



भारतीय वन्यजीव संस्थान
Wildlife Institute of India

19th INTERNAL ANNUAL RESEARCH SEMINAR

16th - 17th September 2026

PROGRAMME & ABSTRACTS





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INTERNAL ANNUAL RESEARCH SEMINAR
— PROGRAMME —



● DAY 1: 16th SEPTEMBER 2026 ●

10:00-11:00	<i>Inaugural</i>	
10:00-10:10	<i>Welcome to IARS 2026</i>	<i>Dr. Bivash Pandav Research Coordinator</i>
10:10-10:20	<i>Remarks by Dean WII</i>	<i>Dr. Ruchi Badola</i>
10:20-10:30	<i>Remarks by Seminar Co-Chair</i>	<i>Dr. Dhananjai Mohan</i>
10:30-10:50	<i>Plenary by Seminar Co-Chair</i>	<i>Dr. Mewa Singh</i>
10:50-11:00	<i>Vote of Thanks-ANO Research</i>	<i>Sh. Varun Kher</i>
11:00-11:35	<i>Group Photograph and Tea</i>	

11:35-13:30	Session 1: Biodiversity, Community Ecology & Species Ecology	
	<i>Chair: Dr. R. Suresh Kumar</i> <i>Co-Chair: Dr. Abhijit Das</i> <i>Moderator: Dr. Amarjeet Kaur</i>	
11:35-11:45	From turnover to traits: Unravelling the mammalian community organization along an elevation gradient in the Eastern Himalaya	Shagun Thakur
11:45-11:55	From forest to mining landscape: Impacts of anthropogenic and ecological drivers on mammalian assemblages	Dipesh Kumar Jangir
11:55-12:05	Status and Conservation of Mammalian Fauna in Balpakram National Park, Meghalaya	Nishi Nath Halder
12:05-12:15	Beyond Protected Areas: Status of Thar's mammals across land-use and protection regimes	Swati Sen
12:15-12:25	Assessing the ecology of Red Junglefowl (<i>Gallus gallus</i>) during the breeding season across Kanger Valley National Park and its adjoining Reserve forests, Chhattisgarh	Bhawani Sabat
12:25-12:35	Diversity and Densities of Avifauna in the Saranda Forest Division: Implications for Conservation	Saurav Chaudhary
12:35-12:45	Assessing Elevational and Geographic Range-limit Discrepancies in Himalayan birds using Systematic Camera-trap detections	Anuj Joshi
12:45-12:55	Patterns of bird community structure and microclimate along riparian patches in Mudumalai Tiger Reserve	Aparna A R
12:55-13:05	Wild bees dominate the pollinator fauna of an urban-fringe protected area: a pan-trap base assessment of Sukhna Wildlife Sanctuary, Chandigarh	Anand Sharma
13:05-13:30	Question Answer Session & Comments by Chair and Co-Chair	
13:30-14:30	LUNCH BREAK	

14:30-15:40	Session 2: Aquatic, Marine & Coastal Ecology	
	Chair: Dr. J. A. Johnson Co-Chair: Dr. Nehru Prabakaran Moderator: Ms. Chinmaya Ghanekar	
14:30-14:40	Establishing Baseline Data for Aquatic Habitat for Long Term Monitoring Under LTEO Programme	Rakshit Rayal
14:40-14:50	Population estimation of saltwater crocodiles in the Andaman and Nicobar Islands	Hakam Singh
14:50-15:00	Beyond the Beach: Residency and Diving Behaviour of Olive Ridley Turtles off the Mass-Nesting Beaches along the Odisha Coast	Abhishek Thawait
15:00-15:10	Nesting site fidelity and nearshore use by solitary-nesting Olive Ridley turtles (<i>Lepidochelys olivacea</i>) along the Tamil Nadu coast	Anoop Sabu
15:10-15:20	Group behaviour and movement patterns of nearshore spinner dolphin (<i>Stenella longirostris</i>) around Kavaratti Island, Lakshadweep Archipelago	Tanmay Gokhale
15:20-15:40	Question Answer Session & Comments by Chair and Co-Chair	
15:40-16:00	TEA BREAK	
16:00-17:10	Session 3: Wildlife Health, Genetics, Genomics & One Health	
	Chair: Dr. S. K. Gupta Co-Chair: Dr. Samrat Mondol Moderator: Dr. Karan Jain	
16:00-16:10	Integrating Metagenomics into Disease Surveillance at Human, Livestock & Wildlife Interfaces	Tapendra Saini
16:10-16:20	The Curious Case of Canidae: Genomic Insights into Evolution, Demography and Conservation	Shrushti Modi
16:20-16:30	Spatially Explicit Integration of Habitat Suitability and Livestock Disease Prevalence Delineates Potential Epidemiological Exposure Landscapes for Gaur (<i>Bos gaurus</i>) in Central India	Arun Kumar Gorati

16:30-16:40	Peaks Beyond the Mountains:Tracking Stress and Reproduction in Zoo Red Pandas (<i>Ailurus fulgens fulgens</i>) and Nutritional Stress Comparisons with Wild Populations	Tryambak Dasgupta
16:40-16:50	From crisis to recovery, the temporal genetic story of Assam's rhinoceros	Shreshree Kumar
16:50-17:10	Question Answer Session & Comments by Chair and Co-Chair	
END OF DAY		

• DAY 2: 17th SEPTEMBER 2026 •

10:00-11:40	Session 4: Carnivore Ecology, Predator-Prey & Scavenger Systems	
	Chair: Dr. Bilal Habib Co-Chair: Dr. Vishnupriya Kolipakam Moderator: Dr. Tanveer Ahmed	
10:00-10:10	Building a Conservation Framework for the Caracal in the Greater Ranthambore Landscape	Shomita Mukherjee
10:10-10:20	Where Rosettes Roam: Leopards and Their Prey Across Selected Sites in the Simlipal-Satkosia Landscape	Tarun Singh
10:20-10:30	Are Stable Large Carnivore Populations Demographically Stable? Comparing Protected and Human-Dominated Landscapes of Central India	Sajid Reza
10:30-10:40	Small Cats in a Big Cat Landscape: Understanding Small Felid Ecology in Tadoba-Andhari Tiger Reserve, Maharashtra	Dharmarajsinh
10:40-10:50	Assessing Habitat Use and Spatial Density of Honey Badger (<i>Mellivora capensis</i>) in Melghat Tiger Reserve, Maharashtra	Mohana Krishna Narige
10:50-11:00	Living in the Shadows: Initial Insights into the Ecology of the Tibetan Sand Fox (<i>Vulpes ferrilata</i>) in Changthang Wildlife Sanctuary, Ladakh	Prakruthi G M
11:00-11:10	Finders, Feeders, and Finishers: Vertebrate Scavenger Assembly at Cheetah and Leopard Kills in Kuno National Park, Madhya Pradesh	Guna Sekaran M

11:10-11:40	Question Answer Session & Comments by Chair and Co-Chair
11:40-12:10	TEA BREAK

12:10-13:00	Session 5: Species Conservation, Recovery, Restoration & Landscape Management	
	<i>Chair: Dr. Sutirtha Dutta</i> <i>Co-Chair: Dr. Lallianpui Kawlai</i> <i>Moderator: Sh. Varun Kher</i>	
12:10-12:20	From the Westernmost Range to a National Initiative: Establishing the Baseline for Project Sloth Bear	Ashish Kumar Jangid
12:20-12:30	Evaluating grassland restoration in Thar: a multitaxa perspective	Anshuman Pati
12:30-12:40	From mapping corridors to quantifying conservation priorities in the Terai Arc Landscape	Manisha Bishnoi
12:40-13:00	Question Answer Session	
13:00-14:00	LUNCH BREAK	

14:00-15:20	Session 6: Infrastructure, Roads, Development & Wildlife	
	<i>Chair: Dr. Gopi G. V.</i> <i>Co-Chair: Dr. Amit Kumar</i> <i>Moderator: Dr. Ashish Jha</i>	
14:00-14:10	Underground Echoes: Evaluating the Effect of Tunnel-Related Seismic Vibrations on Anuran Calling Behaviour	Niket Alashi
14:10-14:20	A Comparative Assessment of mammalian road-side habitat use near Mitigated and Unmitigated Segments in Vidarbha, Maharashtra	Mohd Belal
14:20-14:30	Spatio-temporal patterns of wildlife crossing use along the Delhi-Dehradun highway	Maitreyee Bhawe
14:30-14:40	An insight into the biodiversity around the proposed road in Kaimoor Wildlife Sanctuary, Uttar Pradesh	Kamran Husain
14:40-14:50	A Baseline Assessment of Biodiversity, Soundscapes, and Anthropogenic Pressures around an Extended Reach Drilling Site in Assam	Shaikh Obair Aqueel Ahmed

14:50-15:00	Habitat drives vertebrate road mortality in the Satpura-Melghat Corridor, Madhya Pradesh: Implications for mitigation beyond arterial highways	Prajwal Ray
15:00-15:20	Question Answer Session & Comments by Chair and Co-Chair	
15:20-15:50	TEA BREAK	
15:50-17:00	Session 7: Human-Wildlife Interface, Elephants & Conservation Society	
	<i>Chair: Dr. Parag Nigam</i> <i>Co-Chair: Dr. C. Ramesh</i> <i>Moderator: Mr. Prashant Mahajan</i>	
15:50-16:00	Asian Elephants Beyond Protected Areas: Status and Conservation in Community-Managed Landscapes of Nagaland, India	Arif Ahmad
16:00-16:10	India's efforts toward Elephant Conservation through Management Effectiveness Evaluation (MEE) Approach	Anoop Raj Singh
16:10-16:20	Perceptions of Agropastoral Communities on Ecosystem Services Provided by Scavengers in the Aravalli Landscape	Hitesh Kumar
16:20-16:40	Question Answer Session & Comments by Chair and Co-Chair	
16:40-17:00	CLOSING REMARKS & END OF IARS	Dr. Bivash Pandav

INTERNAL ANNUAL RESEARCH SEMINAR
— ABSTRACTS —



From turnover to traits: Unravelling the mammalian community organization along an elevation gradient in the Eastern Himalaya

Shagun Thakur, Vineet Dubey, Sameera Hindalekar, G. V. Gopi, Sambandam Sathyakumar, J. A. Johnson

Elevation gradients impose strong environmental filtering on mountain biotas, yet how mammalian communities respond to these gradients remains unresolved: Do assemblages progressively lose species, or are they reorganized through species replacement? We addressed this aspect in the Kameng landscape of Arunachal Pradesh. A systematic camera trap monitoring exercise was conducted between 2022 and 2025. In total, 106 camera sites were established (1,000 m–4,800 m), yielding a sampling effort of 22,974 trap nights.

We detected 34 medium to large-bodied mammal species and estimated community and species-level site use for 28 species using multi-species, multi-season occupancy models. From the resulting site-use estimates we partitioned elevational β -diversity into turnover and nestedness. Using species-station bipartite networks we further determined the topology (connectance, nestedness, modularity) along the elevational gradient and measured the robustness through simulated ordered station loss to assess community persistence. Additionally, functional traits (body size, trophic guild, and activity patterns) were incorporated to evaluate how trait-mediated responses shape community assembly across environmental and anthropogenic gradients using hierarchical joint species distribution modelling (HMSC).

Community site use responded non-linearly to elevation (β for elevation² = -1.17, 95% CI -1.76 to -0.56). Road proximity showed a weak negative trend (β = -0.23, 95% CI -0.51 to 0.06). Elevational β -diversity was dominated by turnover (81%), indicating strong compositional replacement rather than nested loss of species. Assemblages were significantly anti-nested; modularity increased sharply beyond the breakpoint at 3,300 m (95% CI 2,950 m–3,450 m). Robustness revealed strong asymmetry: removing 40% of upper-elevation sites resulted in the loss of 10 of 22 species ($\psi > 0.20$), whereas equivalent lower-first removal resulted in no species loss ($R = 0.601$ vs 0.810). Our findings indicate that elevational variation in mammalian assemblages is driven predominantly by compositional replacement rather than nested species loss, accompanied by structural reorganization of the community. The upper-elevation assemblage is therefore distinct and less substitutable within the landscape. Joint species distribution modelling attributed 62% of community variation to elevation and showed that only habitat breadth consistently predicted species' elevational responses (β = -0.610, 95% CrI -1.177 to -0.074).

Keywords: camera trapping, occupancy modelling, β -diversity, bipartite networks

✕ & 📷 Text

What changes when you move up a mountain? In Kameng, 81% of elevational β -diversity was driven by species turnover, revealing strong compositional replacement along the gradient and increasingly distinct mammalian assemblages above ~3,300 m

Title of the Project

Assessment and Monitoring of Climate Change Effects on Wildlife Species and Ecosystems for Developing Adaptation Strategies in the Indian Himalayan Region under NMSHE

Name of PI(s)

Dr. J. A. Johnson

Name of Co-PI(s)

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Title of the Project

Assessment and Monitoring of Biodiversity Values in Saranda Forest Division, West Singhbhum District, Jharkhand

Name of PI(s)

Mr. Prashant Mahajan

Name of Co-PI(s)

Dr. K. Ramesh
Dr. Salvador Lyngdoh
Dr. Ashish Jha
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From forest to mining landscape: Impacts of anthropogenic and ecological drivers on mammalian assemblages

Dipesh Kumar Jangir, Saurav Chaudhary, Prashant Mahajan

Introduction: Driven by habitat loss and fragmentation, mammal species in extreme human-dominated landscapes are known to alter their activity and habitat use. However, species with broader habitat breadth and foraging strata can sustain the anthropogenic pressure and might still thrive in such stressed local conditions. Contrastingly, specialist species show different responses to these anthropogenic stressors relative to generalist species.

