are likely to be a misidentification considering the altitude at which these were identified, from 372 m to 2,599 m. While the foothill river valleys of Arunachal Pradesh may be home to the Fishing Cat, the species has not been documented so far, however, peoples' perceptions may offer cues on narrowing the search for this species.



Species of small cats identified by the respondents across the altitudinal gradient of 288 m to 2,599 m were Leopard Cat (nine respondents), Marbled Cat (5 respondents) and Golden Cat (2 respondents). Jungle Cat was identified by four respondents residing across the gradient of 288 m to 1,198 m. Despite a level of uncertainty in identifying small cats in a region where domestic cats roam commonly, we identified a level of awareness regarding small cats vis-à-vis the prominence of large cats such as tiger and leopard that are well-known to the people and present in the landscape.

Local communities have been encountering and interacting with the shy and elusive small cat species for generations. However, small carnivores were not prominent / relatively peripheral in terms of the emphasis on local communities place on this group of species. This is likely because of their rarity, secretiveness, difficulties in identification of the species, as well as their avoidance to places disturbed by human actions.

Local names of small cats

All the five small cats could not be named in the local languages. The respondents, belonging to seven communities identified Jungle Cat, Leopard Cat, Fishing Cat, Marbled Cat, and Clouded Leopard. The Golden Cat was not identified in any local language (Table 3).

Table 3. Local names of small cats identified by respondents

Respondent community	Jungle Cat	Leopard cat	Fishing cat	Marbled cat	Asiatic Golden cat	Clouded leopard
Aka	-	Mufusa	Chi-za	-	-	-
Bugun	Jungli Niyam	-	-	-	-	-
Hruso	Jungli billi	-	Machi billi	-	-	-
Monpa	-	-	Nga-Daning	Daning	-	Phaskong
Nepali	-	-	-	-	-	-
Nyishi	Jungli Assa	Tasso	-	-	-	So-Kung
Skerdukpen	-	-	-	-	-	-

Note: spellings are subject to change and are indicative of how they were pronounced during the interview.

Habitats and frequency of sightings

The major habitats of small cats identified were a combination of dense forest, open forest, and river/streams. Rocky slopes and plains were identified only in Sessa (1,248 m). Given that



much of the habitat along the surveyed villages are forested with a number of rivers and streams, the information provided is also corroborated with camera trap surveys in the adjoining areas (Pakke National Park and Khellong Forest Division), where the small cats share the same habitat with overlapping niches.

While most respondents (five out of 11) mentioned that there is no change or alteration of their habitat, three mentioned habitat loss (one respondent identifying agriculture as the reason), and one mentioned increase in competition with other wildlife in addition to habitat loss. Two respondents mentioned 'don't know'. The respondents were unable to provide information on the natural prey species of small cats, with answers mainly mentioning domesticated animals. Most common answer was chicken. Among wild animals, the respondents mentioned fish, deer, wild goat, and birds, without mentioning specific names.

On discussing which of the cats are commonly seen, all the six cats were categorized as 'common' and five (excepting Marbled Cat) as rare. We found discrepancies in this answer since, despite being common, the local names were not known. Camera trap data from Khellong Forest Division to the west of the survey villages indicates that although small cats may be encountered, they showed aversion to disturbed habitats, where they were less frequently photographed than in undisturbed areas not frequented by humans. The respondents mainly said there is a decrease in their population over the last decade, reducing the frequency of encounters. Two indicated 'hunting' as one of the reasons for this, followed by lack of prey, habitat loss, and four answered 'don't know'.

2.3.3 Interactions with and perceptions about small cats:

The respondents indicated a largely negative interaction with small cats, associating them with livestock loss, primarily poultry and goats. This interaction, however, did not reflect on their perception towards the small cats. Of the 11 respondents, 10 said that they are important part of the ecosystem, their existence indicating the health of the ecosystem. Only one respondent perceived them as a threat due to loss of livestock.

On being asked about the importance of small cats to human wellbeing and the environment, most said that their presence attracts tourists (five responses), one mentioned that they are not dangerous to human life, and one that since it is difficult to capture them, it is easier to protect them (possibly from hunting). In addition to small cats, the tiger, birds, and red panda (Bugun village), were considered as species which attracted tourists.

The discussion also revealed that the respondents did not invoke any specific cultural association with small cats. Two respondents from Monpa and Sherduken communities associating them with bad luck or bad omen. More in-depth conversations to probe this aspect could not be held at this time.

2.3.4 Interactions with wildlife:

To obtain an overall perspective on wildlife in the region, questions pertaining to their occurrence and interactions were documented. The most common wildlife species frequented are elephants (across all except Shergaon (1,998 m) and Bugun villages (2,559 m)) and Wild



Dog (six out of nine villages in the range of 288 m to 1,998 m), followed by Himalayan Black Bear (four out of nine in the range of 1,088 m to 2,374 m), followed by animals such as tiger (two villages), leopard (two villages), monkeys, wild pig, deer, small cat, and wild goat. The list of animals identified is summarized according to the villages in Table 4.

Table 4. List of identified animals venturing in the region of the respondent's residence villages.

