

ZOO'S PRINT

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Conservation Proficiency Course: An initiative to build future conservation leaders

Zooreach began the first batch of the Conservation Proficiency Course (CPC) 2026–27 on 29 August 2026, welcoming 10 Fellows from eight states across India. The inaugural session on 30 August brought together Zooreach family, Fellows, mentors, alumni, and well-wishers, both in person and online, to mark the beginning of a 10-month journey to build future conservation leaders. The 2026–27 cohort brings Fellows from different backgrounds, from psychology, art, commerce, science, medicine, and animal welfare.

The CPC is part of the Sally Walker Centre for Conservation, Climate and Community (SWC3C), a larger program by Zooreach built on the vision of its founder, Sally Walker, seeks to provide knowledge, skills, education, and opportunities tailored to students, professionals, and



conservation enthusiasts to build practical skills creating real-world impact.

The CPC, brainchild of Dr Sanjay Molur, is a 10 month residential course to build ecology supported conservation knowledge in leaders of tomorrow. A network of more than 75 mentors and resource persons from across India supports the Fellows through





Journal of Threatened Taxa team conducting Research and Publication Ethics Workshop.



Dr Sanjay Molur giving Fellows the history behind Nilgiri Biosphere Nature Park.



Dr Sanjay Molur conducting conservation biology session for Fellows.



Fellows interacting with RHATC alumnus, Maitreyi Hegde.

theoretical learning, hands-on workshops, field exposure, and professional mentoring. The programme combines foundational and advanced conservation biology with practical skill development and culminates in a six-month paid internship, allowing Fellows to gain first-hand experience of working in the conservation sector.

The first two days psychologists Priya Vijay and Bhavna Vijay from The Halcyon Experience conducted sessions on the Welfare of Wildlife, encouraging Fellows to reflect on the emotional and psychological dimensions of conservation and climate crisis. This was followed by an intensive introduction to conservation science led by Dr Sanjay Molur, covering topics like fundamentals

of conservation biology, human evolution, science and facts, ecosystem conservation, basic physics, and the origins of life. Classes were a mix of lectures with assignments, debates, and group discussions, encouraging Fellows to question, analyse, and think beyond what's taught. Payal Molur explored different approaches to conservation education, while RHATC alumnus Maitreyi Hegde introduced them to avifaunal conservation. S.R. Ganesh covered herpetofaunal ecology, taxonomy, and conservation, and Dr L.A.K. Singh introduced conservation breeding, gharial conservation, and melanism in wild cats. During this time, the Fellows also attended the first Hands on Training workshop on Research and Publication Ethics conducted by the Journal of Threatened Taxa team.

Zooreach Activity Update

The Fellows also visited Nilgiri Biosphere Nature Park in Anaikatti, Western Ghats, a Zooreach restoration initiative with nearly three decades of efforts and success. The field visit provided an opportunity to understand restoration beyond planting trees, including ecological processes, challenges, and its impact on wildlife interactions.

CPC 2026-27 visions to give opportunity to the Fellows to explore what it means to build a career and contribute meaningfully to conservation and climate crisis mitigation.

Mansukhani
family

Coromandel
FUTURE POSITIVE

murugappa

Sally Walker
Conservation Fund

Sanjay Manohar
family & friends

Trisa Bhattacharjee

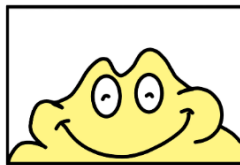
Conservation Proficiency Course, Zoo Outreach Organisation, Coimbatore, Tamil Nadu, India. trisa@zooreach.org

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ENABLING CONSERVATION LEADERSHIP IN AN IMPERILED WORLD



When you first
come to CPC



Getting to know
the people here



Unlearning starts



Unlearning
setting in



Reaching the 'oh
yeah!' stage



More unlearning



Unlearning max



Now you are a pro



Native, Non-
native phase



'Let's apply
this' stage



Loopholes in the
system??!!!



Hands-on
training



Field trips



Things settling



Now you know



CPC Graduation

My First Plantation Season: Learning Ecological Restoration Through Experience

Beginning My First Plantation Season

This was my first plantation season while working as an intern in ecological restoration. I had a theoretical understanding of ecological restoration, but I had never experienced it firsthand. This year, in Chamba, while working with the Himalayan Restoration Project, I got the opportunity to experience plantation work and understand the different aspects of ecological restoration.