Objective: To assess the mammalian diversity and abundance. The most abundant 11 species were further modelled using the Generalized Linear Mixed Model with negative binomial distribution, due to high mean to variance ratio in the data.

Methods: We employed camera trap surveys in Saranda Forest Division (SFD); 62 camera traps were deployed from November 2025 to June 2026.

Results: We identified 26 species of mammals via camera trapping and eight more species through opportunistic encounters. The relative abundance index highlighted the rhesus macaque (RM) and Northern red muntjac (NRM) as the most abundant species, while rare encounters such as gaur, leopard cat, dhole, and pangolin were the least abundant. We used species with adequate independent detections to examine their responses towards anthropogenic and habitat covariates. The NRM is the only species that exhibited a significant negative correlation with hunter counts. Distance to Mines showed a negative response to Sloth Bear and NRM abundance but a positive response to wild boar (WB) and RM abundance. Distance to settlement is the only anthropogenic predictor that indicated a significant positive association with three species: WB, four-horned antelope, and Indian grey mongoose. This study also identified a few rare species from the landscape, earlier believed to be extirpated from the SFD.

Conclusion: The current study identified ecological and anthropogenic factors for species abundance in SFD, highlighting the importance of this landscape as an ecological refugia and hub for various mammalian fauna, thus establishing a foundation for future conservation and management protocols.

Keywords: Camera trapping, Chota Nagpur Plateau, Disturbance, Saranda

✉ & 📧 Text

Our study identified 34 mammal species from a highly disturbed landscape of Saranda. Mammals showed significant avoidance from anthropogenic covariates, while the most hunted species, barking deer, showed a significant negative relation with hunters.

Status and Conservation of Mammalian Fauna in Balpakram National Park, Meghalaya

Nishi Nath Halder, Supratik Roy, Aiborlang Sawain, Javed G Mumin, Salvador Lyngdoh, Prashant Mahajan

Balpakram National Park (BNP), spread over an area of approximately 220 km² in the South Garo Hills district of Meghalaya, is a landscape recognized for its outstanding biodiversity value along the India-Bangladesh border. Characterized by a rugged terrain of hills, plateaus, deep gorges, limestone formations, and a mosaic of primary and secondary forests regenerating from historical jhum cultivation, the park supports a rich assemblage of mammalian fauna, including several globally threatened carnivores and megaherbivores. Despite its ecological significance, quantitative baseline data on the status, distribution, and population parameters of mammals in BNP remain scarce, constraining evidence-based conservation planning. The present study assessed the diversity, relative abundance, and density of mammalian species in BNP using camera-trap-based survey methods.

A total of 153 camera-trap stations were deployed across the park between October 2025 and April 2026, accumulating a total sampling effort of 4,711 trap nights. This effort yielded photographic records of 30 mammal species, and the Relative Abundance Index (RAI) was computed for each. Barking deer emerged as the most frequently detected species (RAI = 96.52), followed by wild boar (RAI = 12.29), Asian elephant (RAI = 11.59), and stump-tailed macaque (RAI = 10.59). Among species of conservation concern, clouded leopard (RAI = 1.48), leopard cat (RAI = 1.18), Asiatic black bear (RAI = 0.36), marbled cat (RAI = 0.31), and Chinese pangolin (RAI = 0.02) were also documented.

Individually identifiable species, namely clouded leopard and leopard cat, were analyzed using Spatially Explicit Capture-Recapture (SECR) modelling, yielding densities of 2.89 and 21.27 individuals per 100 km², and estimated abundances of 24.1 and 97.5 individuals, respectively. For unmarked species, Camera Trap Distance Sampling (CTDS) was applied to estimate density, generating an estimate of 0.699 individuals/km² for barking deer, with density estimates also obtained for Asian elephant, wild boar and Asian palm civet.

These findings provide the preliminary multi-species density and abundance estimates for BNP. This further enables trend detection, informing protected area management plans, and guiding IUCN Red List assessments for threatened carnivores in this globally important, yet understudied, biodiversity landscape of Northeast India.

Keywords: *Balpakram National Park, Camera trapping, Relative Abundance Index (RAI), Spatially Explicit Capture-Recapture (SECR), Camera Trap Distance Sampling (CTDS), Mammalian diversity*

   Text

New camera-trap study in Balpakram NP, Meghalaya: 30 mammal species recorded across 153 stations (4,711 trap nights). Barking deer leads (RAI 96.52); clouded leopard density 2.89/100km², leopard cat 21.27/100km², barking deer density 0.699/km². A vital baseline for Garo Hills conservation. #Wildlife Institute of India

Title of the Project

Mammalian population assessment in the state of Meghalaya across protected and fragmented landscapes

Name of PI(s)

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Name of Co-PI(s)

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Title of the Project

Impact and Mitigation of proposed Limestone mining in Ramgarh, Jaisalmer on Great Indian Bustard, its associated wildlife and habitat

Name of PI(s)

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Beyond Protected Areas: Status of Thar’s mammals across land-use and protection regimes

Swati Sen

Protected areas are considered as the cornerstone of conservation, aimed at supporting source populations and critical habitats for various wildlife species. However, the ecological values of the larger multiple-use landscape that houses today’s small, disconnected PAs remain poorly understood. The Thar Desert is a mosaic of seminatural habitats, wherein the native fauna depends heavily on open grass- and shrub-dominated habitats, which are declining due to anthropogenic activities, such as agriculture, energy generation, and mining. To evaluate the role of protection in maintaining wildlife populations, we compared the densities of native mammals between protected grasslands (inside Desert National Park, hereafter DNP) and unprotected grasslands (outside DNP in limestone-rich areas), using camera-trap-based distance sampling framework.

Our results indicated a clear overall pattern of greater densities of xeric mammals within protected grasslands as compared to similar but unprotected habitats. Chinkara, Desert Fox, and Indian Fox densities were an order higher, whereas density of Desert Cat was similar between the two regimes, and density of Nilgai was higher outside protected areas than inside PA.

Despite species-specific variation, our results highlight the importance of protected grasslands as a key refuge for mammalian communities. Additionally, they point towards the potential for grassland restoration to recover wildlife populations beyond existing protected area boundaries. Thus, our findings support a landscape-scale conservation approach in which grassland restoration complements protected-area protection, expanding the ecological benefits of conservation across the wider Thar landscape and underscoring the importance of diverse strategies that recognise species-specific population patterns to conserve the Thar’s diverse mammalian communities.

Keywords: Impact and Mitigation of proposed Limestone mining in Ramgarh, Jaisalmer on Great Indian Bustard, its associated wildlife and habitat

✖ & 📧 Text

The study indicates a clear overall pattern of greater densities of xeric mammals within protected grasslands compared to similar but unprotected habitats, highlighting the importance of protected grasslands as a key refuge for mammalian communities, which highlights the need to protect and restore the open habitats of Thar.

Assessing the ecology of Red Junglefowl (*Gallus gallus*) during the breeding season across Kanger Valley National Park and its adjoining Reserve forests, Chhattisgarh

Bhawani Sabat, Ashutosh Singh, Riddhika Kalle

For elusive forest birds, visual encounters may represent only a fraction of their occurrence; acoustic cues can therefore provide an alternative window for field-based monitoring of ground-dwelling galliforms. The Red Junglefowl (*Gallus gallus*), the wild ancestor of the domestic chicken and an ecologically significant galliform, remains comparatively poorly studied in Central India, with limited systematic information from Bastar, Chhattisgarh. We therefore assessed the occurrence and temporal pattern of wild Red Junglefowl (RJF) in Kanger Valley National Park and adjoining forest areas of Chhattisgarh. Field surveys were conducted from March to July 2026 during the breeding season using repeated point counts at 106 fixed sampling stations. Surveys were conducted during peak activity periods (0600-0900 h; 1500-1800 h), with detections recorded across distance bands and classified by detection mode. Anthropogenic variables were recorded to assess their potential influence on RJF occurrence. Habitat attributes and indirect evidences, including feathers and faecal samples, were also collected, with their analysis underway to assess habitat use, dietary patterns and species identification. Preliminary findings showed that RJF was detected at 62 stations (58.5%) across the breeding-season replicates. Overall detection was higher during the first replicate (49.1%) than second (33.0%). At the survey level, 41.0% of surveys resulted in detections. Of 212 surveys, detection was significantly higher during morning (50.9%) than evening surveys (31.1%). Notably, 89.7% of detections were acoustic-only records. Anthropogenic influences, including human presence, livestock grazing, localized hunting, and small-scale logging, were evident and are likely to exert pressure on wild populations. In addition, 56 faecal samples and 128 shed feathers were collected for further laboratory analysis. This study provides baseline information from a lesser-studied habitat, significantly strengthening monitoring efforts for RJF in Central India. However, better conservation and management plans can be suggested after overall population assessment using multiple methods for remaining breeding and non-breeding seasons.

Keywords: *Gamebirds, Galliformes Conservation, Point-Count Sampling, Wild Populations, Forest Avifauna*

✕ & 📷 Text

Exploring the wild ancestor of domestic chicken! We are assessing the population ecology of Red Junglefowl across the lesser-explored forests of Bastar for future monitoring and conservation. #RedJunglefowl #Galliformes

Title of the Project

NA

Name of PI(s)

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Title of the Project

Assessment and Monitoring of Biodiversity values in Saranda Forest Division, West Singhbhum District, Jharkhand

Name of PI(s)

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Diversity and Densities of Avifauna in the Saranda Forest Division: Implications for Conservation

Saurav Chaudhary, Dipesh Kumar Jangir, Ashish Jha, Prashant Mahajan

Introduction: Birds are important indicators of ecosystem health and respond rapidly to changes in habitat structure and anthropogenic disturbances. Saranda Forest Division (SFD), covering an area of 820 km², is one of the largest contiguous Sal Forests in the West Singhbhum district of Jharkhand, India. It is a human-dominated landscape facing various anthropogenic pressures in terms of mining, hunting, lopping and illegal settlement. SFD represents a critical habitat of the Chota-Nagpur Plateau, connecting the Gangetic plains and Deccan regions. Despite its geographical importance, information about the bird diversity and density remains limited. The study represents a comprehensive assessment of avifauna in SFD using the point-count method along with the distance sampling framework.

Objective: Species accumulation curve was plotted to assess sampling adequacy. Density estimates were derived using the distance sampling approach. Also, a hierarchical distance sampling framework was used to get species-specific density estimates for the 10 most abundant species, along with the impact of various habitat parameters on their densities.

Methods: Bird surveys were carried out using 270-point count stations across SFD from Nov 2025 to May 2026. Each point count station was sampled twice, once in the winter season (November-February) and a second replicate in the summer season (March-May).

Results: In total, we encountered 196 bird species from the SFD; 108 from point counts, which were used for all analyses, and the remaining 88 species were detected opportunistically. The estimated bird density was 1423.13 ± 82.92 (CV=0.058) and 1149.75 ± 53.57 (CV=0.046) individuals per sq. km in summer and winter, respectively. Distance to mine, settlement and tree height were important predictors for the density of the top 10 birds. The study mainly found the presence of generalist species rather than specialist species across the study site.

Conclusion: The study highlights the importance of SFD as a significant reservoir of avian diversity within the Chhota-Nagpur Plateau. The results provide a baseline for understanding avian diversity and population densities in a rapidly changing landscape and emphasise the need for habitat-sensitive management, long-term monitoring, and conservation planning that accounts for seasonal variation and anthropogenic pressures.

Keywords: *Anthropogenic, Birds, Biogeography, Landscape*

✉ Text

Saranda Forest Division harbours remarkable avian diversity, with 196 bird species across its landscape. Our study estimates bird densities and explores how various habitat parameters shape the density of birds in this landscape. It also states the need for conservation, as most species encountered were generalist.

📧 Text

Exploring Saranda's avian diversity! Our study recorded 196 bird species and estimated density for the region, highlighting the importance of this landscape for bird conservation. The study urges the need for conservation, as most species encountered were generalist in nature, with very few specialist species encountered

Assessing Elevational and Geographic Range-limit Discrepancies in Himalayan birds using Systematic Camera-trap detections

Anuj Joshi, Vineet K Dubey, Ranjana Pal, Sambandam Sathyakumar, J. A. Johnson

Species range maps underpin conservation planning, yet their ability to represent fine-scale occurrence near distributional limits remains poorly evaluated in mountain systems. We assessed discrepancies between observed bird occurrences and published elevational and geographic range limits in the Gangotri landscape of the western Himalaya and tested whether above-limit detections were associated with functional traits. We used incidental bird detections from camera-trap surveys across 2500-5200 m during 2016-2018. Surveys accumulated 43,436 trap-nights, yielding 551 independent detections of 55 bird species from 228 camera stations. Published upper elevational limits were compiled primarily from IUCN sources and supplemented with ornithological references. Elevational exceedance was calculated relative to published limits, while geographic deviation was assessed from IUCN range polygons using a conservative criterion of at least ten detections outside the polygon and one ≥ 20 km from its boundary. Above-limit detection proportions were modelled using species-level beta-binomial models with morphological trait axes, log range size, and migration class. Eleven morphological traits were summarized using principal component analysis; functional distinctiveness (D_i) and uniqueness (U_i) were calculated from Gower trait distances and evaluated separately. Among 551 detections, 137 were above published upper elevational limits; 26 species had at least one above-limit detection, and 14 showed repeated occurrences across multiple stations. Maximum exceedance reached 3287 m in *Vanellus indicus*. Geographic deviations occurred in a subset of species, with *Montifringilla henrici* and *Bucanetes githagineus* showing the largest mean deviations. Morphological PC1 and PC2, range size, and migration class showed no clear association with the above limit detection frequency. D_i and U_i showed weak, statistically uncertain relationships, and sensitivity analyses across 0-500 m thresholds revealed no stable trait effects. Published limits can diverge from local observations in Himalayan landscapes, while above-limit occurrence was not explained by the functional traits examined. Discrepancies may reflect habitat heterogeneity, seasonal movements, incomplete historical sampling, or limitations of broad-scale range products. As cameras were not specifically deployed for birds and detectability was not estimated, these records indicate potential range-limit discrepancies rather than recent range shifts. Targeted surveys are needed to validate unusual records and refine distributions.