Village	Altitude (m)	Distance to nearest PA (km)	Species
Bugun	2599	0	Leopard, Deer, Monkey
Chillipam	2067.55	9	Wild Dog, Bear, Leopard, Monkey, Wild Goat
Elephant Flat	371.99	0	Wild Dog, Elephant
Jamiri	1088.01	2.7	Wild Dog, Elephant, Wild Pig, Deer, Bear, Tiger
Lama Camp	2374	1.6	Elephant, Bear
Murgaso Basti	288.21	4.2	Wild Dog, Elephant
Sessa	1248.15	1	Wild Dog, Elephant, Bear, Tiger, Leopard
Shergaon	1998	5.4	Wild Dog, Deer, Monkey
Yelloripam	450	4.7	Wild Dog, Elephant, Small Cat

The team implementing surveys inquired about animals associated with four types of human-wildlife interactions in terms of crop damage, livestock depredation, property damage, and injury/loss of human life. Elephant, monkey, and wild pigs (three each), were associated with crop damage, including deer, monkey, bear, and civet; elephants were reported as the only species causing property damage (three respondents). Wild Dog and small cats (six respondents each) were identified as causing livestock depredation, of which the Leopard Cat was mentioned specifically by three, while Leopard, Wild Dog, and Elephant were mentioned as a species causing injury/loss of human life. The list of animals is summarized in Table 5.

Table 5. List of animals identified by the respondents in terms of type of conflict in the region.

Village	Crop damage	Livestock depredation*	Property damage	Injury/Loss of human life
Murgaso Basti	Elephant	Leopard Cat	Elephant	-



Sessa	-	Wild Dog, small cat	-	-
Elephant Flat	Elephant	Wild Dog, Leopard Cat	-	Leopard
Yelloripam	-	-	-	-
Yelloripam	Elephant	Wild Dog, small cat	Elephant	-
Jamiri	Wild Pig	Wild Dog, Leopard Cat	-	-
Sessa Camp	Wild Pig	Small cat	-	Wild Dog
Chillipam	Monkey	Wild Dog	-	-
Lama Camp	-	-	Elephant	-
Shergaon	Monkey	Wild Dog, Civet	-	-
Bugun	Monkey	Small cat	-	Elephant

**Livestock includes poultry, goats, and cattle including mithun.*

The survey team focused on crop damage and livestock depredation, since these were the major forms of human-wildlife interactions in the region. Elephants were mainly reported to visit following monsoon, from September to December; Wild Pig were reported in summer and monsoon (May to September), but also as ‘common in all months’. In terms of livestock depredation, the Wild Dog was discussed as the prevalent species depredating mithun, an animal with deep social and cultural associations. Tigers were mostly reported as ‘rarely’ being recorded in the region of the respondents’ villages.

2.3.4 Perceptions regarding wildlife conservation and associated livelihoods:

The survey team asked open-ended questions on three aspects, (1) the effective way to engage with the communities for wildlife conservation; (2) personal interest in wildlife conservation and ways in which to contribute; and (3) alternative/additional livelihood options.

The respondents suggested frequent meetings with communities on topics of sustainable natural resource management, wildlife identification, and general awareness to engage with children. Two respondent villages, Bugun and Lama Camp, said that they are already engaged with the forest department and NGOs through awareness and trainings, and one (Elephant Flat) has undergone training for snake handling and rescue, and bear conservation. While most affirmatively said they would like to volunteer for wildlife conservation, most said that they were unaware of how to do so and to create awareness regarding the same. Seven of the 11 respondents said they had not been engaged in any awareness activity, and four were engaged through the forest department. The respondent villages, namely Elephant Flat, Sessa, Chillipam, and Bugun, are known for wildlife tourism.

The discussion on livelihood options focused on mitigating human-wildlife negative interactions and for supplementing existing livelihoods. While two respondents said they were not sure about their choice (no options were provided in this open-ended discussion), nine



mentioned tourism development, homestay, culinary training, and nature-guiding as additional livelihood options. These suggestions correspond to the culture of homestays as nature-based tourism picks pace in the region, owing to the presence of various PAs.

2.4 Conclusions:

In our survey, we found that while small cats were observed by communities through chance encounters and as purported predators of domestic animals. While small cats were recognized generally, we found poor association with their identities in native languages and local cultures. This is possibly the case because of infrequent encounters with the species and their weak or non-existent representation in culture and traditions owing to them being considered a bad omen as per some respondents. The general perceptions were influenced by their depredation of poultry/ small livestock, although retaliatory hunting was not brought up in the discussion. One of the stronger links associating small cats with the people was wildlife tourism, especially in villages where tourism is driven by PAs such as Pakke National Park and Eaglenest Wildlife Sanctuary. Even though difficult to sight, the respondents mentioned that in addition to birds, small cats attracted tourists.

Although we found weak representation of small cats in local knowledge systems, tourism stood out despite being regionally restricted. It was also the most suggested of additional livelihood options as per the respondents. This offers an opportunity to engage with the people on small cat conservation, awareness, and potentially towards restoration of degraded habitats. While the negative human-small cat interactions were not considered as serious as that with Wild Dogs which depredate mithun and elephants which damage crops, they came up in the discussions and are important to be addressed through appropriate compensatory schemes, livelihood diversification, as well as through sensitization programmes.

We conclude that while people are generally aware about the presence of small cats in and around their areas of residence, based on our limited assessment, local understanding of these species was sparse. Given the growing global interest in small cats, including tourists who may travel to the region specifically to see these species, inculcating local interest in their conservation (in the way hornbills and tigers are a growing part of local conservation and tourism initiatives) may be important for communities to be more vested in their protection. Towards this end, lessons can be learned from the Pakke Paga Festival, Falcon Festival, and Hornbill Festival (Nagaland) that have helped build local support for conservation. Greater exposure of local communities to the unique cats that are supported in the region, and the threats they face may also help garner support for their conservation.



Chapter 3: Details of workshops and meetings conducted for small cat conservation status at Pakke-Eaglenest landscape, Arunachal Pradesh

3.1 Introduction:

Global Tiger Forum (GTF) and WWF India have entered a memorandum of understanding (MoU) to develop a small cat conservation landscape plan for the Pakke-Eaglenest and Dudhwa landscapes. The current MoU is for a year, and both organisations co-finance the project. The project was approved and initiated at WWF India on February 28, 2025.