The monsoon season is considered the best time for planting. Before joining the plantation work, I had no idea how the entire process would happen, and I was eagerly waiting to experience it. We started digging pits in May so that we could complete the work before

the monsoon season. This year, our project aimed to plant around 10,000 saplings across 10 hectares of land in Chamba. Most of the restoration sites were private farms, along with a few forest lands. The number and arrangement of pits varied according to the size and conditions of each farm, and the saplings were planted accordingly.

Understanding What Plantation Really Involves

Coming from the plains, my idea of plantation was very different. I had mostly seen plantation drives where people plant saplings one after another, often as a one-day activity. What I experienced in Chamba was completely different from what I had imagined.



This is what the Lesser Himalaya look like-beautiful, unpredictable, and never quite as simple as it seems.
© Shreya Yadav.



Loading the saplings with nursery staff for transportation to restoration site. © Adarsh Jagadeeshwaran.

all of this was done did the actual planting begin.

This made me realise that plantation is not simply about putting a sapling into the ground. There is planning, species selection, transportation, site assessment, distribution, planting and finally protection of the saplings.

The process started much before we reached the field. We prepared species-wise sapling lists according to the elevation and conditions of each particular farm. Every morning, we started by loading and counting the required saplings before transporting them to the site.

Planting My First Sapling

The first sapling I planted was in a deodar forest fragment in Jhalein village. The site was covered with *Cedrus deodara* trees and was neither very steep nor particularly difficult to access. Plantation there was relatively easy and enjoyable.

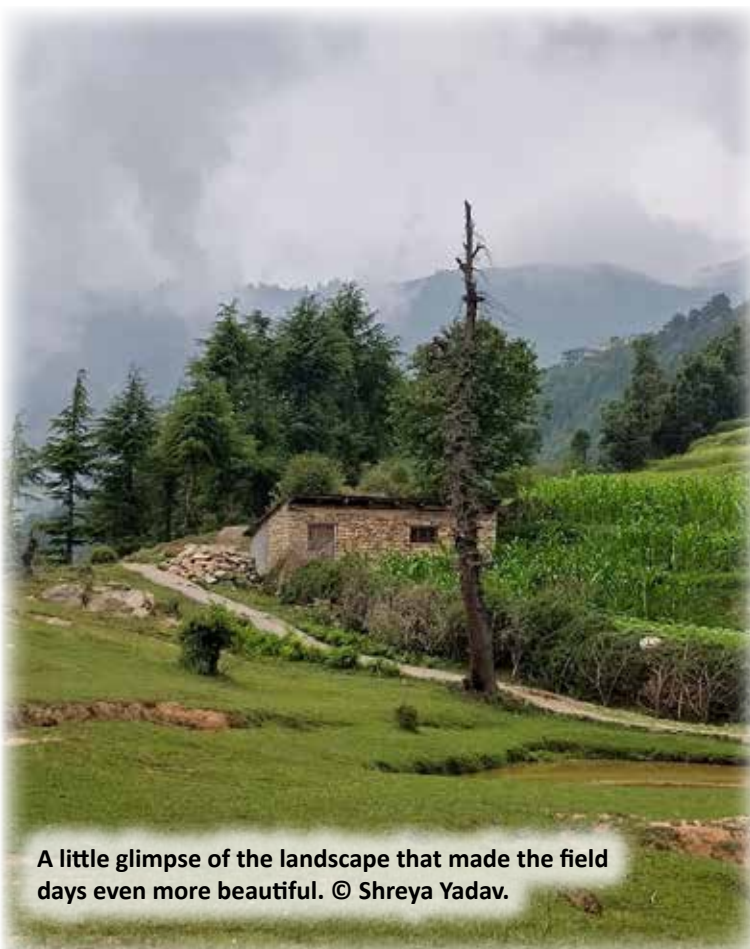
Once we reached the plantation site, we had to unload and distribute the saplings among the pits. Even this required planning. We had to make sure that the same species were not planted together and that species requiring shade like *Populus ciliata*, were placed in suitable, shaded locations to improve their chances of survival. Only after



Unloading the saplings near our restoration site, which will be further carried in buckets to the site. © Sachin Verma.



Plantation in Cedrus deodar forest fragment in Jhalein Village. © Adarsh Jagadeeshwaran.



A little glimpse of the landscape that made the field days even more beautiful. © Shreya Yadav.