Keywords: *elevational exceedance, geographic deviation, species distribution limits, functional traits*

✕ & 📷 Text

How far do Himalayan birds really go? Our study found 137 detections above published elevational limits across 55 species, highlighting discrepancies between range maps and local occurrences. #Himalayas #BirdEcology #Conservation

Title of the Project

Assessment and Monitoring of Climate Change Effects on Wildlife Species and Ecosystems for Developing Adaptation Strategies in the Indian Himalayan Region under NMSHE Phase II

Name of PI(s)

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08		
	Title of the Project Assessing the community patterns of birds and small mammals in riparian zones within the land-use matrix in the Nilgiris Name of PI(s) Riddhika Kalle Name of Co-PI(s) Ramesh Tharmalingam Funding Agency The Council of Scientific & Industrial Research Extra Mural Research Scheme Project Duration 2025-2028 ✖ Handle of all authors NA 📧 Handle of all authors NA	Patterns of bird community structure and microclimate along riparian patches in Mudumalai Tiger Reserve Aparna A R The riparian zones are curvilinear habitats and critical transition zones between aquatic and terrestrial ecosystems. Riparian zones provide critical habitats supporting a diversity of birds. This study explores patterns of community composition across riparian zones with varying levels of fragmentation and compares microclimatic conditions between riparian core and edge. We conducted bird surveys in summer and winter from October 2025 to June 2026 at 240 fixed-width point count stations for ten minutes within 50 m radius, maintaining a minimum distance of 150 m between sampling points. We recorded a total of 133 bird species, 114 species in winter and 108 species in summer. We characterized riparian vegetation structure and composition at 60 circular plots. Temperature, relative humidity and dew point were measured, and vapour pressure deficit were calculated using Miggo-Blue-S data loggers at core and edge riparian patch. Avian species richness and relative frequency increased with riparian tree height and GBH. The hourly minimum and maximum temperatures varied between the riparian core and the edge habitats. Riparian core showed more stable and buffered microtemperature whereas the edge experiences greater temperature fluctuations. We conclude that contiguity of riparian patches and vegetation quality are vital microclimate refugia within protected areas for maintaining sustaining biodiversity when exposed to extreme climate changes. <i>Keywords: Riparian buffer, community ecology, forest birds, microclimate, Mudumalai Tiger Reserve</i> ✖ & 📧 Text NA

Wild bees dominate the pollinator fauna of an urban-fringe protected area: a pan-trap base assessment of Sukhna Wildlife Sanctuary, Chandigarh

Anand Sharma, Ritesh Kumar Gautam

Insect pollinators ensure the reproduction of most flowering plants, yet the wild pollinator fauna of India remains poorly documented, particularly in urban landscapes. Sukhna Wildlife Sanctuary, a 26 km² dry deciduous forest on the immediate periphery of Chandigarh and the catchment of Sukhna Lake, had no effort-based pollinator inventory before this study. We sampled flower-visiting insects using coloured pan traps (blue, white and yellow) along twelve 250 m transects laid by stratified random sampling. Three temporal replicates from December 2024 and September 2025, produced total 104 pooled trap samples and 2,837 individuals.

The specimens comprised five orders, 27 families, 44 genera and 129 morphospecies. Majorly hymenopteran (87.7% of individuals) and bee-dominated: bees accounted for 2,210 individuals (77.7%) in 18 genera and 49 morphospecies, of which only 8.0% belonged to the managed genus *Apis*. Halictidae contributed 62.6% of all individuals, and *Lasioglossum* alone 48.8%.

Assemblage composition differed significantly among replicates ($p < 0.001$), with turnover contributing 90.5-95.8% of genus-level dissimilarity. Family-level richness was stable across seasons ($p = 0.282$), but morphospecies richness, Shannon diversity, Simpson diversity and evenness all declined sharply after the monsoon (all $p < 0.001$). The trap colour significantly affected richness per sample ($p < 0.001$), and 61 of 129 morphospecies were recorded by a single colour. We recommend protection of bare nesting substrate, phased *lantana* management and a three-season multi-method monitoring protocol.

Keywords: *Wild bees, pan trap, species evenness, Shivalik, pollinator monitoring, Bees, Hymenoptera, Insects*

  Text

We studied the insect pollinators of Sukhna Wildlife Sanctuary, Chandigarh, for a year. We found 129 species and morphospecies of flower-visiting insects. Most of them were bees. And 92% of those bees were wild bees, not honey bees.

Title of the Project

Pollinator Diversity, Pollinator Interactions and Aquatic Assessment of Sukhna Lake in Chandigarh and Sukhna Wildlife Sanctuary: A Comprehensive Study

Name of PI(s)

Mr. Ritesh Kumar Gautam

Name of Co-PI(s)

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Department of Science & Technology & Renewable Energy Chandigarh Administration

Project Duration

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Title of the Project

Monitoring Freshwater Fish population in selected landscape of selected Indian landscapes with reference to the changing climate variables” under LTEO

Name of PI(s)

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Establishing Baseline Data for Aquatic Habitat for Long Term Monitoring Under LTEO Programme

Rakshit Rayal

India is home to exceptional freshwater fish diversity, yet freshwater biota is increasingly threatened by water withdrawal, damming, pollution, and overexploitation. Many freshwater-rich regions lack long-term monitoring to understand biodiversity trends and ecological change. The Long-Term Ecological Observation (LTEO) programme addresses this gap across major Indian landscapes. This study aimed to document fish diversity and assess relationships between fish assemblage composition and environmental variables at selected LTEO sites in the Western and Eastern Himalaya.

Sampling was conducted at 12 selected LTEO sites across the Kosi, Ramganga and Tributary Ramganga in Ramnagar; Shitanda and River Kali in Nainidanda; and Balkhila, Amritganga and Akashgamani in Mandal and Chopta, Western Himalaya. At each site, three sampling points were established, with a 100-m transect surveyed and fish and environmental variables sampled at 20-m intervals. In the Eastern Himalaya, five selected LTEO sites across Hathinala, Sissni Nala, Khilong Nala and Shergao Nala in Eaglenest, West Kameng, Arunachal Pradesh, were sampled. Western Himalayan surveys were conducted during the pre-monsoon season (June-July 2026), while Eastern Himalayan data were collected during November 2025 and March 2026. Fish were sampled using different fishing gears, and physicochemical and habitat variables were recorded. Fish assemblage-environment relationships were assessed using non-metric multidimensional scaling (NMDS) based on Bray-Curtis dissimilarity.

In the Western Himalaya, species richness was highest in the Kosi River (15 species), followed by Tributary Ramganga (11 species). Of 25 species recorded in Uttarakhand, 19 (76%) were Least Concern, three (12%) Vulnerable, one (4%) Endangered, and two (8%) Not Evaluated. In Eaglenest, richness ranged from 3-14 species, with Shergao Nala supporting the highest richness. NMDS indicated significant associations with altitude ($R^2 = 0.671$, $p = 0.005$) and electrical conductivity (EC; $R^2 = 0.765$, $p = 0.019$). Seasonal differences at Eaglenest were not significant (PERMANOVA, $F = 0.635$, $R^2 = 0.074$, $p = 0.125$).

These preliminary findings indicate substantial spatial variation in Himalayan fish diversity and suggest that environmental gradients, particularly altitude and EC, influence fish assemblage structure. Continued LTEO monitoring will provide critical baselines for detecting temporal biodiversity changes and informing freshwater conservation and management.

Keywords: Freshwater ecosystems, Climate change, Long-Term Ecological Observatories (LTEO), Fish diversity, Baseline monitoring

✖ & 📧 Text

Exploring Himalayan freshwater fish diversity through LTEO. Preliminary surveys in Uttarakhand & Arunachal Pradesh revealed strong spatial variation, conservation-priority species, and significant associations of fish assemblages with altitude and electrical conductivity.

Population estimation of saltwater crocodiles in the Andaman and Nicobar Islands

Hakam Singh

The saltwater crocodile (*Crocodylus porosus*) is the largest living crocodilian and inhabits a wide range of coastal habitats, including lagoons, deltas, estuaries, marshes, and creeks. Globally, the species is distributed across the Indo-Pacific region and occurs along the eastern coast of the Indian subcontinent in three disjunct populations in Odisha, West Bengal, and the Andaman and Nicobar Islands. The Wildlife Institute of India (WII), under the directives of Andaman and Nicobar Islands Integrated Development Corporation Limited (ANIIDCO) and in collaboration with the Andaman and Nicobar Forest Department, initiated a project on the “Conservation and Management Plan of Saltwater Crocodile (*Crocodylus porosus*) in the Andaman and Nicobar Islands.” As part of this project, a pan-island population estimation was conducted to assess the distribution and population status of saltwater crocodiles across the archipelago.

Prior to the survey, 536 personnel were trained across 9 forest divisions. A total of 176 creeks were selected, of which 173 were successfully surveyed, while 3 could not be surveyed due to accessibility constraints. A dependent double-observer method was employed to efficiently count the crocodile population and also to estimate the detection probability of the observer. Fieldwork was completed in three closely spaced phases within a single season (February-March 2026), minimising the possibility of crocodile movement among creeks during the survey period and supporting the assumption of population closure. To improve detection probability and account for observer bias, four replicate surveys (two diurnal and two nocturnal) were conducted at each site. For each site, the minimum count (Best count) was calculated as the maximum number of individuals observed cumulatively by both observers across replicates. Site-level best counts were summed up across all surveyed sites to derive a minimum estimate of the observed population. A total of 586 crocodiles were observed across the 173 surveyed creeks, with crocodiles detected in 91 creeks, representing 52.6% of the surveyed sites. Approximately 47% of the total estimated saltwater crocodile population is concentrated in the Little Andaman and Nicobar division. These results provide a detailed island-wide assessment of crocodile distribution and population status.

Keywords: Best count, Replicate surveys, Detection probability, Observer bias, Dependent double-observer method

✖ & 📷 Text

Presentation on the 2026 island-wide population census of the saltwater crocodile (*Crocodylus porosus*) in the Andaman and Nicobar Islands, documenting its distribution and population status to inform future conservation and management strategies.

Title of the Project

Conservation and Management Plan of Saltwater Crocodile (*Crocodylus porosus*) in the Andaman and Nicobar Islands

Name of PI(s)

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Name of Co-PI(s)

Dr. J. A. Johnson
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Funding Agency

Andaman and Nicobar Islands Integrated Development Corporation (ANIIDCO)

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Title of the Project

Understanding the movements and nesting beach dynamics of olive ridley sea turtles along the Odisha coast

Name of PI(s)

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Funding Agency

Odisha Forest
Department & The
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Project Duration

2025-2028

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NA

Beyond the Beach-Residency and Diving Behaviour of Olive Ridley Turtles off the Mass-Nesting Beaches along the Odisha Coast

Abhishek Thawait, Biswajit Mahari, Mohit M Mudliar, Nehru Prabakaran, Bivash Pandav, R. Suresh Kumar

Prior to mass nesting, Olive Ridley sea turtles (*Lepidochelys olivacea*) congregate in large numbers in the nearshore waters off Gahirmatha and Rushikulya in Odisha, yet how they use these waters, including their residency duration, spatial distribution, and diving behaviour, remains largely uncharacterised. In this study, we examined the spatio-temporal nearshore use by eight satellite-tagged turtles (three mating pairs from Gahirmatha and one from Rushikulya) from December 2025 to April 2026. The tagged turtles remained in nearshore waters for 46-107 days, and we modelled their Argos location data using a state-space model to estimate locations at 12-hour intervals, then used them for Kernel Density Estimation (KDE). Males departed from the nearshore waters earlier than females, with an average post-tagging residency of 56 days (range 46-74) compared to 103 days in females (range 97-107). Male turtle departure coincided with the observed decline in mating-pair counts recorded from boat-based transect surveys conducted in the area. Pooled nearshore space-use covered 86 km² (50% KDE) and 637 km² (95% KDE) at Gahirmatha (n= 6), compared to 42 km² and 300 km² at Rushikulya (n=2), respectively. Turtles remained within a median distance of 2.8 km (range 2-3.5 km) from the coast and 8.5 km (range 4.5-13.5 km) from the river mouth. Dive behaviour was shallow throughout, with median depths of 9-12 m at Gahirmatha compared to 18-22 m at Rushikulya, consistent with the narrower continental shelf at the latter site. Although most tracked locations at Gahirmatha (93%) fell within the existing Marine Sanctuary boundary, turtles aggregated in a core area of approximately 24 km², concentrated near the river mouth and the Ekkakula-Habbalikati spit. These results reveal a temporally and spatially structured pattern in the Olive Ridley turtles nearshore aggregation during the breeding period. By identifying core use areas and residency windows of aggregating turtles, this study provides the critical information required for targeted monitoring and securing turtle populations.

Keywords: Satellite telemetry, Nearshore Space-Use, Boat-Transects, Sexual Segregation

✖ & 📧 Text

NA

Nesting site fidelity and nearshore use by solitary-nesting Olive Ridley turtles (*Lepidochelys olivacea*) along the Tamil Nadu coast

Anoop Sabu, Mohit M Mudliar, V. Kirubhanandhini, S Senbagapriya, R Suresh Kumar

Solitary-nesting Olive Ridley turtles, unlike their mass-nesting counterparts, likely do not form congregations in nearshore breeding areas and may occur across a broader coastal region, requiring investigation. This is particularly important because, in recent years, turtle mortalities along the Tamil Nadu coast have increased due to incidental capture in fisheries. To determine this, we fitted 10 solitary-nesting female turtles along the Chennai and Pitchavaram coast with satellite transmitters during January and February 2026. Using a state-space model, we modelled the received Argos location data to estimate locations at 12-hour intervals for the tracking period. We then derived shoreline distance, movement persistence, and speed for each turtle, along with Kernel Density Estimation (KDE). Additionally, we collected recapture data through daily beach monitoring and identified renesting of satellite-tagged turtles using dive data and direct sightings.