3.1.1 Meetings undertaken:

After the project's initiation, two weekly meetings were conducted in the GTF office to devise a strategy for small cats' conservation and a way forward.

The GTF organised an online meeting to discuss the project with Arunachal Pradesh forest department officials. Shri. Damodhar A.T. (CF (WL & BD)) mentioned a few key points that formed the basis of follow-on engagements:

- Lack of documents about small cats in Arunachal Pradesh
- Strategy to monitor and conserve the small cats

Taking this meeting into account, a bibliography was developed to help understand the report and strategy on small cats in the state.

Based on the available data and other conservation efforts, a meeting was planned between WWF Brahmaputra Landscape and Western Arunachal Pradesh Landscape teams along with the state forest department in Itanagar on April 3, 2025 (Participant from Pakke Forest Department: Mr. Damodhar (CF), Mr. Yumcha Tarzum (RO), Participant from WWF India: Dr. Anupam Sarmah, Mr. Niraj Kakati and Dr. Ridhima Solanki).

Meeting highlights:

The small cat information per published literature is opportunistic, and the FD was updated with the bibliography. Such opportunistic information cannot be used to develop a strategy for the whole landscape. Hence, we proposed to capture a contiguous area via camera trapping in various elevation strata, i.e., lower, middle and higher elevations. The carnivore conservation strategy should sync with the existing tiger conservation and community conservation plan of the Pakke landscape.

Based on the discussion, it was decided to conduct two workshops in the fourth week of April as a prelude to the small cat survey in the landscape. Ms. Shreyashi (GTF) coordinated with the forest department and forest staff training and interaction was finalised for April 22 - 25, 2025 was finalised for staff training in Seijosa and in Bhalukpong on April 22-24, 2025.



3.2 Workshop Details:

3.2.1 Workshop 1, 22nd – 25th April 2025, Seijosa Forest Rest House:

The first workshop was organised for the forest staff of Pakke Tiger Reserve. The core of the reserve is approx. 862 km², constituting two ranges, the Seijosa and Tipi Range, and the buffer area is approximately 514 km². Tenga Reserve Forest and Papum Reserve Forest constitute the buffer for the tiger reserve. The buffer area is under two territorial forest divisions, i.e. Bomdilla and Khellong. Pakke Tiger Reserve is located in the Pakke Kessang and East Kameng district of Arunachal Pradesh. The Tenga Reserve Forest surrounds it to the North, Doimara Reserve Forest on the West, Nameri National Park & Tiger Reserve (Assam) on the South, some agricultural land, and Papum Reserve Forest on the East.

The tiger reserve covers 20% of the West Kameng district. Apart from a 1376 km² (approx.) protected area in the catchment of Kameng (Jia Bharali) and Pakke River, the adjoining RF and protected areas provide a continuous forested landscape of 2037 km² (approx.). With proper protection and policy intervention, this habitat can serve as a source population for many wild-life species.

Note: Pakke Wildlife Sanctuary is in the Arunachal Pradesh Forest Department's wildlife circle and is headed by DFO Shri Satya Prakash Singh.

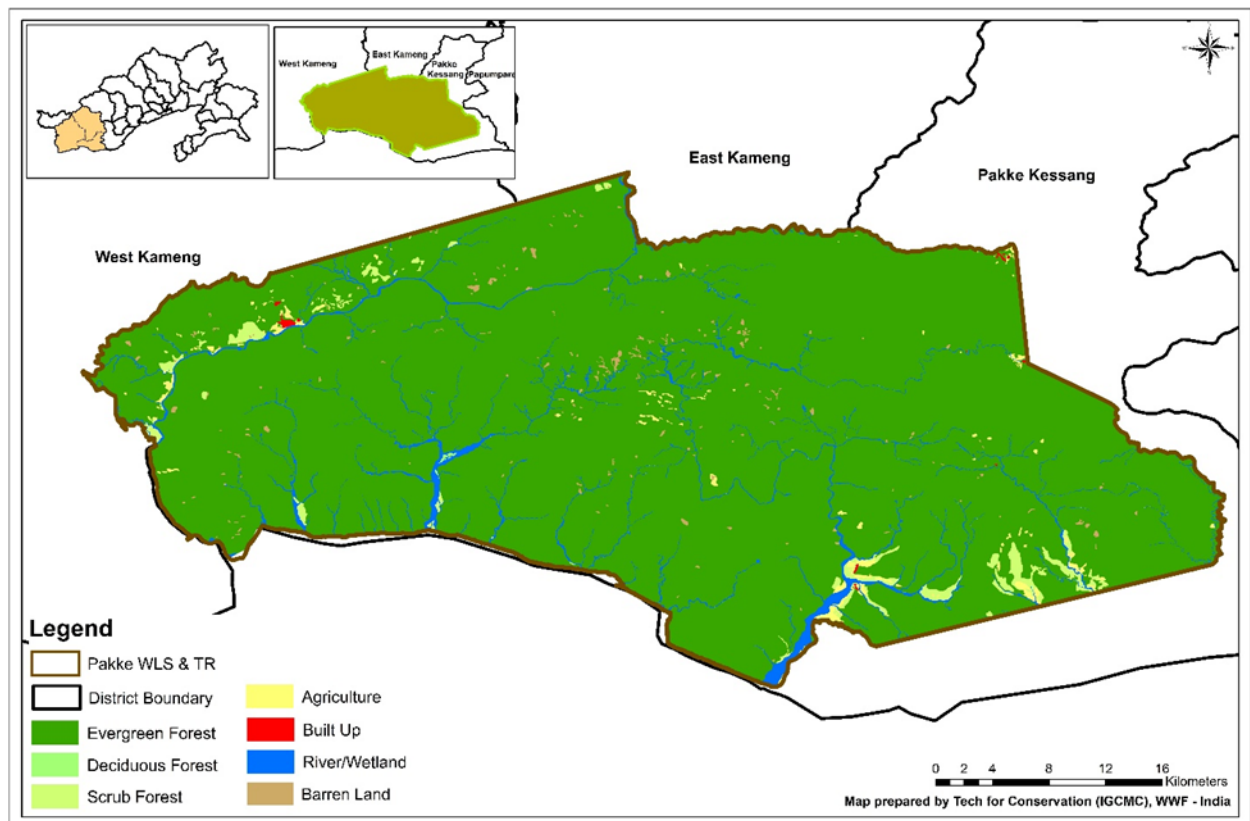


Figure 10: Land-use landcover map of Pakke (WWF India)