The weather was also in our favour that day. The sky was covered with clouds, and there was a green patch with a small puddle near the restoration site. I planted my first sapling with a lot of love and hope for its future. I could feel the soil on my hands, and at that exact moment, I felt completely connected to the work. There was a sense of pure affection and satisfaction that I had not expected. It was a small act, just planting one sapling, but for me, it marked the beginning of experiencing ecological restoration beyond textbooks and theory.

In the middle of the plantation, it started raining. There was no proper place to protect ourselves from the rain, so we took shelter under a tree for some time. Later, I continued planting wearing my raincoat. I actually enjoyed planting in the rain, and the smell of wet soil made the experience even more special.

From Saplings to Tree Guards

Planting the saplings was only one part of the work. After plantation, we also had to install tree guards to protect the young plants.

I helped by flattening the tree guards and handing them over to the workers for installation. The entire process, from loading and counting the saplings in the morning,

transporting them to the site, distributing them, planting them and finally installing tree guards gave me a completely different understanding of what plantation work involves.

At the end of the day, we had to check the site, make sure everything was in place and then wrap up the work. After spending the entire day working physically, being tired at the end actually felt satisfying. I realised that there is a different kind of satisfaction in knowing that your tiredness came from something you genuinely contributed to.

The Challenges of Plantation in the Himalayas

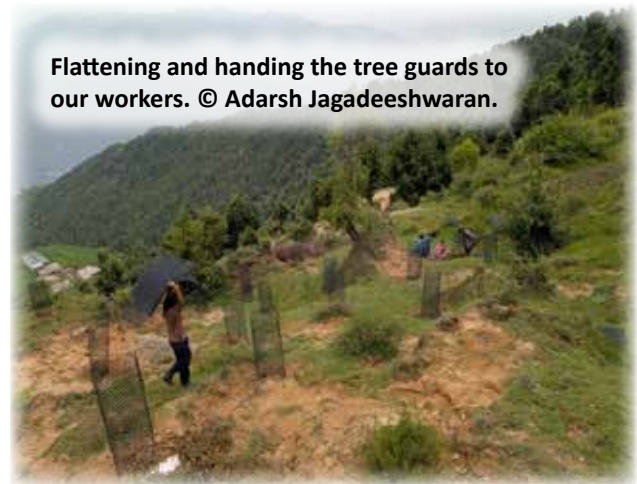
As much as plantation is fun, it is always full of problems, unexpected challenges, and lessons that you don't really understand until you experience them yourself. Personally, the challenges I faced while working in the Himalayas were quite an eye-opening experience.

Sometimes, reaching a plantation site itself involved a long trek. Some sites were steep, and after rain, the paths became slippery, making walking and climbing much more difficult.

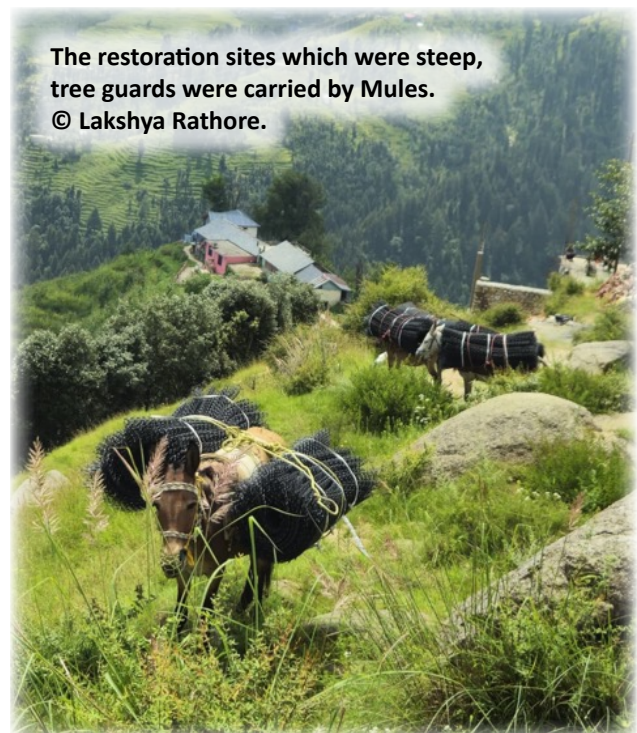
The physical demands of the work were very different from what I had thought before. There was one site in Bhuii village that was completely covered with tall grasses. Simply walking through the grass was challenging, and finding the pits and planting the saplings made the work even more difficult. It was also challenging for the workers to dig the pits and install tree guards because the grasses had tightly bound the soil.