Eight of the ten tagged turtles remained in nearshore waters for 283 turtle-days (ranging from 18 to 58 days), with a mean distance from the coast of 6.02 km ($\pm$ 5.39 SD). We observed five renestings by the tagged turtles: four at the same coastal stretch and one at a distant beach, 65 km away. After nesting, the turtles moved away (40 to 120 km) and then returned closer before renesting. The inter-nesting period for the tagged turtles averaged 22 ± 1.3 SD days. Additionally, six out of 79 flipper-tagged turtles returned, averaging 25.5 ± 7.4 SD days (range = 18 to 36 days). Core-use areas (50% KDE) varied widely within and between turtles that renested (180 km²-2063 km²) and those that did not (322 km²-1,477 km²).

The study finds that solitary-nesting Olive Ridley turtles off the Chennai coast show high site fidelity, but their movement behaviour differs markedly from that of mass-nesting individuals of the Odisha coast, which exhibit more restricted spatial ranges. These wide-ranging movements increase the turtles' exposure and vulnerability to incidental capture in nearshore fisheries, highlighting the need for effective implementation of fishery regulations along the coast.

Keywords: Nesting ecology, Inter-nesting movements, renesting, satellite telemetry

Title of the Project

Tracking fine-scale movements and near-shore use of Olive Ridley turtles off Tamil Nadu Coast

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Funding Agency

Tamil Nadu Forest Department (Project collaborator: Advanced Institute for Wildlife Conservation)

Project Duration

2025-2027

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NA

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NA

✖ & 📧 Text

NA

Title of the Project

Monitoring of baleen whales and other cetaceans in the Lakshadweep archipelago

Name of PI(s)

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Group behaviour and movement patterns of nearshore spinner dolphin (*Stenella longirostris*) around Kavaratti Island, Lakshadweep Archipelago

Tanmay Gokhale

The Lakshadweep Archipelago, comprising India's only coral atoll system, supports diverse and highly productive shallow-water marine ecosystems that provide important habitat for cetaceans. Despite the ecological importance of these island-associated waters, fine-scale information on how Spinner dolphins (*Stenella longirostris*) use shallow nearshore habitats in Lakshadweep remains limited. We investigated the behavioural and movement patterns of spinner dolphin groups around Kavaratti Island, focusing on their diurnal behaviour in nearshore marine habitats. All observations were conducted within approximately 500 m of shore using a Mavic 3 Classic quadcopter drone. Behaviour was quantified through 10-second scan sampling, while discrete behavioural events were recorded separately. Drone-derived GPS tracks were used to estimate track length, net displacement, movement speed, straightness index and turning characteristics, allowing behavioural observations to be examined alongside fine-scale movement patterns.

During March and April 2026, 14 spinner dolphin sightings were recorded, with group sizes ranging from 3 to 91 dolphins. Considerable variation in behavioural states and movement patterns was observed across sightings. Dolphin behaviour varied from predominantly resting to strongly directed travelling, with milling and social activities forming important components of several observations. Movement trajectories ranged from highly directed tracks ($n=7$), with straightness indices >0.80 , to markedly tortuous tracks ($n=3$), with straightness indices <0.50 . A total of 1,324 behavioural events were recorded, of which belly-to-belly rubbing was the most frequent behaviour (46.4%), followed by tail touching (21.5%), highlighting the prominence of close-contact social interactions. Notably, behavioural activity and pod-level movement were not uniformly coupled. Social activity occurred both within predominantly directed travelling groups and in sightings characterised by more tortuous movement, indicating that social interactions are not restricted to a single movement context.

Our findings indicate that Kavaratti's shallow nearshore waters are utilised for various activities by Spinner dolphins, supporting resting, directed movement, social interactions and behavioural transitions. These results provide baseline information on how dolphins use nearshore waters in Lakshadweep's atoll environment and highlight the potential of drone-based observations for studying behavioural and movement patterns relevant to nearshore conservation.

Keywords: Marine mammal, Social behaviour, Island ecosystem, Cetacean ecology

✉ & 📧 Text

A bird's-eye view of dolphin life! From cruising in straight lines to twisting, turning and socialising, our drone surveys captured the diverse ways spinner dolphins use shallow nearshore waters—revealing a dynamic, multifunctional habitat in Lakshadweep.

Integrating Metagenomics into Disease Surveillance at Human, Livestock & Wildlife Interfaces

Tapendra Saini, Parag Nigam, Jain Karan Bharat

Protected areas across the Indian subcontinent face continuous pressures from human and livestock encroachment, creating high-risk interfaces where disease spillover and spillback between wildlife, livestock, and human populations are a persistent risk. Sariska Tiger Reserve is a critical area for assessing this risk because villages within the reserve bring wildlife, livestock & humans into close contact. Past disease events in Sariska, including a large-scale sambar mortality attributed to Hemorrhagic Septicemia and reports of tuberculosis in monkeys and leopards, underline the importance of systematic pathogen surveillance in this landscape.

This study proposes a metagenomics-based surveillance system focusing on waterholes, the primary points of interaction for wildlife, livestock, and people in the semi-arid Sariska landscape. Waterholes will be systematically sampled across core, buffer, interface, and adjoining village zones and categorised along disturbance gradients using sign surveys and camera trapping to quantify wildlife visitation and overlap among wildlife, livestock, and humans. Based on the disturbance patterns, the waterholes will be sampled across the zones to get a gradient of pathogens occurring in the waterholes. Additionally, as a comparison, water points away from the protected area with minimal to no influence from wildlife will be sampled.

Unlike targeted diagnostics, metagenomics captures the full range of pathogens in the sample, including bacteria, viruses, fungi, and parasites. Shotgun sequencing enables detection of novel and rare pathogens as well as antimicrobial resistance genes, all through non-invasive, high-throughput environmental sampling that avoids the invasive logistical and ethical burden of handling wild animals. Conventional pathogen surveillance methodologies target only a limited number of known agents, offering an incomplete picture of the disease burden actually circulating at these critical interfaces.

Expected outcomes include a comprehensive assessment of pathogens across the disturbance gradient and prioritisation of pathogens of zoonotic significance at specific waterholes, informing management decisions and specific interventions. The project is intended to develop a replicable metagenomic surveillance pipeline for routine application in protected areas across the country.

Keywords: *Interface, Metagenomics, Zoonotic Pathogens, Surveillance, One Health*

 Text

At the Internal Annual Research Seminar, Dr. Tapendra Saini presented a project concept on a metagenomics-based pathogen surveillance system at the human-livestock-wildlife interface in Sariska Tiger Reserve, supporting One Health and early detection of zoonotic threats. #WII #OneHealth #Metagenomics

 Text

At WII's IARS, Dr Tapendra Saini presented a National One Health Mission-funded project concept regarding metagenomics-based pathogen surveillance at the human-livestock-wildlife interface in Sariska, using waterholes for non-invasive detection of zoonotic threats. #WII #OneHealth #NOHM

Title of the Project

Development of a Metagenomics-based pathogen surveillance system at the human, livestock, and wildlife interface in Sariska Tiger Reserve

Name of PI(s)

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Name of Co-PI(s)

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Funding Agency

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Title of the Project

Evolutionary and Conservation Genomics of Endangered Mammals in India

Name of PI(s)

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Dr. Bilal Habib

Funding Agency

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Project Duration

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The Curious Case of Canidae: Genomic Insights into Evolution, Demography and Conservation

Shrushti Modi, Lauren Hennelly, Bilal Habib

Canidae is one of the most geographically widespread carnivore families, occupying diverse ecological niches across all continents except Antarctica. Originating in North America approximately 40 million years ago, canids expanded globally and diversified into three major evolutionary lineages: South American canids, wolf-like canids, and red fox-like canids. India represents an interesting setting for exploring this evolutionary diversity, with the dhole (*Cuon alpinus*), Indian wolf (*Canis lupus pallipes*), and Bengal fox (*Vulpes bengalensis*) representing different evolutionary histories, ecological adaptations, and behavioural strategies.

This study utilises population and comparative genomics to examine Indian canids across multiple evolutionary scales. For the dhole and wolves, including Indian and Himalayan wolves, we aim to generate population-scale whole-genome datasets from 36 dholes and 34 wolves sampled across India at approximately 10× coverage. We will use these datasets to assess population structure and connectivity across human-modified landscapes, investigate interspecific hybridisation, quantify the genomic consequences of population decline and inbreeding, and examine how contrasting ecology and behaviour influence genetic diversity and connectivity. The study will also investigate population differentiation within dholes to evaluate genomic support for proposed subspecies across the Indian subcontinent.

Complementing these population-level analyses, we will use the whole genome of a single Bengal fox to investigate its evolutionary history, phylogenetic relationships, species divergence, and historical demography in comparison with related *Vulpes* species. Thus, while dholes and wolves form the population-genomic component of the study, the Bengal fox provides a complementary evolutionary genomic perspective.

We have obtained sampling permissions for captive dholes from zoological parks across India, complementing samples collected through previous projects. We have completed whole-genome sequencing for two dholes, two wolves, and one Bengal fox, and genomic analyses are underway. Together, these analyses will provide insights into the evolutionary history, population dynamics, and genomic conservation of India's diverse canids.

Keywords: Asiatic wild dog, Genetic connectivity, Historical decline, Population structure, Whole genome sequencing

✉ Text

What can genomes reveal about India's canids? From dholes and wolves to the Bengal fox, our study uses population and comparative genomics to explore evolutionary history, population structure, connectivity, hybridisation and the genomic consequences of historical decline.

📧 Text

From dholes and wolves to the Bengal fox, we explore the genomic story of India's diverse canids. Using population and comparative genomics, we investigate their evolutionary history, connectivity, hybridisation, historical demography and conservation challenges.

Spatially Explicit Integration of Habitat Suitability and Livestock Disease Prevalence Delineates Potential Epidemiological Exposure Landscapes for Gaur (*Bos gaurus*) in Central India

Arun Kumar Gorati, Himanshu Joshi, Ritesh Vishwakarma, Bhaskar Bhandari, Prashant Deshmukh, Rajiv Ranjan, Anupam Sahay, Nitin Gupta, Lakshman Krishnamoorthy, Sameeta Rajora, Parag Nigam

Introduction: Globally, wildlife has been encountering pathogens circulating in adjacent livestock populations, creating potential epidemiological exposure at wildlife-livestock interfaces. In this study, we used a spatial framework to delineate potential epidemiological exposure for gaur (*Bos gaurus*) in Bandhavgarh Tiger Reserve by explicitly integrating habitat suitability with livestock foot-and-mouth disease (FMD) seroprevalence.

Study Area: Bandhavgarh Tiger Reserve, Madhya Pradesh

Objectives: (i) To model habitat suitability for gaur in Bandhavgarh Tiger Reserve using environmental, topographic and anthropogenic predictors, (ii) To characterize the spatial distribution of livestock foot-and-mouth disease (FMD) seroprevalence using spatial autocorrelation analysis and geostatistical interpolation, and (iii) To integrate habitat suitability and livestock disease prevalence to identify potential FMD exposure zones for gaur.

Methodology: We used MaxEnt to predict gaur habitat suitability after screening predictor variables for multicollinearity, then converted the continuous suitability surface into a binary suitable-habitat map. We spatially evaluated village-level FMD seroprevalence for clustering using Getis-Ord G_i^* (ArcGIS Pro), then interpolated it using inverse distance weighting (IDW). Model performance was assessed using mean error, mean absolute error, root mean square error, and R^2 . We spatially integrated it with the binary habitat suitability layer to generate a Potential Wildlife Exposure Index.

Findings: The habitat suitability model showed high predictive performance ($AUC = 0.904 \pm 0.001$), with moderate to very high suitability covering 317 km² (20.8%) of the reserve. Livestock FMD prevalence exhibited significant spatial clustering (Global Moran's $I = 0.350$, $p < 0.001$). Integrating habitat suitability modeling and disease prevalence identified 302 km² (19.8%) with moderate to very high FMD habitat overlap, while 67.5% of the reserve fell outside the predicted overlap.

Implications: The framework provides a spatially explicit decision-support approach for prioritizing disease surveillance and wildlife-livestock interface management in landscapes supporting gaur populations. Importantly, the analysis does not directly quantify gaur-livestock contact, wildlife infection, or transmission dynamics.

Keywords: Inverse Distance Weighting, Bandhavgarh, Spatial epidemiology, Gaur, Habitat suitability modelling, wildlife-livestock interface

✉ & 📷 Text

Mr. Gorati Arun Kumar presented on integrating species distribution modelling, spatial epidemiology and GIS to explore potential disease exposure at the wildlife-livestock interface for gaur (*Bos gaurus*) in Bandhavgarh Tiger Reserve, advancing landscape-level disease ecology.

Title of the Project

Population Management Strategies for Gaur (*Bos gaurus gaurus*) Conservation: Supplementation of Gaur in Bandhavgarh Tiger Reserve

Name of PI(s)

Dr. Parag Nigam

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Funding Agency

Madhya Pradesh Forest Department

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2024-2027

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Title of the Project

Assessment of genetic variation and reproductive hormone profiles in selected endangered species of conservation interest at the Padmaja Naidu Himalayan Zoological Park, West Bengal.