Figure 11 Participants of workshop at Seijosa

The half-day workshop was attended by 51 forest staff, including DFO and other senior officials. An interactive discussion was conducted by Dr. Ridhima Solanki regarding Small Cats: Introduction and Identification of species and their habitat. The presentation and discussion followed an exercise with the staff to identify the species from a hard copy of camera-trap photographs. Every group found it challenging to identify the cat species from the photographs due to the markings not being visible or having never observed the cat in the wild. The staff found it easy to identify the Leopard cat as it was more commonly seen. It was also observed that the local name of the leopard in the Nyishi language was tasso, and the staff could mention and identify it. The discussion also led to possibility of presence of Fishing Cat in the park. A local name also exists for fishing cat in the Nyishi tribe.

The second exercise was conducted to identify the habitat and prey dominance area for the survey and the threats and challenges in the ranges. In this exercise, in the absence of a beat boundary, the staff presented the areas of interest via reference to Anti-poaching camps and chowkis.

In the west and southern boundary of Pakke, Wild Pig, Barking Deer, Mithun, Sambar, Hog Deer, Giant Squirrel, primates, and Gaur were reported under the heading “prey”. The prey reference was given to them for all carnivores, including tigers. The point of reference for these dominant prey areas was identified based on locations such as Python Pung, Mathung Nallah, Baagh Nallah, Denai Adiji, Sukha Nallah, Nameri, Dafla Nallah, Bandar Pang, Nameri Pung. The staff also mentioned that on the western boundary, no threat is observed, but on the



southern boundary, poaching from a neighbouring state is reported, and small cats at Majhi Nallah are hunted.

In the north and north eastern boundary of Pakke, Himalayan Serow, Goral, Wild Pig, Sambar, and Barking Deer were reported at Kimi and Sessa Nallah. Threats observed in this region were hunting pressures and the retaliatory killing of small cats due to poultry lifting at Pinjoli, Elephant Flat. Hunting, fishing, and Jhum cultivation were listed as threats in the northeastern boundary of Pakke.

In the Seijosa range, Barking Deer, Flying Squirrel, Assamese Macaque, Himalayan Giant Squirrel, and Wild Pig were reported. In Khari APC, the staff mentioned regular intrusion of domestic buffalo and the threat of disease transfer, human disturbance, and livestock depredation by clouded leopard and marbled cat. An increase in the number is also seen as a challenge, as it reduces the prey population.

3.2.2 Workshop 2, 22nd - 24th April 2025, Bhalukpong Circuit House:

The forested area is part of the Western Arunachal Circle and includes Eaglenest Wildlife Sanctuary and Sessa Orchid Sanctuary. The project area also included two divisions: Khellong and Bomdilla. The second workshop was conducted in Bhalukpong to provide access to the forest staff of these divisions.

Eaglenest Wildlife Sanctuary is a protected area nestled in the Himalayan foothills of West Kameng District, Arunachal Pradesh, India. It spans approximately 218 km² and is part of the Kameng Elephant Reserve. Sessa Orchid Sanctuary borders the sanctuary to the northeast and Pakhui Tiger Reserve across the Kameng River to the east.

Eaglenest boasts a diverse landscape, with altitudes ranging from 500 to 3,250 meters. The terrain includes steep ridges, deep valleys, and dense forests. The sanctuary experiences heavy rainfall due to its location along the monsoon path, with over 3,000 mm of rain on its southern slopes. Several rivers and streams, including the Tippi Naala, drain the area, contributing to its rich biodiversity. The sanctuary is managed by the Department of Environment & Forests, Arunachal Pradesh, with conservation efforts supported by local communities, particularly the Bugun community, which is known for its dedication to wildlife protection. The sanctuary is famous for discovering the Bugun Liocichla, a critically endangered bird species first observed in 1995.

Sessa Orchid Wildlife Sanctuary, located in West Kameng District, Arunachal Pradesh, is a 100 km² protected area known for its rich biodiversity, especially of orchids. The Department of Environment & Forests, Arunachal Pradesh, manages the sanctuary. Conservation efforts include trekking routes for ecotourism, an orchid nursery, and a research centre at Tipi, which focuses on orchid conservation and propagation.