Unloading the tree guards for installing in our restoration site. © Payal Chaman.

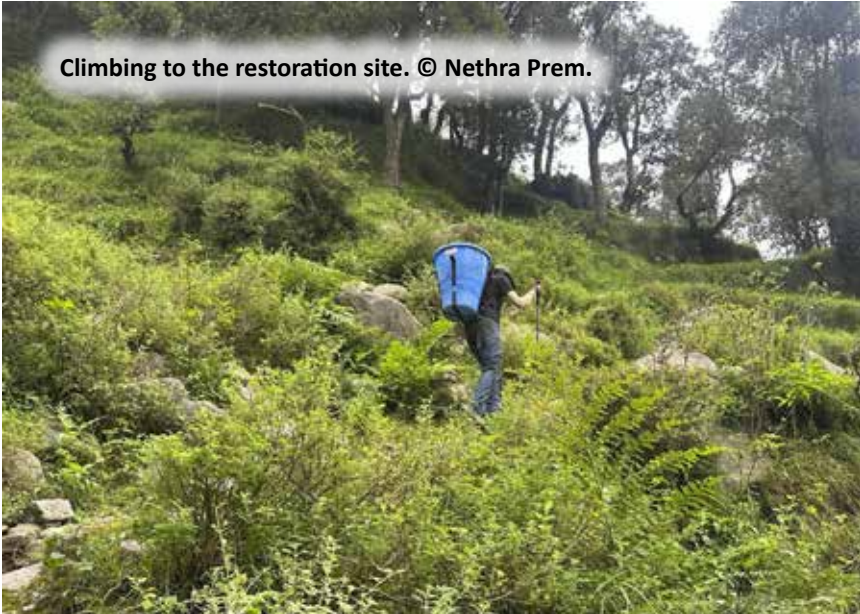


Flattening and handing the tree guards to our workers. © Adarsh Jagadeeshwaran.



The restoration sites which were steep, tree guards were carried by Mules. © Lakshya Rathore.

Climbing to the restoration site. © Nethra Prem.



During the plantation of the deodar forest fragment, I met a group of women from Jhalein and Langa villages who were working with us.

Initially, I interacted with them only a little. Later, during the plantation work in Jhalein and Langa, I had the opportunity to have longer conversations with them. Their warmth and nature

During the plantation days, these challenges sometimes felt overwhelming. But later, I realised how much I had learned from them. They gradually helped me develop the strength, confidence and capability to work in the Himalayan landscape. I began to understand that fieldwork is not always about having ideal conditions; it is about adapting to whatever conditions the landscape presents.

fascinated me so much that I found myself becoming fully engaged while working with them. Talking to these women while working made the long and physically demanding days much more enjoyable. I even had lunch with them, and they served me with so much love and care that the experience stayed with me. One thing I realised was that when you meet good people, they can make even difficult work

The People Who Made the Work Special

Working in a village where you do not know anyone can sometimes feel strange. You go to work, see many unfamiliar faces, exchange a smile with some people and then return to the field station. Does it feel weird? I don't know about everyone, but to me, it did.

When unexpected rain brought a chill to the mountains, we found warmth and hospitality in a worker's home.
© Nethra Prem.



After work fun with Jhalein and Langa village group ladies. © Payal Chaman.



feel easier and more enjoyable. The villages of Jhalein and Langa were far and steep, but because of these women, I felt encouraged to return to the same villages continuously for three days without feeling as tired as I otherwise might have.

Even now, whenever we see each other, we greet each other happily, and they invite us for tea or lunch. Something that initially felt like an unfamiliar

village and unfamiliar faces has now become a place where I know there are people I can happily meet and greet.

What My First Plantation Season Taught Me

My first plantation season taught me that ecological restoration is much more than planting trees. It involves understanding the landscape, selecting suitable species, planning the work, working with local communities, protecting the saplings and continuously adapting to challenges in the field.

More importantly, it taught me through experience what I could never have fully understood through theory alone. I learned how physically demanding restoration work can be, how unpredictable field conditions can be, and how important people and relationships are in making conservation work possible.



With nursery team after loading the sapling in rain. © Anuradha.