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Peaks Beyond the Mountains: Tracking Stress and Reproduction in Zoo Red Pandas (*Ailurus fulgens fulgens*) and Nutritional Stress Comparisons with Wild Populations

Tryambak Dasgupta, Bharti Arora, Pranita Gupta, Joy Dey, Arun Kumar Mukhopahyay, Basavaraj S. Holeyachi, Samrat Mondol

Endangered wild red panda populations face continuous decline from habitat fragmentation, poaching, and the illegal pet trade, making augmentation programmes vital for their future. This study assessed faecal glucocorticoid (fGCM), triiodothyronine (fT3M), progesterone (fP4M), and testosterone (fTM) metabolites in captive red pandas at Padmaja Naidu Himalayan Zoological Park, Darjeeling, to understand physiological baselines and assess reproductive parameters.

A total of 863 faecal samples were collected (May 2024-October 2025) from selected red pandas (N=6; 4F:2M). Hormone metabolite measures were standardised using specific enzyme immunoassays (EIA) for comparative analyses of breeding (n=2), non-breeding females (n=2) and breeding males (n=2), using appropriate non-parametric statistical analyses. Additionally, 45 genetically confirmed wild faecal samples were collected from Neora Valley National Park (n=32) and Singalila National Park (n=13) for comparative measures of fGCM, fT3M, fP4M & fTM metabolites against captive samples (n= 73) for the same months.

Long-term monitoring revealed distinct longitudinal patterns in fP4M and fTM levels for both breeding and non-breeding females. The reproductive phase was observed between December and July, with successful births in June & July. No dimorphic differences were observed across all the 4 biomarkers ($p > 0.05$).

Progesterone metabolite levels were significantly elevated during the summer, monsoon & winter seasons of 2024 ($*p < 0.05$) across all individuals, showcasing the post-partum phase in breeding females and initiation of the next luteal phase in non-breeding females. Testosterone metabolite levels were significantly high during the summer to autumn seasons in 2024 & 2025 ($***p < 0.001$), highlighting active sexual cycles. Comparing the complete endocrine panel between wild and captive samples, captives showed higher estimates in stress ($***p < 0.001$) & reproductive biomarkers ($**p < 0.01$). Conversely, wild samples showed higher nutritional levels ($***p < 0.001$).

This study establishes critical baseline information on red panda stress physiology and reproduction across different breeding stages. Such information is useful for zoo administrators towards management of animal welfare and the recovery of captive populations.

Keywords: Endocrine Profiling, Enzyme Immunoassay, Stress & Reproductive Physiology, Captive Breeding

✉ & 📧 Text

Our latest study tracks the hidden biological signals of the Red Panda (*Ailurus fulgens fulgens*) by monitoring hormone dynamics across breeding cycles and stress markers in ex-situ zoo populations, while comparing nutritional stress directly with wild counterparts! A collaborative project: WII, Dehradun & PNHZP, Darjeeling

From crisis to recovery? the temporal genetic story of Assam's rhinoceros

Shrewshree Kumar, Megha Mehta, Aishika Kala, Ashwin Edakkara, Amit Sharma, Samrat Mondol

The Greater one-horned rhinoceros is an iconic megaherbivore of the Indian subcontinent that underwent a catastrophic population decline ~50 years ago due to rampant poaching and habitat fragmentation. Concerted conservation efforts have led to a remarkable recovery, from a few hundred to ~4,000 individuals in the wild today. However, historical population bottlenecks may influence the genetic signatures of the contemporary population. This study aims to investigate temporal genetic variation in the rhinoceros population in Assam (Pobitora Wildlife Sanctuary (WLS), Orang National Park (NP), Manas NP and Kaziranga NP) using biological samples collected from both pre- (n=406) and post-bottleneck periods (n=1110). Twelve microsatellite markers (STRs) and six mitochondrial DNA (mtDNA) markers were used to study the genetic variation in both time periods. The observed heterozygosity (H_o) values remained the same for both time periods ($H_o=0.22$), whereas expected heterozygosity (H_e) increased from 0.53 to 0.60. Allelic richness marginally declined in the contemporary ($AR=3.39$) compared with the historical ($AR=3.46$) rhino population. Bayesian clustering analyses using microsatellite markers suggested the same genetic structure ($k=3$) for both the historical and contemporary rhino samples for Pobitora WLS, Orang NP and Kaziranga-Manas NP. However, the combined genetic structure analyses from both time periods resulted in $k=6$, indicating changes in allele frequencies across the bottleneck. Genetic inbreeding (FIS) increased in the contemporary population (FIS=0.50) compared with the historical population (FIS=0.41). Analysis of polymorphic sites across six partial mitochondrial genes identified 54 haplotypes ($h=54$) in the historical samples (n=232) compared with only 18 haplotypes ($h=18$) in the contemporary samples (n=80). Although analyses of both molecular markers do not indicate substantial changes in genetic variation across timelines, these patterns require further sampling to substantiate them. The findings in this study have important implications for future rhinoceros management, indicating a recent loss of genetic diversity and suggesting that the contemporary genetic structure may reflect the effects of human-induced isolation. Thus, ongoing conservation programs should incorporate historical genetic baselines to identify lost variation and inform targeted conservation efforts.

Keywords: population bottleneck, genetic structure, temporal genetic variation, Greater one-horned rhinoceros

🔗 & 📷 Text

Population recovery is not necessarily genetic recovery! Comparing historical and contemporary samples from Assam, our study reveals persistent population structure alongside reduced allelic richness, highlighting the importance of historical genetic baselines in conservation. #indianrhinos #conservationgenetics

Title of the Project

Developing genetic database of rhino horn stockpile of Assam to curb poaching threat and assess temporal changes in genetic variation

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Title of the Project

Conservation of the Caracal (*Caracal caracal*) in Rajasthan

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Building a Conservation Framework for the Caracal in the Greater Ranthambore Landscape

Shomita Mukherjee, Ayan Sadhu, Dharmendra Khandal

The Caracal (*Caracal caracal*) is a priority species for biodiversity conservation in India. Open Natural Ecosystems in Rajasthan and Gujarat form the stronghold of the species and these habitats are under various significant and continuous threats from land-use change and other anthropogenic activities. Recent information from the Greater Ranthambhore landscape (GRL) suggest a putative estimate of 55 Caracals based on distribution models. Model predictions need to be tested on ground for habitat associations and clarity on distributions, along with awareness generation among stakeholders for informed conservation action. The objectives of the proposed project are to:

1. Develop targeted strategies for Caracal conservation.
2. Identify core areas of Caracal habitat for conservation and monitoring in the Greater Ranthambhore Landscape (GRL) in and around the Ranthambhore TR, Ramgarh Visdhari TR, Mukundara Hills TR, Dholpur Karauli TR and Bandh Baretha WLS.
3. Explore the scope for habitat restoration and management of Caracal in Rajasthan and prepare a Conservation Action Plan for Caracal.

The project launch workshop was conducted in April-2026 in the presence of Forest Department officials and other stakeholders. To date, we conducted several awareness activities in schools on Caracal Day, and World Environment Day, processed existing Caracal data from Tiger Watch, assessed habitat through vegetation sampling around existing Caracal records, and carried out camera trapping in Ranthambhore National Park (n = 53 cameras; 1,865 trap nights). Currently, we are conducting rapid assessment surveys through interviews with locals in the Dholpur-Karauli and Mukundara-Ramgarh Vishdhari regions. These surveys are being carried out by our research team and Tiger Watch Village Volunteers. Through results of these interviews and existing distribution models of the species in the GRL, focused camera trapping surveys will be initiated in winter, to expand on existing information on the distribution of the species and bridge information-gaps in past surveys. Apart from this, a training workshop will be held for Forest Department staff and awareness and education syllabuses will be formulated based on knowledge-gaps identified in stakeholders. The final outcome would be a Conservation Action Plan for Caracal in Rajasthan based on results of our distribution surveys and expert opinions.

Keywords: Conservation Planning, Habitat Assessment, Open Natural Ecosystems, Rajasthan, Small cats, Species Distribution

✉ Text

The Caracal is a priority species for conservation in India. Our ongoing work in the Greater Ranthambhore Landscape combines habitat assessment, community perception & camera trapping to map its distribution and develop a Conservation Action Plan for Caracal.
#conservation #rajasthan #semiarids

📧 Text

The Caracal is one of India's lesser-known wild cats. Our ongoing work in the Greater Ranthambhore Landscape combines camera trapping, habitat assessment & local knowledge to identify where Caracals persist and which areas need focused conservation. Final outcome: A Conservation Action Plan for Caracal in Rajasthan.

Where Rosettes Roam: Leopards and Their Prey Across Selected Sites in the Similipal-Satkosia Landscape

Tarun Singh

Although India’s overall large carnivore numbers have increased, populations in the East-Central region have not shown the same recovery over time. The leopard (*Panthera pardus*), in particular, continues to face threats such as habitat destruction, poaching, and human-wildlife conflict. In Odisha, a decreasing trend in leopard and prey populations highlights the urgent need for systematic monitoring. As part of a long-term large-carnivore population monitoring project, we evaluated leopard and prey populations across key sites in the biodiversity-rich Similipal-Satkosia landscape, a fragmented forest complex with both protected and non-protected areas, to develop effective conservation strategies.

We conducted systematic camera-trap surveys in Kuldiha Wildlife Sanctuary, Hadagarh Wildlife Sanctuary, Rebana Reserve Forest, and in the Satkosia and Mahanadi wildlife divisions of Satkosia Tiger Reserve (STR). Leopards were identified individually by their unique rosette markings. Leopard density estimates were obtained using maximum-likelihood spatially explicit capture-recapture (SECR) models. Prey relative abundance indices (RAI) were calculated from detections per 100 trap-nights. Furthermore, leopard diet in STR was analysed via trichotaxonomic examination of medullary guard hairs from field-collected scat samples.

Leopard density and prey abundance varied significantly across the landscape. The highest leopard densities were observed in Satkosia and Mahanadi, measuring 17.9 ± 1.75 and 11.9 ± 1.66 leopards per 100 km², respectively, aligning with higher levels of medium- and large-sized prey, which were central to the leopard diet. Conversely, medium- to large-sized ungulates, excluding wild boar (*Sus scrofa*), were either absent or found at low densities in Kuldiha, Hadagarh, and Rebana. Leopards were functionally extinct in Kuldiha and Hadagarh, and remain at low densities in Rebana, with 2.2 ± 0.70 leopards per 100 km². Small-bodied prey were more prevalent throughout the study sites.

Based on the preliminary data, our findings highlight the importance of a comprehensive, landscape-scale leopard conservation strategy. Special focus is needed on protecting prey species and promoting population growth through supplementation efforts. Reducing human-related threats, improving monitoring in unprotected areas, and establishing functional ecological corridors are essential actions to maintain leopard populations and increase their range across this important landscape.

Keywords: *Large-carnivore, camera-traps, connectivity, non-protected areas*

✕ & 📷 Text

Leopard densities vary across the Similipal-Satkosia Landscape depending on the availability of medium- to large-sized prey. Restoring ungulate prey, securing functional ecological corridors, and monitoring non-protected areas are critical to landscape-scale carnivore recovery.

Title of the Project

Long-term Research and Conservation Intervention in and around Tiger Reserves of Odisha

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Title of the Project

Long Term Monitoring of tigers, co-predators and prey in tiger reserves and tiger bearing areas of Vidarbha, Maharashtra

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Are Stable Large Carnivore Populations Demographically Stable? Comparing Protected and Human-Dominated Landscapes of Central India

Sajid Reza, Kanishka, Bilal Habib

Understanding how demographic parameters shape large-carnivore populations is essential for evaluating their persistence in increasingly human-dominated landscapes. We compared temporal variation in survival, seniority, recruitment, and population growth of tigers (*Panthera tigris*) and leopards (*Panthera pardus*) using multi-year (2020-2025) camera-trap capture-recapture data from the Bramhapuri Forest Division and the Pench Tiger Reserve in central India using an extended Pradel model. Demographic performance differed substantially among the landscapes, species and sexes. For tigers, cumulative survival over five years was higher in Bramhapuri than Pench among males (29.5% vs 16.8%), whereas females showed higher survival in Pench than Bramhapuri (55.2% vs 49.2%). Leopard survival was consistently higher in Pench, with cumulative apparent survival of 33.1% and 41.3% for males and females, respectively, compared to 15.8% and 27.4% in Bramhapuri. Seniority showed broadly similar landscape differences, particularly for leopards, indicating greater persistence of previously recruited individuals in the protected landscape. Population growth also differed between landscapes; λ was higher in Pench than Bramhapuri for both male and female leopards, while λ for tigers was comparatively similar between sites. Recruitment contributed substantially to population change but varied strongly among species and sexes. The contrasting demographic patterns may reflect differences in how landscape conditions interact with the ecological requirements of males and females. In Pench TR, male tiger survival is lower owing to higher levels of male-male interaction compared to areas with diffused female territories such as Bramhapuri FD. Female survival is higher in Pench TR than in Bramhapuri FD, owing to higher energy requirements that result in lower survival rates. Leopard survival, which is influenced by interactions with large predators like tigers, is governed by higher habitat heterogeneity and complexity at Pench TR compared to Bramhapuri FD, providing greater refuge and escape opportunities, potentially reducing the consequences of interspecific competition and predator interactions. Our study indicates that interactions and habitat characteristics influence demographic parameters.