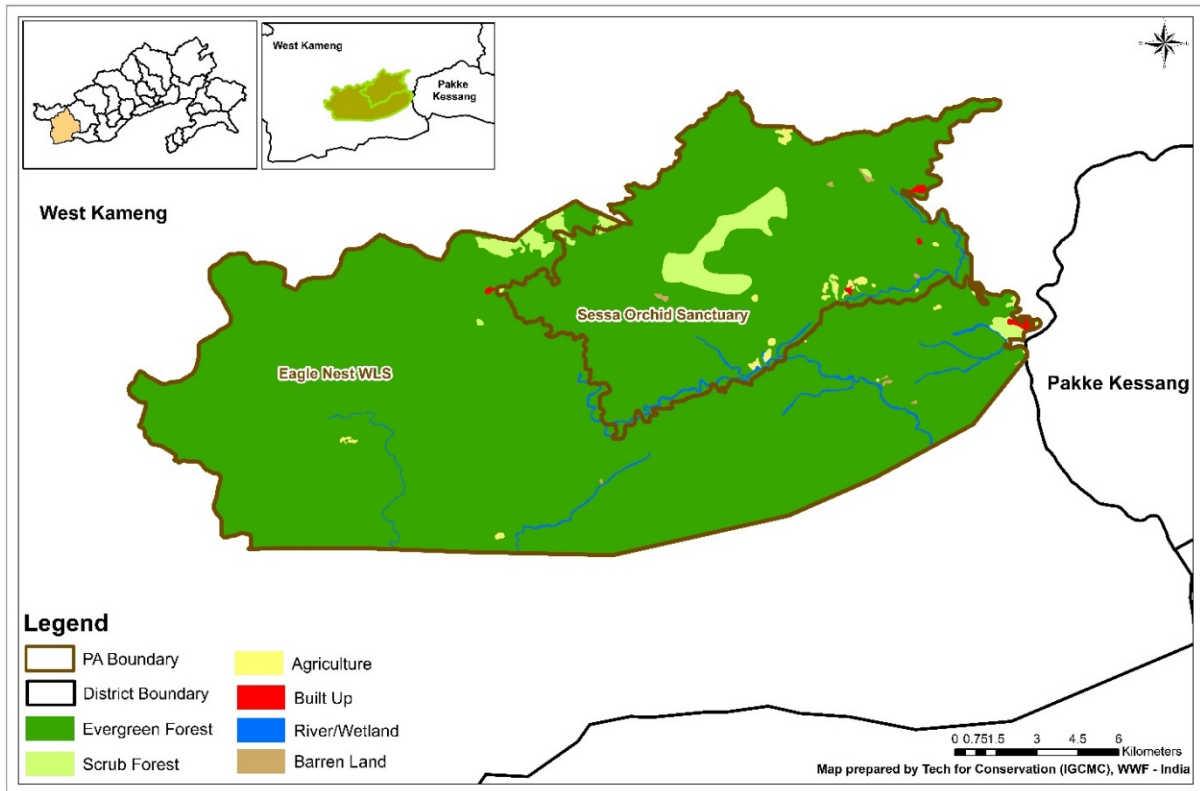


Figure 12 Land use-Land cover of Eaglenest Wildlife Sanctuary and Sessa Orchid Sanctuary



Figure 13 Participants of the workshop at Bhalukpong



The workshop was attended by 30 participants from the division. One of the major challenges discussed was shortage of manpower. Concerning small cats, a discussion on the potential presence of the Fishing Cat was identified in the Tippi range, where fishing cats are likely to be found near the forest rest house next along the Kameng River.

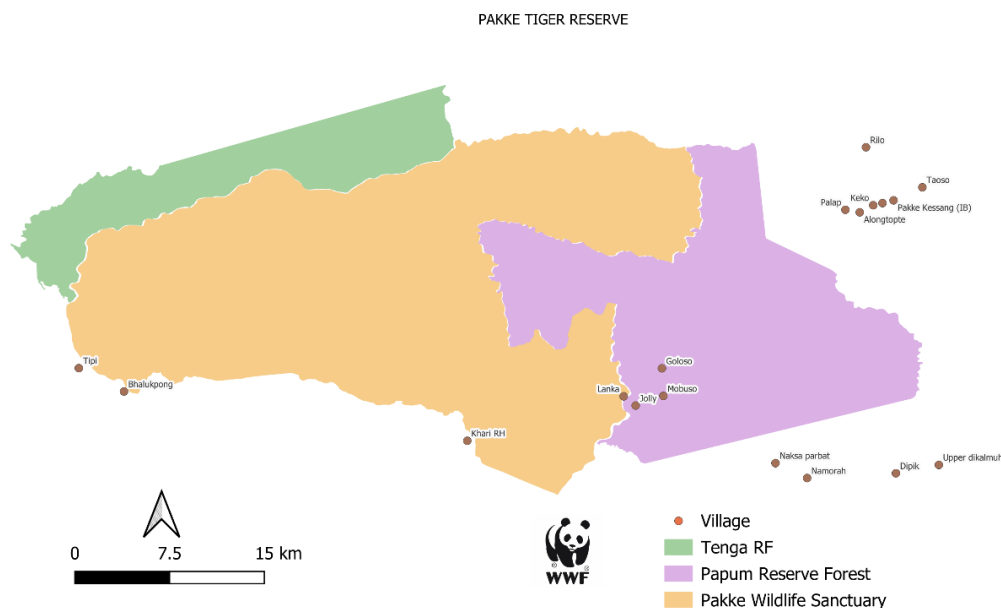
The prey species for wild carnivores identified were mainly Mithun and Wild Pig, and deer. The area also mentioned human-elephant conflict and wild dog depredating Mithun and other livestock. The wild dog conflict is registered from Tippi village. The Dedzelling Dargeling area (Tippi) is identified as an Elephant Corridor, and has shown presence of tiger pugmarks. Shergaon forest staff mentioned no confirmed presence of Jungle Cat and Marbled Cat. However, the team from SBVCR and Singchuung could identify the Fishing Cat and Jungle Cat, with the latter having a Garo language name, Holatas.

3.3 Way Forward:

The workshop concluded with the identification of several challenges, strengths, and spatial understandings of the Protected Area, i.e., Pakke Tiger Reserve, Eaglenest Wildlife Sanctuary, and Sessa Orchid Sanctuary. The follow-up discussion with Pakke Tiger Reserve helped acquire the geospatial information and the Tiger Conservation Plan, both crucial for a detailed study.