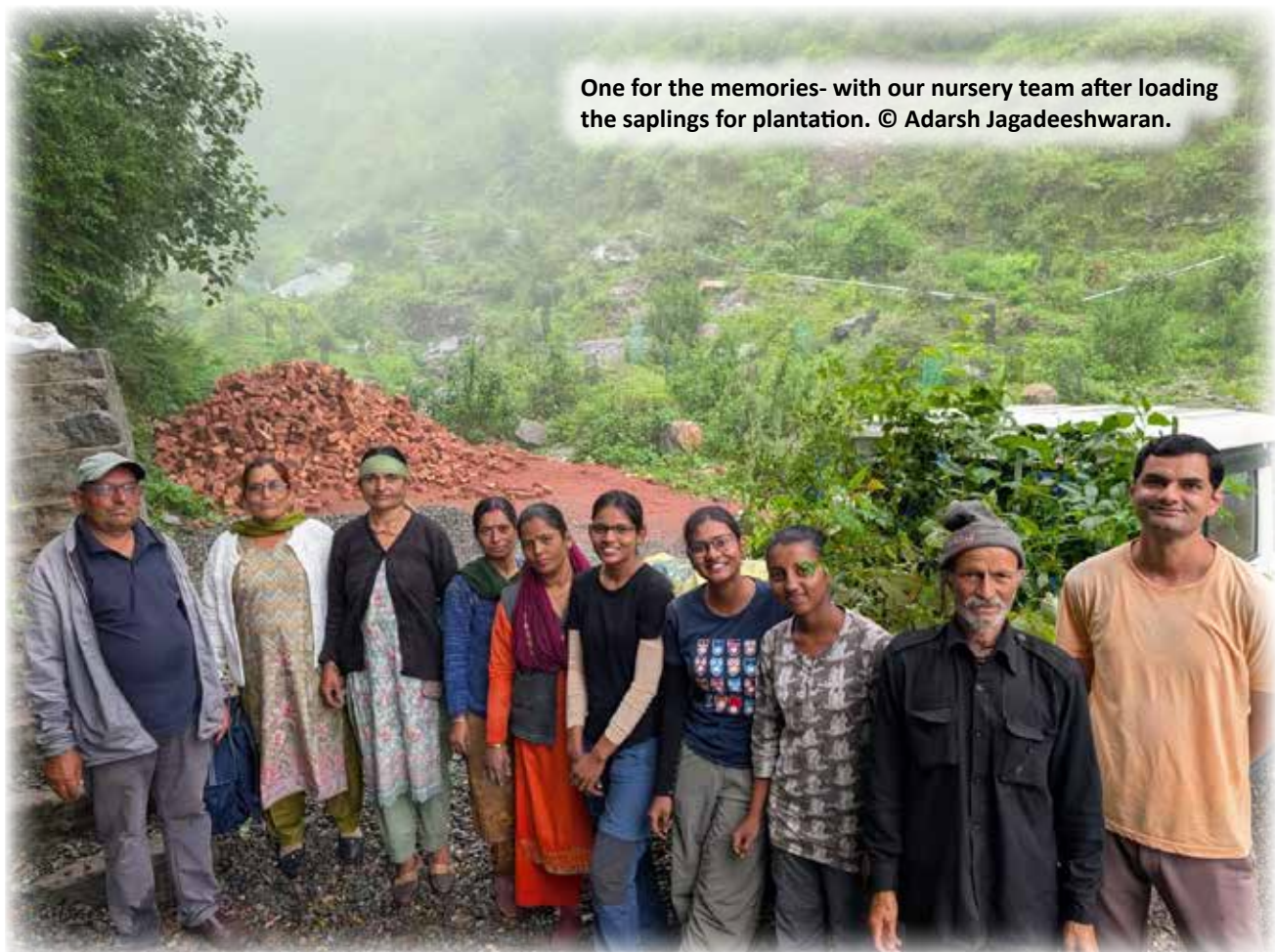
HRP Activity Update

I started this plantation season with curiosity about what plantation work would actually be like. I came out of it with muddy hands, tired legs, new experiences, stronger confidence and a much deeper understanding of what it means to work for ecological restoration in the Himalayas.

Shreya Yadav

Himalayan Restoration Project, Zoo Outreach Organisation, Coimbatore, Tamil Nadu, India.

Citation: Yadav, S. (2026). My First Plantation Season: Learning Ecological Restoration Through Experience. In: *Zoo's Print* 41(9): 04–10.



From classroom to field: exploring biodiversity and field techniques at Raimona National Park, Assam

“From the majestic Golden Langur swinging through tall trees to the elusive Dhole prowling the forest floor, Raimona National Park is a living testament to nature’s resilience”.