Keyword: Large carnivores, Tigers, Leopards, Demography, Population dynamics, Human-dominated landscapes

✉ & 📧 Text

Are stable populations truly demographically stable? Examining demographic parameters across protected and unprotected areas in Central India. It reveals how different demographic processes sustain carnivore populations under contrasting conditions. #Tigers #Leopards #CarnivoreConservation #WildlifeEcology

Small Cats in a Big Cat Landscape: Understanding Small Felid Ecology in Vidarbha, Maharashtra

Dharmarajsinh, Kanishka, Bilal Habib

Small cats remain understudied in India despite sharing landscapes with increasing large-carnivore populations. Understanding how they respond to habitat, prey availability, competitors, and anthropogenic features is important for assessing their persistence in large-carnivore dominated landscapes. We assessed habitat associations of 2 sympatric small felids, the jungle cat (*Felis chaus*) and rusty-spotted cat (*Prionailurus rubiginosus*), in Tadoba-Andhari Tiger Reserve, central India. We used camera-trap data from 617 locations, resulting in 20,483 trap nights during the dry season (February-April) of 2025. We compared large-carnivore density estimates using spatially explicit capture recapture (SECR) between previously published estimates from 2016 to 2025, along with sampling areas. We modelled small cat counts using negative binomial generalized linear models incorporating habitat, prey, anthropogenic, and sympatric carnivores as predictors and quantified activity overlap with competitors. Tiger density increased from 5.64 (SE $\pm$ 0.71) to 6.73 (SE $\pm$ 0.72) individuals/100 km² between 2016 and 2025, while leopard density was not recorded in 2016; in 2025 density was 9.17 (SE $\pm$ 0.84) individuals/100 km², with comparable sampling areas. Jungle cats were detected at 40.7% traps and rusty-spotted cats at 38.1%, compared with 82.7% for tigers and 82.5% for leopards. Jungle cat showed significant positive associations with non-forest habitat, pre-monsoon water availability, and small-prey occurrence, while rusty-spotted cat showed significant positive associations with very-dense forest, leopard occurrence, and negative with human occurrence. Both small cats showed high temporal activity overlap Δ (coefficient of temporal overlap) = 0.95, and substantial temporal overlap with large carnivores; jungle cat activity overlap was Δ = 0.74 with tigers, and Δ = 0.79 with leopards, while rusty-spotted cat overlap was Δ = 0.69, and Δ = 0.74 respectively. Despite increased large-felid densities, both small cats remained widely detected across reserve. Our findings indicate species-specific associations with habitat and prey, alongside substantial temporal overlap with large carnivores, suggesting that small cats can persist within landscapes supporting high densities of large felids. Maintaining heterogeneous habitats and prey-rich areas, while accounting for anthropogenic features in landscape management, may therefore be important for sustaining small-felid populations in large carnivore landscapes.

Keywords: *felid ecology, camera trapping, interactions, coexistence, carnivore*

✉ & 📧 Text

Sharing space with giant predators! A 2025 study in Tadoba-Andhari Tiger Reserve reveals how jungle cats and rusty-spotted cats thrive in landscapes dominated by rising tiger and leopard populations.

Title of the Project

Long-Term Monitoring of Tigers, Co-Predators and Prey in Tiger Reserves and Other Tiger Bearing Areas of Vidarbha, Maharashtra

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Title of the Project

Long Term Monitoring of tigers, co-predators and prey in tiger reserve and tiger bearing areas of Vidarbha, Maharashtra

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Assessing Habitat Use and Spatial Density of Honey Badger (*Mellivora capensis*) in Melghat Tiger Reserve, Maharashtra

Mohana Krishna Narige, Mridula, Jaydeep Patil

The Honey Badger (*Mellivora capensis*) is a widely distributed but understudied meso-carnivore across the Indian subcontinent. Despite its broad distribution, information on its population status and habitat associations remains limited, partly due to its elusive and predominantly nocturnal behaviour. Understanding its habitat use and abundance is therefore important for establishing crucial information for its monitoring and conservation. Systematic camera-trap surveys were conducted using a 2 km² grid-based sampling design. We aimed to assess the habitat use and density of honey badger in Melghat Tiger Reserve, Maharashtra, India. Single-species, single-season occupancy model was used to evaluate habitat use while accounting for imperfect detection and Spatial Presence-Absence (SPA) model was used to estimate population density and to determine the influence of different Gamma prior shape and rate parameters on density estimates.

Habitat use was positively associated with distance from villages and NDVI. The observed associations suggest that honey badgers may favour relatively undisturbed areas with higher NDVI, highlighting the influence of both human disturbance and habitat structure on their spatial use. Using Gamma (Shape 20, Rate 15), density was observed to be 10.19 individuals/100 km² (6.97-16.63) in 2022, 25.1 individuals/100 km² (12.21-35.30) in 2024 and 6.34 individuals/100 km² (4.51-9.42) in 2025. However, using Gamma (shape 40, rate 30), estimated density was 8.25 individuals/100 km² (6.25-11.28) in 2022, 9.17 individuals/100 km² (6.18-14.96) in 2024 and 5.77 individuals/100 km² (4.28-7.99) in 2025. These differences demonstrate the sensitivity of SPA-derived density estimates to prior parameterisation and highlight the need for biologically justified priors. Telemetry data could provide empirical information on movement and space use, allowing more informative priors for sigma thereby improving the biological basis and precision of density estimates.

The study provides baseline estimates of honey badger density and habitat use in Melghat Tiger Reserve. This provides a foundation for future fine-scale studies aimed at understanding the space use and population dynamics of honey badgers.

Keywords: *Ratel; Mustelid, Spatial Presence-Absence, Occupancy, Mesocarnivore*

✉ & 📧 Text

Presenting our study on Honey Badger (*Mellivora capensis*) in Melghat Tiger Reserve, assessing habitat use and spatial density using camera-trap data. Findings highlight habitat associations and the importance of biologically informed priors.
#Honey Badger, #Ratel, #Mustelid, #Melghat, #Maharashtra

Living in the Shadows: Initial Insights into the Ecology of the Tibetan Sand Fox (*Vulpes ferrilata*) in Changthang Wildlife Sanctuary, Ladakh

Prakruthi G M

The Tibetan Sand Fox (*Vulpes ferrilata*), distributed in the Indian Trans-Himalayan region, is among the least-studied meso-carnivores in India. Studies highlighting its ecology, particularly habitat use/preference, dietary spectrum, and interactions with sympatric predators, are lacking in India. In the present study, we have assessed the distribution, habitat use, activity pattern, and overlap with other mesopredators, along with denning characteristics of the Tibetan Sand Fox in Changthang, Ladakh. Data on status and distribution were gathered by deploying camera traps for 30-40 days in a total of 101 grids (3×3 km²). Habitat use and activity overlap were assessed using the data on direct sightings and camera trap records. On each sighting of dens in the study area, data on den type and its dimensions (depth), den entrance azimuth, shape of entrance, length and breadth of entrance, internal height and width, habitat substrate (soil, rock), distance to the nearest dens of other carnivores, elevation, habitat types and location (valley/hill/wetland), and terrain were noted.

Sand foxes were photo-captured in a total of 13 camera-trap locations across the Tsokar, Hanle, and Marsimikla regions, with a detection rate of 2.096. Sand foxes were recorded mostly in rocky terrain with elevations ranging between 4,600 and 5,400 m, and most on gentle slopes (2.8° and 20.6°). The sand fox was found to be crepuscular in nature, with most active during early morning hours (6 AM to 7 AM) and late evening hours (7 PM to 9 PM). Its activity pattern overlaps substantially with the red fox ($\Delta = 0.75$). A total of 11 dens were sighted in the study area, including one natal den and 10 resting dens, predominantly located in rocky areas. Dens had a mean length of 154.0 cm, volume of 1.24 m³, internal width of 55.38 cm, and internal height of 72.55 cm. All dens had semi-circular entrances with an average height of 65.58 cm and a width of 104.36 cm. These preliminary findings provide baseline information on the ecology of the Tibetan Sand Fox in Changthang and contribute to understanding its association with habitat and prey resources in the Indian Trans-Himalaya.

Carnivore, Vulpes, habitat use, den, activity pattern, Ladakh, Trans-Himalaya

✖ & 📷 Text

Excited to present our ongoing research on the Tibetan Sand Fox (*Vulpes ferrilata*) in Changthang, Ladakh. Exploring habitat use, resource utilization, den ecology, and interactions with sympatric carnivores to better understand and conserve this high-altitude species.
#TibetanSandFox #Ladakh #TransHimalaya #Carnivore

Title of the Project

Ecology and Conservation of a Shadow Species: The Tibetan Sand Fox in the Cold Desert Systems of India

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Title of the Project

Bringing back the Cheetah to India

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Finders, Feeders, and Finishers. Vertebrate Scavenger Assembly at Cheetah and Leopard Kills in Kuno National Park, Madhya Pradesh

Guna Sekaran M

Carrion produced by large carnivores is a concentrated resource for vertebrate scavengers, yet processes of discovery, exploitation, recruitment, and depletion remain poorly understood in tropical ecosystems. We investigated vertebrate scavenger assembly by deploying camera traps at kills made by cheetah (*Acinonyx jubatus*) and leopard (*Panthera pardus*) in Kuno National Park, Madhya Pradesh, India. We hypothesized that scavenger assembly would differ across successive stages of carcass use—initial camera-recorded detection, subsequent feeding, and terminal removal—reflecting functional differences among species and guilds. Camera traps monitored 37 kills (31 by cheetahs; 6 by leopards), recording detection, visitation, feeding, species arrival, persistence, habitat, prey identity, diel activity, and terminal removal.

Overall, 21 scavenger species in 6 functional guilds were recorded. Rufous treepie (*Dendrocitta vagabunda*) was the leading first detector (9; 24.3%), followed by striped hyena (*Hyaena hyaena*) (8; 21.6%). Kaplan-Meier analysis indicated rapid depletion of cheetah kills, with estimated persistence probabilities of 0.50 at 12 hrs and 0.28 at 24 hrs, while leopard-kill persistence remained high through 24hrs. Cumulative richness reached 18 scavenger species at cheetah kills, and 15 at leopard kills. Richness was positively associated with carcass persistence (Spearman’s $\rho = 0.56$, $P = 0.0003$), while independent visitation showed a stronger association ($\rho = 0.64$, $P < 0.0001$), indicating greater recruitment and use at longer-lasting carcasses. Richness differed among habitats (Kruskal-Wallis $H = 10.53$, $df = 4$, $P = 0.032$), with open forest differing from woody savannah after Holm correction ($P = 0.013$). Community composition varied among prey/carcass types (Jaccard PERMANOVA: $F = 1.79$, $R^2 = 0.14$, $P = 0.018$). Mammalian scavengers were predominantly nocturnal, whereas avian scavengers were primarily diurnal. Striped hyena was the principal terminal remover, associated with final depletion at 21 cheetah kills. Patterns were consistent with stage-structured assembly. Carcass persistence, habitat, carcass identity, and diel activity jointly structured carrion access, while striped hyenas dominated terminal removal within this recovering multi-carnivore landscape. Our study is a first step in understanding ecological interactions and role of scavengers in multi-predator assemblages that shape the patterns and processes of ecosystem dynamics subsequent to cheetah introduction.

Keywords: Carrion ecology, vertebrate scavengers, carcass persistence, striped hyena

✉ & 📧 Text

Who finds, feeds, and finishes a kill? Vertebrate scavenger assembly Across 31 cheetah and 6 leopard kills in Kuno National Park revealed 21 scavenger species. Rufous treepie often detected carcasses first, striped hyena dominated terminal removal, and longer-lasting carcasses attracted greater richness and visitation.

From the Westernmost Range to a National Initiative: Establishing the Baseline for Project Sloth Bear

Ashish Kumar Jangid, Utkarsh Prajapati, Avinash Yadav, Shikhar Kaushik, Sindhoora Nandakumar, Niranjana KV, Mitali Jadhav, Kavyah K, Upma Manral, Ramesh Chinnasamy

Sloth bears frequently use fragmented landscapes, often interacting with people and resulting in conservation and management challenges. However, systematic information on sloth bear distribution and habitat use outside tiger reserves remains limited. Project Sloth Bear aims to strengthen systematic monitoring and management across 16 sloth bear range states in India.

Jessore Sloth Bear Sanctuary (Banaskantha, Gujarat; area 180-km²), Sundha Mata Conservation Reserve (Jalore, Rajasthan; area 117-km²) and Mount Abu Wildlife Sanctuary (Sirohi, Rajasthan; area 326-km²).

We assessed habitat use by sloth bear using occupancy framework, evaluated habitat and threat status and mapped villages with high potential for human-sloth bear interactions within a 3-km buffer around surveyed protected areas.

Field surveys covered 167 sampling grids, each covering 2-km². Each grid was surveyed along ~2km animal trails (total effort 317-km) with observations recorded at 400-m spatial replicates. Sloth bear signs were recorded alongside habitat characteristics, food resources, livestock activity, anthropogenic pressures and vegetation attributes. Single-season occupancy models accounted for imperfect detection and evaluated relationships between occupancy and habitat, resource, topographic and anthropogenic pressures. We further prioritised villages using a mechanistic framework combining bear occupancy, forest patch, terrain and human population to identify areas with high potential for human-sloth bear interactions.

Sloth bear occupancy varied among these protected areas and was positively associated with habitat quality, food resources, and terrain complexity, and negatively associated with anthropogenic pressures. Village prioritisation identified areas where high bear occupancy overlapped with low human population and flat terrain along forest fringes. These findings highlight the need for site-specific management and managing anthropogenic pressures in areas with high potential of human-sloth bear interactions.

This assessment provides a baseline for testing on-ground mitigation measures under Project Sloth Bear. Continued monitoring and fine-scale connectivity mapping will help refine priority areas and guide landscape-specific conservation and human-sloth bear conflict management.

Keywords: occupancy, high risk area, semiarid, human-bear interaction, management & planning

✖ & 📷 Text

From the Westernmost Range to a National Initiative: Establishing the Baseline for Project Sloth Bear #ProjectSlothBear piloted a field-based approach to understand sloth bear habitat use, status and human-bear interactions to build strategies for conservation and coexistence.