For Pakke Tiger Reserve:

- The Pakke Tiger Reserve has core area devoid of villages. The buffers in the eastern and western boundary have settlements. The core area might provide inviolate space but also offer tough terrain for a field survey. For the questionnaire survey, selection of villages will be planned majorly in buffer area i.e. in Papum Reserve Forest and its periphery (Figure 14).



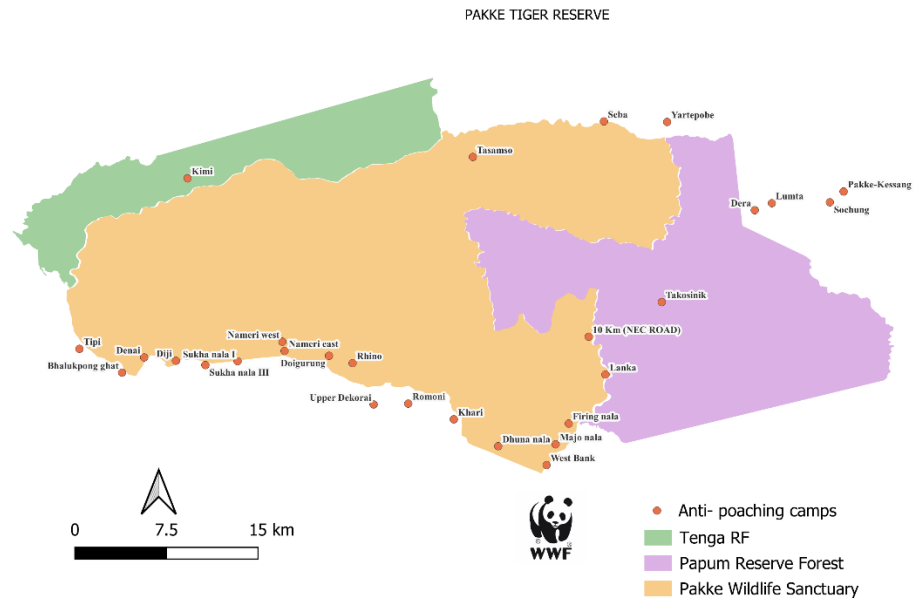


Figure 14: Maps showing locations of settlements (above) and anti-poaching camps (below) in core and buffer areas of Pakke Tiger Reserve from information available from the Forest Department

- The anti-poaching camps are spread out in southern and eastern boundary. While southern boundary provide continuation to Nameri Tiger Reserve (Assam), eastern boundary has been concluded in workshop to have many disturbances and less diversity of prey. Hence, camera trapping exercise under the project would focus on a continuous area in the southern and western boundary of Pakke (Figure 14).
- For stakeholders i.e. inter-departmental and cross-sectoral engagement in the landscape planning, GIS layers of Range/Circle, administrative profiles, small industry and other private owner's identification will be undertaken. Such database is essential to devise the land use planning and conservation as well as developing innovative livelihood engagement. WWF would try to acquire the socio-economic information at the district level as well as other relevant GIS layers like elevation, land-use land cover, village census information etc.
- The stakeholder identification is underway for business models i.e. investment in Eco-tourism. As per discussion with forest department, an investor engagement workshop is being devised which can be co-organized with small cat conservation partner. A sustainable program like nature guiding and bird tour organizing is also suggested to bring in portfolio for livelihood strategy.
- WWF-India has requested acquisition or joint exercise to analyse the existing camera trap data.

For Eaglenest and Sessa:

- The forest division had limitation of spatial information and hence, the proposed step is to develop a database of spatial information (inclusive of administrative boundaries and forest department administrative setup) for the forest divisions.

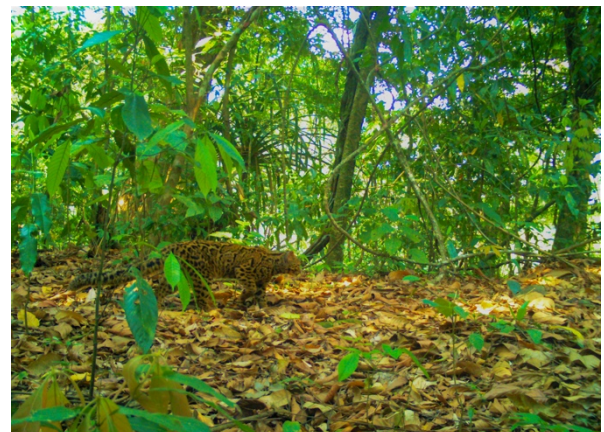


- The landscape has village council of Sherkdupen community and a workshop with them is being planned. The planned workshop is with the aim of rolling out awareness campaign via village leaders and developing knowledge material for school kids. The visit to Tukpen Village Council at Rupa was undertaken to understand the local engagement and aptitude towards small cat conservation. Since the 14 village which surround the Eaglenest is of the Council, it was pertinent to plan workshop to strategize engagement with the community.
- The village survey will be carried out in all 14 village of the council in Eaglenest NP in June (depending on rainfall period).
- The forest department also engage community members of Bugun for biodiversity assessment, especially in and around Eaglenest Wildlife Sanctuary.
- WWF India has already undertaken camera trapping in Khellong division and Sessa Orchid Sanctuary.
- Eaglenest has documented a rich bird diversity, however, identification of this protected area as small cat's destination is a limitation in terms of wildlife tourism. The workshop concluded that the knowledge of small cat's identification is fair amongst forest staff, yet their habitat identification is not undertaken. The habitat and prey information will be gathered in and around Eaglenest and Sessa.



Appendices

Appendix 1: Camera trap images of some of the small and medium sized wild cat species found in Arunachal Pradesh





Appendix 2

Images of the capacity building workshops conducted at the Pakke Tiger Reserve and Bhalukpong Wildlife Sanctuary





Appendix 3

Pointers for discussion in FGDs for Arunachal Landscape: Information related to small cat habitat from local village heads

Village name

Who is in the FGD (# of people, # of men, women etc)

Number of households in the village.

Where is the village located?

Purpose: The purpose of this FGD is to collect information from the knowledge of local people regarding the status, occurrence, identification, habitat of small wild cats as well as their threats. This information will be used for preparing landscape level conservation plans for small wild cats under the project “Strengthening conservation and resilience of globally significant wild cat landscapes through a focus on small cat and leopard conservation”. This information will also be used towards building capacity and awareness of the local people towards conservation of small cats and maintenance of habitat through participatory approaches.

Section 1: Wildlife / habitats in proximity to villages:

1. Describe to us what jangal, jhaadi, nalas are near your village, and are these areas used by any of the following wildlife (show an album, including images of the small cats and other wildlife)
2. Do any of these animals also use farmlands?
3. How have these habitats changed over time (in their extent, quality etc.), and how has wildlife use of these areas changed?
4. Which of these wildlife cause you harm, and which if any, are detrimental to you and why?

Section 2: Small cats

1. What are the local names for each of these?
2. Have the local people sighted/heard small cats in their surrounding habitat? (showing of pictures – Marbled cat, Leopard cat, Jungle cat, fishing cat, Asiatic



golden cat, Clouded leopard). How often are these spotted, and how does it compare with how commonly they were seen 10 years ago?

3. What are the preferred habitats for each of these species, and why?
4. What is the preferred prey for each of these species? How abundant are these prey species and where are they found?
5. Have you observed any changes (increase/ decrease) in the abundance of these prey species (over the last 10 years, and last 20 years)? If yes, why?
6. Are there any peculiar or unique behaviour of these small cats by which you know or recognize them?
7. Do you associate the presence of these cats (for each species) with any benefits, or harm? If yes, what/ why?
8. Do you think that their numbers are (a) increasing; (b) decreasing; or (c) stable? Why?
9. Are there any farming practices that may be beneficial for these species – if yes, are you willing to follow these or not (if no, why not)?
10. a) What do they think the reason might be?
b) Do they think the reason is related to changes in the surrounding habitat?
12. What according to the local people are recommended for sustenance and maintenance of their surrounding habitat for long term survival of small cats?
13. Do they want to volunteer/be involved towards the conservation of wildlife and habitat surrounding them?

Distribution of awareness materials



Appendix 4

List of participants at the capacity building workshops conducted at the Pakke Tiger Reserve and Bhalukpong Wildlife Sanctuary

List of participants for "Stakeholder workshop under the GOI-UNDP-GEF-7 Wild Cat Project"
Date: 25th April, 2025 Venue: Circuit House, Bhalukpong

S.No.	Name	Designation and Organisation	Email	Mobile	Signature
1.	Amarjot Kujur (GFS)	ACF, Khellong Forest Division	amarjotkujur@acf.org	9145934262	[Signature]
2.	Tanya Mishra	RF, Bhalukpong Forest Range	tanya@forest.nic.in	7215451917	[Signature]
3.	Riddhima Subedi	Coordinator, PSP WOT India	rsubedi@wotindia.net	7300549518	[Signature]
4.	Suresh Kumar Das	WOT India	suresh@wotindia.net	7325492573	[Signature]
5.	Singam Singh	Project Associate, GTF	slay@bhalukpong.gov.in	9881240737	[Signature]

List of participants for "Stakeholder workshop under the GOI-UNDP-GEF-7 Wild Cat Project"
Date: 25th April, 2025 Venue: Circuit House, Bhalukpong

S.No.	Name	Designation and Organisation	Email	Mobile	Signature
1.	Amarjot Kujur (GFS)	ACF, Khellong Forest Division	amarjotkujur@acf.org	9145934262	[Signature]
2.	Tanya Mishra	RF, Bhalukpong Forest Range	tanya@forest.nic.in	7215451917	[Signature]
3.	Riddhima Subedi	Coordinator, PSP WOT India	rsubedi@wotindia.net	7300549518	[Signature]
4.	Suresh Kumar Das	WOT India	suresh@wotindia.net	7325492573	[Signature]
5.	Singam Singh	Project Associate, GTF	slay@bhalukpong.gov.in	9881240737	[Signature]

List of participants for "Stakeholder workshop under the GOI-UNDP-GEF-7 Wild Cat Project"
Date: 25th April, 2025 Venue: Circuit House, Bhalukpong

S.No.	Name	Designation and Organisation	Email	Mobile	Signature
1.	Rishi Karmali	Forest Guard, Khellong Division		8287033665	[Signature]
2.	Nisha Sison	Forest Guard		8822775272	[Signature]
3.	Rakesh Nara	Forest Guard		8732800457	[Signature]
4.	Majal Jesion	Forest Guard		7863670922	[Signature]
5.	Domin Tago	Forest G/Staff	domintago2014@gmail.com	897462816	[Signature]

List of participants for "Stakeholder workshop under the GOI-UNDP-GEF-7 Wild Cat Project"
Date: Venue:

S.No.	Name	Designation and Organisation	Email	Mobile	Signature
6.	Sam Limbu	Forest Guard		9706695229	[Signature]
7.	Lam Narsing Thongdok	(FNU) Forest Guard		7085448393	[Signature]
8.	Kiran Sison	(FNU) Forest Guard		8732800457	[Signature]
9.	Mene Riang	Riang Tippi Range		8413875349	[Signature]
10.	Kumari Sangsha	Tippi Range		8413875349	[Signature]