Title of the Project

Conservation and Management of Sloth Bear in India: A Landscape Based Initiative

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Title of the Project

Project Great Indian Bustard

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Evaluating grassland restoration in Thar: a multitaxa perspective

Anshuman Pati, Indranil Paul, Sutirtha Dutta

Grassland ecosystems are threatened by rapid agriculture expansion and excessive livestock grazing but are largely ignored in conservation discourse despite their high biodiversity and diverse ecosystem services. These ecosystems now thrive in pockets, the largest of them being the Thar Desert in Rajasthan. Herein, the Desert National Park (DNP)—a key grassland ecosystem—contains several fenced enclosures where livestock grazing and human activities are restricted to facilitate the recovery of native vegetation and provide critical breeding habitat for the flagship Great Indian Bustard.

We compared the community and population parameters of ground vegetation, arthropods (grasshoppers and spiders), and ungulates (chinkara and nilgai), alongside space use of the Great Indian Bustard inside vs outside enclosures, to understand the effect of this management intervention on multiple taxa.

Within enclosures, ground vegetation cover and species richness were slightly higher than outside, with much greater structural heterogeneity, forming a mosaic of short and tall vegetation dominated by grasses. Contrastingly, vegetation was much shorter with fewer grass species outside enclosures.

Grasshopper density and richness peaked during the resource-rich monsoon and remained higher within enclosures than outside, as did density and richness of spiders, perhaps because of the bottom-up effect of vegetation recovery in fenced grasslands.

Enclosures with greater grass cover and insect populations and lesser disturbances provided the most favorable conditions for GIB during the breeding season, when the usage of tagged females increased sharply within enclosures, contrasted to unfenced grasslands, indicating that protection significantly enhanced utilization by GIB. Similarly, chinkara and nilgai densities were much higher within enclosures than outside.

Collectively, our findings demonstrate that grassland restoration through enclosure-based protection can benefit multiple taxa, offering a practical approach to grassland recovery and multi-taxa conservation in Open Natural Ecosystems.

Keywords: Enclosure, vegetation recovery, grasshopper, ungulates, Great Indian Bustard

✉ & 📧 Text

Enclosures of Desert National Park, Rajasthan, enhance vegetation recovery, boost arthropod community, ungulate abundance and act as a prime breeding ground for the Great Indian Bustard. Enclosure-based protection offers a practical approach to grassland recovery and multi-taxa conservation in Open Natural Ecosystems.

From mapping corridors to quantifying conservation priorities in the Terai Arc Landscape

Manisha Bishnoi

Introduction: Quantification is increasingly important in conservation planning because identifying potential movement corridors alone does not indicate where conservation action should be directed. In rapidly changing landscapes, such as biodiversity rich transboundary Terai Arc Landscape (TAL), where continued human population growth and expansion of linear infrastructure (LI), particularly roads and railways, increasingly threaten connectivity corridors for large mammals. Therefore, in this study, we integrated potential movement corridors for tiger and rhinoceros and quantified their attributes to rank them based on their conservation importance, and subsequently identified the road segments intersecting these corridors to prioritise them for mitigation measures.

Methods: To rank the corridors, we used a multi-criteria scoring framework, assigning high (3), medium (2), and low (1) scores based on connectivity, infrastructure pressure and expansion, forest-loss patterns, and the conservation importance of large mammals in the TAL. We then identified major roads (trunk, primary, and secondary) intersecting the priority corridors. For each road segment, we calculated total and recent forest loss within a 2-km buffer and assigned higher scores to segments with lower forest loss. The final road priority score combined the corridor score with the forest-loss scores around each road segment.

Results: Based on the corridor prioritisation exercise, 04 corridors scored highest, 06 in medium and 06 in low range. We identified 32 road segments, with a combined length of approximately 200 km intersecting the corridors. These road segments comprise 44% secondary, 29% trunk, and 27% primary roads. The total length of roads intersecting protected areas was approximately 230 km, which is greater than the length of roads intersecting the identified corridors. These roads include national and state highways, as well as major district roads, and therefore require high priority for mitigation.

Conclusion: Our results showed priority mitigation sites, evaluated using ecologically relevant criteria, to maintain wildlife connectivity across the TAL. Proactive integration of these findings into LI planning is vital to prevent further habitat fragmentation and to ensure the coexistence of development and conservation goals.

Keywords: Quantification, Mitigation prioritisation, Connectivity conservation, Linear infrastructure, Terai Arc Landscape

✖ & @ Text

Study showed priority mitigation sites, across Indo-Nepal Terai Arc Landscape for its long-term conservation. Proactive integration of these findings into Linear infrastructure planning is vital to prevent further habitat fragmentation and to ensure the coexistence of development and conservation goals.

Title of the Project

Conserving Vital Connections Across Expanding Linear Infrastructure in a Transboundary Terai Arc Landscape

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Title of the Project

Integrated study of the effects of construction of twin tunnel on Wildlife of Sanjay Gandhi National Park, Mumbai, Maharashtra

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Underground Echoes: Evaluating the Effect of Tunnel-Related Seismic Vibrations on Anuran Calling Behavior

Niket Alashi, Kumar Ankit, Bilal Habib

Introduction:Anthropogenic disturbance is a major threat to wildlife, with substrate-borne vibrations increasingly disrupting animal behavior.While interspecific variations in responses make broad risk assessments difficult, anurans serve as excellent models for the study due to their heavy reliance on seismic and acoustic channels for reproduction and survival.

Study area:The study was conducted in Sanjay Gandhi National Park, Mumbai, a critical urban protected area within a dense metropolitan landscape.The park is currently the site of a subterranean twin-tunnel project, creating a setting of acoustic disturbance due to underground construction on local fauna.

Methodology:We investigated the acoustic responses of cricket frogs (*Minervarya* sp.) and associated fossorial anurans exposed to subterranean infrastructure-related seismic profiles. Environmentally calibrated low-frequency signals, recorded above Tunnel Boring Machines (TBM) and subterranean tunnel traffic (TTF), and their peak-frequency pure tones were introduced into the environment using a substrate-coupled tactile transducer.The design featured alternating two-minute blocks of active stimulus and silence, bounded by pre- and post-experiment silence baselines.Using concurrent acoustic and vibration monitoring, we applied Generalized linear mixed modelling (GLMM) to measure shifts in vocal parameters during the disturbance and assess recovery of vocalization during post-stimulus periods.

Results:Preliminary analyses revealed a modest reduction (~9%) in calling activity during the seismic disturbance. Notably, *Minervarya* sp. exhibited significant upward shifts in dominant frequency, while temporal parameters such as note length and pulse length were minimally affected.These findings demonstrate that even high-frequency calling species actively adjust their spectral properties to compensate for low-frequency acoustic masking.

Conclusion:Since anuran advertisement calls are central to female phonotaxis and mate selection, acoustic and seismic interference can directly impair signal localization and compromise mating success.While spectral displacement allows species with high-frequency calls to bypass complete masking, understanding its impacts on communication efficiency and species with lower-frequency calls remains critical. Ultimately, establishing these acoustic thresholds will provide vital baseline metrics for ecoacoustic monitoring, directly guiding engineering and conservation strategies at critical urban-wildlife interfaces.

Keywords: Amphibian conservation, biotremology, bioacoustics, ecoacoustics, linear infrastructure

✉ & 📧 Text

What happens when heavy underground construction meets frog communication? The interesting ecoacoustic study reveals how cricket frogs dodge low-frequency noise from subterranean machinery by shifting their call pitch to avoid being drowned out by the surface vibrations.

A Comparative Assessment of mammalian road-side habitat use near Mitigated and Unmitigated Segments in Vidarbha, Maharashtra

Mohd Belal

As a rapidly developing nation, India’s expanding linear infrastructure and extensive road network increasingly intersect with its rich biodiversity and conservation commitments. Road expansion accelerates habitat loss, fragmentation, and reduced wildlife connectivity. Wildlife crossing structures (WCS) are increasingly adopted for mitigation. We evaluated overall relative WCS performance with road-side habitat. We assessed mammalian species composition, replacement and activities across the mitigated and unmitigated road.

Our mitigated sites comprised two WCS and their surrounding habitats along the Vidarbha segment of the Samruddhi Expressway. Interspersed dry-deciduous forests and agro-pastoral lands form a potential wildlife corridor within 5 km of the Bor Tiger Reserve. Unmitigated sites comprised a 9-km road segment along SH-165, traversing dry-deciduous forest patches that function as a wildlife corridor connecting the Butibori and Umred regions.

The study was conducted from March to August 2026. We used systematic camera trapping, deploying 47 cameras across 1 × 1 km² grids along both roads, with two cameras at each WCS to assess structure use. Relative WCS performance was assessed by comparing pooled WCS RAI with detection adjusted RAI from respective habitat grids. We ran single-species occupancy null models to estimate detection probability for observed RAI corrections across the road-side habitat.

We recorded 19 mammal species across the two road sections over 1626 trap nights. Underpass performance varied among species with highest performance for nilgai followed by wild pig and spotted deer. Performance was 14.76, 13.61, and 6.96 times higher than expected from surrounding habitat. We captured 15 mammals at mitigated and 18 at unmitigated road-side habitat. We captured Indian gazelle unique to mitigated, whereas tiger, sloth bear, dhole and blackbuck were unique to unmitigated road-side habitat. Activity patterns differed between mitigated and unmitigated roads: Spotted deer and wild pig showed high activity during night-time, nilgai activity peaked in midnight and evening. Leopard activity showed peak activity in evening hours.

WCS effectiveness is influenced by surrounding habitat conditions, emphasizing the importance of maintaining suitable habitat quality around WCS, to facilitate wildlife movement according to species-specific ecological needs.

Keywords: Road Ecology, Linear infrastructure, Wildlife Crossing structures, Habitat connectivity, Wildlife corridors

✖ & © Text

The road divided our path, crossing structures showed us the way—and we followed.

Title of the Project

Monitoring of Wildlife Overpasses and Underpasses on Samruddhi Expressway

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Title of the Project

Monitoring of Wildlife Underpasses on Dehradun-Delhi Highway (NH 72A)

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Spatio-temporal patterns of wildlife crossing use along the Delhi-Dehradun highway

Maitreyee Bhawe, Durga Dutt Sharma, Siddhesh Khandve, Bivash Pandav, Bilal Habib

As India’s highway network expands through intact forest corridors, understanding how transport infrastructure can maintain wildlife connectivity is important. Wildlife crossing structures are increasingly being incorporated into highways that pass through ecologically sensitive landscapes; however, their effectiveness depends on how wildlife utilizes them. The Delhi-Dehradun Highway (NH-307A) cuts through the Shivalik forests of the Terai Arc Landscape bordering Rajaji Tiger Reserve. To maintain connectivity, a 10.978 km elevated viaduct was constructed within a 20 km highway stretch, creating one of the world’s longest wildlife crossing structures. We evaluate its effectiveness in facilitating wildlife movement while accommodating highway traffic.

Wildlife use of underpass locations along the Delhi- Dehradun Highway (NH-307A) will be assessed using the camera-trap data collected during April-June 2025 and 2026. Species-specific crossing events will be quantified using Relative Abundance Indices (RAI) standardized by camera-trap effort. Spatial variation in RAI across camera locations will be used to identify crossing hotspots and assess whether species consistently used the same locations between years or exhibited shifts in crossing patterns. Heat maps will be developed to visualize species-specific variations and temporal patterns in underpass use.

Generalized linear mixed models (GLMMs) will be used to identify factors influencing animal crossing events, including year, camera-trap location, site-level habitat characteristics, temporal activity patterns, and resource availability. Traffic-volume data for April-June 2026 will be integrated with corresponding camera-trap observations to examine whether variation in vehicular movement influences wildlife crossing frequency and timing. Depending on the temporal resolution of traffic records, traffic intensity will be matched with daily or finer-scale wildlife crossing events to be used as a predictor.

This comparative framework moves beyond documenting wildlife presence to evaluate the spatial consistency, temporal dynamics and potential drivers of underpass use. The study provides evidence for identifying functional crossing zones and understanding how wildlife responds to both site characteristics and highway disturbance, informing adaptive management of wildlife-sensitive transport infrastructure.

Keywords: Linear infrastructure, camera traps, wildlife corridors, wildlife crossing, mitigation measures

✉ & 📧 Text

How do wild animals use one of the world’s longest wildlife crossing structures? Our study examines crossing patterns along the Delhi-Dehradun Highway using camera traps, habitat variables and traffic data. #WildlifeConnectivity #RoadEcology

An insight into the biodiversity around the proposed road in Kaimoor Wildlife Sanctuary, Uttar Pradesh

Kamran Husain, Shubham Singh, Roshan Yadav, Saiyyed Aliyan Ali, Vamika Sharma, Gopi G. V. , Tapas Mihir, Tanveer Ahmed

Roads are linear infrastructure that fragment wildlife habitat, impede wildlife movement, alter animal behavior, and contribute to declines in vulnerable species. These impacts are particularly severe when these roads intersect with critical wildlife habitats, resulting in frequent and often fatal interactions between animals and vehicles. Seven roads ranging from 0.900 km to 12.00 km have been proposed passing through Kaimoor Wildlife Sanctuary, Uttar Pradesh, exposing the wildlife to the negative impact of roads. The present study was conducted to assess the ecological impacts of the proposed road on the wildlife and their habitat in Kaimoor Wildlife Sanctuary. We assessed the status of vegetation, birds, mammals, and herpetofauna around the proposed road by individual linear transects (total 101 km) between April and August 2026. A total of 91 plants, representing 43 trees, 14 shrubs, 27 Herb and 7 grasses, were recorded during the survey. A total of 186 bird species belonging to 63 families, including one endangered, one vulnerable, and six near threatened species, and 19 mammal species belonging to 12 families, including 2 vulnerable and 2 near threatened species. In addition, 15 species of herpetofauna were recorded, belonging to 10 families, including one vulnerable species. Records of mammalian species, especially of jackal, wild boar, chital, sambar, and nilgai, were observed within the vicinity of the proposed roads, indicating the proposed roads pass through habitat used by these species. Habitat suitability and the least cost pathway will be developed in the project to determine movement pathways and mitigation measures.