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9.	Mene Riang	Riang Tippi Range		8413875349	[Signature]
10.	Kumari Sangsha	Tippi Range		8413875349	[Signature]



CONSOLIDATED REPORT FOR CONSERVATION STATUS OF SMALL AND MEDIUM-SIZED WILD CATS AT
PAKKE-EAGLENEST LANDSCAPE, ARUNACHAL PRADESH

List of participants for "Stakeholder workshop under the GOI-UNDP-GEF-7 Wild Cat Project"

Date: 22 April 2025

Venue: Meeting Hall, Pakke TR

S.No.	Name	Designation and Organisation	Email	Mobile	Signature
01	Satya Prakash Singh	DFO, PTR	dsatya@gmail.com	858783735	[Signature]
02	Sonali Kaur Datta	WWF-India		939259520	[Signature]
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05	Niraj Khatu	Dr. Team Leader, BHL WWF-India	nirajkhatu@wwf.org	943848884	[Signature]
06	Rakesh Malik	Field Biologist	rakesh.malik@ntca.gov.in	826794549	[Signature]

List of participants for "Stakeholder workshop under the GOI-UNDP-GEF-7 Wild Cat Project"

Date: 22 April 2025

Venue: Meeting Hall, Pakke Tiger Reserve

S.No.	Name	Designation and Organisation	Email	Mobile	Signature
1.	Tika Rao	Asst. Tiger Wildlife Exp.		825793244	[Signature]
2.	Hage Tave	Forest Guard		8257967856	[Signature]
3.	Kone Regin	Forest Guard		977410780	[Signature]
4.	Nurpur Borsow	S.T.P.F. - do.		9865880122	[Signature]
5.	Jack Changha	S.T.P.F. do.		949910700	[Signature]

List of participants for "Stakeholder workshop under the GOI-UNDP-GEF-7 Wild Cat Project"

Date: 22/4/2025

Venue: Meeting Hall, Pakke TR

S.No.	Name	Designation and Organisation	Email	Mobile	Signature
1.	Tiger Singh	Asst. Tiger Wildlife Range			[Signature]
2.	Valley Ombao	S.T.P.F. TIPP		939329997	[Signature]
3.	Karadu Lambo	S/ Guard		600799970	[Signature]
4.	LIMAR LO Yi	Be Gward		878778205	[Signature]
5.	Tama Sumbong	S.T.P.F.		8413053929	[Signature]
6.	Jay Sharma	Be Gward	jaysharma.1310@gmail.com	9678057343	[Signature]
7.	Krishna Langa	STPF	krishna.1310@gmail.com	8730941028	[Signature]
8.	Samuel Kumbha	Be Gward		6007108919	[Signature]
9.	Makro Wang	Be Gward		6909397166	[Signature]

List of participants for "Stakeholder workshop under the GOI-UNDP-GEF-7 Wild Cat Project"

Date: 22 April 2025

Venue: Meeting Hall, Pakke Tiger Reserve

S.No.	Name	Designation and Organisation	Email	Mobile	Signature
1.	Kancho Karch	STPF		8513294785	[Signature]
2.	Singam Kumbha	STPF		9912492770	[Signature]
3.	Singam Kumbha	STPF		9912492770	[Signature]
4.	Asst. Kimo	STPF		8453851218	[Signature]
5.	Homa Tilling	Be Gward		994405073	[Signature]
6.	Loring Kimo	Be Gward		970782442	[Signature]
7.	Tikre Kimo	S.T.P.F.		8059528019	[Signature]
8.	Kamru Kimo	- do -		896109582	[Signature]
9.	Laguna Welly	- do -		NA	[Signature]
10.	Ahash Teki	- do -		9707552201	[Signature]
11.	Baldin Gray	D.F.O.	baldingray@gmail.com	7576860351	[Signature]
12.	Obey Tayem	S.T.P.F.		8131870579	[Signature]

List of participants for "Stakeholder workshop under the GOI-UNDP-GEF-7 Wild Cat Project"

Date: 22/04/2025

Venue: Meeting Hall, Pakke TR

S.No.	Name	Designation and Organisation	Email	Mobile	Signature
13.	Mayang Cheri	Be Gward	mayangcheri@gmail.com	9362726726	[Signature]
14.	Gopal Ch. Mordel	Sr. Accounts Officer WWF-India		8011336310	[Signature]
15.	Ananta Das	WWF-India		7896867299	[Signature]

List of participants for "Stakeholder workshop under the GOI-UNDP-GEF-7 Wild Cat Project"

Date: 22 April 2025

Venue: Meeting Hall, Pakke TR

S.No.	Name	Designation and Organisation	Email	Mobile	Signature
6.	Sh. Ringam Tok	Be Gward		7362193004	[Signature]
7.	Sh. Sunak Kelli	Asst. C/L		8798078609	[Signature]
8.	Sh. Tama Tama	Be Gward		690818196	[Signature]
9.	Sh. Tuki Tachang	Be Gward		8331827355	[Signature]
10.	Sh. Tamang Tok	Be Gward		9362414835	[Signature]
11.	Sh. Samy Rangam	Be Gward		8731967345	[Signature]

Pillak Range

List of participants for "Stakeholder workshop under the GOI-UNDP-GEF-7 Wild Cat Project"

Date: 22 April 2025

Venue: Meeting Hall, Pakke Tiger Reserve

S.No.	Name	Designation and Organisation	Email	Mobile	Signature
1.	Sh. Saba Tech	Be Gward		7085820955	[Signature]
2.	Sh. Modang Tama	Driver		8730806899	[Signature]
3.	Sh. Raju Teko	Be Gward		8414986450	[Signature]
4.	Sh. Rabo Chini	STPF		690955242	[Signature]
5.	Sh. Nangun Tech	Be Gward		6909164022	[Signature]



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