Keywords: Linear infrastructure, habitat connectivity, animal passage structures, road ecology

✕ & 📷 Text

Mr. Kamran Hussain highlighted the vegetation community structure along with the status and spatial distribution of birds, mammals, and herpetofauna with respect to proposed roads in Kaimoor Wildlife Sanctuary, Uttar Pradesh.

Title of the Project

Biodiversity impact Assessment and Animal passage planning for new construct of roads in Kaimoor wildlife Sanctuary, Mirzapur, Uttar Pradesh

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Title of the Project

Impact assessment of extended reach drilling (ERD) horizontal direction drilling (HDD) technology with surface facilities on wildlife and above-ground biodiversity of the forest, outside the forest boundaries

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A Baseline Assessment of Biodiversity, Soundscapes, and Anthropogenic Pressures around an Extended Reach Drilling Site in Assam

Shaikh Obair Aqueel Ahmed, Oliva Sarkar, Kapil Kumar, Bilal Habib

India’s energy demand is rising, yet its hydrocarbon reserves are difficult to extract. Hydrocarbon exploration degrades habitats and adds pollution and human pressure, altering wildlife activity. To reduce surface disturbance, the Government of India has proposed Extended Reach Drilling (ERD). The proposed ERD site lies in a tea plantation, about 2.5 km from Dibru-Saikhowa NP and 1.5 km from Maguri-Motapung Beel, an Important Bird Area in Tinsukia, Assam.

We assessed mammal distribution, richness, and encounter rate near the ERD site, alongside anthropogenic pressure and soundscape. We surveyed a 5 km buffer around the site in summer and winter, using 62 camera traps and 9 Audiomoth recorders. We divided the buffer into five 1 km segments radiating from the drilling point. Audiomoths were deployed across three habitats (tea plantation, urban, and mixed), at 400 m, 800 m, and 1200 m from the site, capturing four 1-hour sessions (morning, afternoon, evening, and night) over 10 days.

Species richness and encounter rate varied with distance from the drilling point. Species richness peaked at segment 2 in summer (8) and at segment 4 in winter (10). Encounter rate peaked at segment 3 in summer (3.76) and segment 5 in winter (0.812), while segment 1 recorded the lowest rate in both seasons. Acoustic Complexity Index (ACI) decreases with distance from the site in tea plantations and mixed habitats. Acoustic entropy increased with distance across all three habitats, showing richer acoustic communities farther from the site. Acoustic Evenness Index declined with distance in tea plantations but showed no clear pattern in mixed or urban areas. Bioacoustic Index varied mainly by habitat, not distance, staying lowest in tea plantations. The Normalised Difference Soundscape Index (NDSI) was lowest in urban habitat and at sites nearest the drilling point across all habitats, rising with distance from the site.

Mammal richness, encounter rates, acoustic entropy, and NDSI declined near the ERD site, indicating reduced wildlife activity. The opposite ACI trend likely reflects increased anthropogenic noise rather than biotic. Together, the results show anthropogenic pressure, demonstrating the value of combining camera traps and acoustic monitoring, providing a baseline for biodiversity assessment.

Keywords: Dibru-Saikhowa, Hydrocarbon, Bioacoustics, Tea-plantation, NDSI

✉ & 📧 Text

Assessing wildlife responses to Extended Reach Drilling (ERD/HDD) through integrated camera-trap and passive acoustic monitoring near Dibru-Saikhowa NP, Assam. Findings provide a baseline for biodiversity assessment and evidence-based mitigation. #ERD #BiodiversityConservation #Bioacoustic

Habitat drives vertebrate road mortality in the Satpura-Melghat Corridor, Madhya Pradesh: Implications for mitigation beyond arterial highways

Prajwal Ray, Rohit R. S. Jha, G. V. Gopi

Vehicular mortality is a pervasive threat to wildlife, yet mitigation policies in India disproportionately prioritise large mammals along major arterial highways. Consequently, the impacts of secondary road networks on diverse vertebrate communities within human-dominated landscapes remain understudied. We investigated vertebrate road mortality during systematic herpetofauna-specific sampling occasions within the proposed Morand-Ganjal Irrigation Project's Impact Zone in Madhya Pradesh's Narmadapuram, Harda, and Betul districts, between April 2025 and April 2026 (excluding October-December), to identify spatial patterns and inform localised mitigation. These districts form roughly the central portion of the Satpura-Melghat ecological corridor.

Over 40 nights (129.9 survey hours, ~3,365 km, 09:18 pm to 03:30 am), we carried out systematic road-cruise surveys across three road classes (National Highway, District Road, and Gram Sadak) in the study area. We also included opportunistic, day-time roadkill observations to inform the species inventory. From the systematic surveys, we analysed roadkill counts using a negative binomial generalised linear model (NB-GLM), incorporating adjacent habitat and road type as explanatory variables with survey distance (logarithmic) as an offset. Including opportunistic observations, we recorded 89 road-killed individuals comprising 33 vertebrates across reptiles (42.4%), amphibians (21.2%), birds (12.1%) and mammals (24.4%). Herpetofauna accounted for over 60% of total roadkill records, with the Checkered Keelback (*Fowlea piscator*) being the most frequently impacted species (26% of total mortality). Habitat type emerged as the principal correlate of roadkill rates. After accounting for road type, forested stretches exhibited significantly higher mortality—an estimated 2.9 times higher than agricultural areas ($\beta=1.071$, $p<0.05$). Conversely, road category did not significantly influence roadkill frequencies.

Our findings highlight that adjacent habitat, particularly forest cover, is a much stronger predictor of vertebrate road mortality than road types in this landscape. To effectively reduce vehicular impacts on diverse taxa, including highly vulnerable herpetofauna, mitigation policies must expand beyond major highways. Interventions such as speed-reduction measures and targeted eco-culverts must be strategically prioritised along forested segments of secondary and district roads. Our larger project-related objectives necessitated travelling over same road stretches, sometimes over consecutive nights. Hence, our road-mortality dataset is geographically-biased, requiring cautious interpretations of the quantitative results.

Keywords: *Wildlife-vehicle collisions, linear infrastructure, road ecology, Central Indian Highlands, landscape permeability*

✉ Text

Study found forest-adjacent roads in Satpura-Melghat corridor landscape witness 3x more roadkill than those of agricultural lands, independent of road classification. Findings suggest mitigation policy should extend beyond arterial highways. #RoadEcology #WildlifeConservation

📄 Text

Time to expand mitigation beyond big highways! The roadkill survey in Satpura-Melghat corridor found forest roads have nearly 3x more wildlife deaths than those of agricultural lands—regardless of road type. #RoadEcology #WildlifeConservation

Title of the Project

Study the Impacts of Morand-Ganjal Irrigation Project on Wildlife and Preparation of Wildlife Mitigation Plan

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Title of the Project

Assessment of Human-Wildlife interaction with a specific focus on actions for mitigating Human-Elephant Conflict in Wokha and Mokokchung Districts, Nagaland

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Asian Elephants Beyond Protected Areas: Status and Conservation in Community-Managed Landscapes of Nagaland, India

Arif Ahmad

The conservation of Asian elephants (*Elephas maximus*) increasingly depends on landscapes beyond formally protected areas, particularly where forests, agriculture, shifting cultivation and settlements form an interconnected mosaic. Nagaland represents an important part of the elephant range in northeastern India, where community-managed forests support elephants across multi-use landscapes. We assessed elephant status, distribution, habitat use, movement patterns and conservation priorities in Wokha and Mokokchung districts using household surveys (August 2024 to May 2025), conflict records, camera-trap monitoring (September 2025 to April 2026), GIS-based spatial analysis, habitat suitability modelling and connectivity assessment. A total of 1,960 households across 216 villages were surveyed, and 100 camera traps were deployed along forest edges, movement routes and agricultural interfaces. Elephant presence was recorded in 97 villages in Wokha and 33 villages in Mokokchung. Camera-trap monitoring identified a minimum of 184 individual elephants, including adults, sub-adults, juveniles and calves, indicating the presence of breeding populations within the monitored landscape. Habitat suitability modelling indicated greater suitability in connected forest patches and areas with reliable water availability, whereas steep and undulating terrain comparatively lower suitability. Connectivity analysis identified recurrent movement pathways linking forest patches and facilitating movement between Nagaland and adjoining Assam landscapes. Crop depredation was the dominant form of human-elephant interaction, with paddy, maize etc. among the most frequently affected crops. Conflict was spatially heterogeneous, with higher and more clustered intensity in Wokha and localized recurrent hotspots in Mokokchung, particularly around forest-agriculture interfaces and movement routes. These findings highlight that elephant conservation in Nagaland cannot rely solely on protected areas. Community-managed forests, corridors and agricultural mosaics are integral to maintaining ecological connectivity and elephant populations. Conserving movement pathways, protecting suitable habitats near water sources, minimizing fragmentation and strengthening community-based monitoring will be essential for sustaining elephants while reducing conflict and supporting local livelihoods.

Keywords: Camera trapping, Connectivity, Crop depredation, habitat suitability, Human-wildlife coexistence

✖ & 📷 Text

NA

India's efforts toward Elephant Conservation through Management Effectiveness Evaluation (MEE) Approach

Anoop Raj Singh

India has come a long way in its journey of elephant conservation, from protecting the species to a landscape-based vision that recognises the huge habitat requirements of elephants, along with the need for sustainable human-elephant coexistence. Elephant Reserves (ERs) originated out of this vision, but whether they are actually performing the way they are meant to, is something that needs careful evaluation. Erstwhile, Management Effectiveness Evaluation (MEE) exercises carried out in Tiger Reserves, Protected Areas, and zoos across the country have already shown what periodic, evidence-based evaluation can do- bridge management gaps, support adaptive management, and offer managers a practical roadmap. Drawing on these lessons, an MEE framework was developed specifically for Elephant Reserves, after piloting in four ERs representing different elephant-bearing regions of the country. With the adapted framework, the Ministry of Environment, Forest and Climate Change (MoEFCC) entrusted Wildlife Institute of India to conduct nationwide MEE-ER exercise across all 33 ERs in 14 states. Eight teams of four members each have been constituted including senior forest officials, experienced scientists, subject experts, and WII faculty members for conducting the MEE-ER exercise. The project commenced in January 2026. Since then, eight (~25%) of 33 ERs have been assessed and the evaluation is expected to be completed by July 2027. This first Pan-India MEE-ER cycle is expected to answer critical questions about how ERs are functioning on the ground, whether resources on the ground are adequate, how human-elephant conflict is being managed, corridor status, community engagement, and conservation outcomes, more broadly. This exercise will not only score the ERs, but is also expected to point out what is working well and generate recommendations specific to each reserve that can feed directly into planning, decision-making, and resource allocation. Furthermore, this exercise is meant to build a culture of periodic review, of adaptive management, of evidence-based conservation, so that elephant landscapes across India become more resilient with each future cycle of evaluation.

Keywords: Adaptive management, Elephant Conservation, Elephant Reserves, Evidence-based conservation, Pan-India Assessment

✖ & 📷 Text

Are India's Elephant Reserves managed effectively to secure the future of our National Heritage Animal? WII, under Project Elephant, MoEFCC, initiated the first nationwide MEE-ER exercise to strengthen the conservation and management of Elephant Reserves in India. #ElephantReserves #MEE-ER #OneNationOneAssessment

Title of the Project

Conducting Management Effectiveness Evaluation (MEE) of Elephant Reserves in India

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Functional ecology of vertebrate scavengers in the Western part of Aravalli landscape in Haryana

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Perceptions of Agropastoral Communities on Ecosystem Services Provided by Scavengers in the Aravalli Landscape

Hitesh Kumar, Sumit Dookia, Anthony J. Giordano, Tharmalingam Ramesh, Riddhika Kalle

The community of scavenging vertebrates delivers diverse ecosystem services, including nutrient recycling, environment cleaning, and reducing disease transmission via consuming the rotting carcass. For biodiversity conservation, the acknowledgement of positive services and evaluation of various dimensions of the socio-economic perspective, including beliefs, values, perceptions, and attitudes highlight its significance for sustainable conservation programs. However, the socio-economic aspect underlying people's perceptions of the functional diversity of scavenging vertebrates remain highly overlooked. We comprehensively evaluated the people's perceptions of ecosystem services and disservices delivered by obligatory and facultative scavengers across Charkhi Dadri, Mahendergarh, and Rewari districts of Haryana. We studied various demographic attributes to assess the ecosystem services provided by vertebrate scavengers and their influence on people's perceptions. We interviewed 293 respondents aged >18 years, representing 15% of the agropastoral communities in each village located in proximity to livestock carcass dumping site, using the local Haryanvi language. To avoid the misidentification of species, we produced a pictorial chart to every respondent during survey. Using cramerV function, we assessed multicollinearity prior to model fitting; due to high association between education & caste (0.59), caste was removed, retaining seven explanatory variables. Species-specific GLMMs revealed variation in perceived ecosystem services across vertebrate taxa. For vultures, respondents reported a significant positive association with scavenging service ($\beta \sim 1.8$); for all other species, association with the positive-services types were either non-significant or significantly negative ($\beta < 0$). For disservices, free-ranging dogs showed the relatively strongest positive association with disease transmission, annoyance, and livestock predation ($\beta = 2.3, 2.9, \text{ and } 2.4$, respectively), indicating dogs were most strongly perceived as a source of these disservices. Overall, perceptions varied largely among species and were shaped by both species-specific associations and demographic attributes. This study underscores the significance of integrating socio-economic dimensions into sustainable conservation programmes of scavenging vertebrates.

Keywords: Socio-economic dimensions, Services and disservices, Scavenging vertebrates, Human perceptions, GLMM, Haryana

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