Tucked away in the verdant landscapes of northwestern Assam, bordering West Bengal, Raimona National Park stands as a vital haven of biodiversity and ecological importance. It forms part of a larger transboundary conservation area, connecting with Bhutan’s Phibsoo Wildlife Sanctuary and Buxa Tiger Reserve of West Bengal, which spans over 2,400 km² of the total conservation area. Raimona National Park, owing to its distinctive geographical setting and geology, contains 12 different forest types and sub-types. These include very moist sal forests, sub-Himalayan high alluvial semi-evergreen forests, moist mixed deciduous forests, savannah forests, riparian fringing forests, khair-sisoo forests, and extensive riverbeds, making it the most biodiverse forest belt in Assam.

Historically, the area was a part of the migratory route of the faunal species from Himalayan mountain, Indo-Malayan and Indo-Chinese realms towards the west and peninsular Indian realm species to the east (The Assam Tribune 2021).

The park is particularly renowned for its population of the Golden Langur *Trachypithecus geei*, an Endangered species (Das et al. 2024) and the official mascot of Bodoland. With an estimated population of over 12,000 individuals in Assam and Bhutan (Horwich et al. 2013), this primate is found in significant numbers across parts of western Assam and Bhutan, making it one of Raimona’s star attractions. Alongside the Golden Langur, the park shelters a remarkable array of wildlife, including Asian Elephant, Royal Bengal Tiger, Clouded Leopard, Indian Gaur, Wild Buffalo, Spotted Deer, and hornbills.



Field trip

The field trip to Raimona National Park, organised by the Department of Zoology at Gauhati University, aimed to observe and document the park’s floral and

Participants of the field trip to Raimona National Park.
© Binay Bhuson Nath.



Students participated in handling camera traps during fieldwork. © Vivek Chetry.

faunal diversity, study ongoing conservation practices, and enhance students’ practical skills in wildlife research techniques. During our three-day journey through Raimona, field observations were conducted primarily in the western range of Raimona National Park, extending up to Jamduar, a forested area adjacent to the Sankosh River known for its rich wildlife corridor, and in the central range towards the border with Bhutan’s



Golden Langur *Trachypithecus geei*. © Vivek Chetry.



Black Stork *Ciconia nigra* on dry bed of Hel River. © Binay Bhuson Nath.

Phibsoo Wildlife Sanctuary, which forms part of the transboundary conservation landscape connecting the protected areas of Assam and Bhutan. we documented 64 avian species, 10 mammalian species, and one reptilian species. Observations were made using binoculars, cameras, and camera traps and their GPS coordinates were recorded.

Among the 10 mammalian species observed, the endangered Golden Langur *Trachypithecus geei* stood out. These arboreal primates rely on tall trees for movement, making Raimona’s dense forests ideal for their survival. Other notable sightings included the Dhole *Cuon*



Fieldwork in action: learning beyond the classroom.
© Binay Bhuson Nath.

alpinus and the Asian Elephant *Elephas maximus*, which are endangered species. We also observed Spotted Deer *Axis axis*, which represents one of the easternmost records of the species' known distribution. The Bengal Monitor Lizard *Varanus bengalensis* was the only reptilian species observed which is categorised as 'Near Threatened' (Cota et al. 2021).

The park's avian diversity was equally impressive, with 64 species observed during the trip. Highlights included the 'Vulnerable' Great Hornbill *Buceros bicornis*, Oriental Pied Hornbill *Anthracoceros albirostris*, Black Stork *Ciconia nigra*, and the vibrant Sultan Tit *Melanochlora sultanea*.

Wild lessons and conservation practices

This field trip offered hands-on experiences that enriched our understanding of wildlife research and conservation. We learned how camera traps help monitor wildlife without human interference, providing data on species' presence, behaviour, and population density.

We performed point and line transect sampling methods on the field. Engaging with local communities highlighted the importance of involving them in conservation efforts.

Their knowledge and cooperation are vital in mitigating human-wildlife negative interactions and promoting sustainable livelihoods. One memorable moment was spotting a Leopard's pug mark-a reminder of the park's hidden wonders and the thrill of discovery.

We learned that anti-poaching camps, strategically cleared strips of land (fire lines), and habitat restoration efforts play a crucial role in wildlife protection and park management. For example, invasive plant species like Siam Weed *Chromolaena odorata* that once dominated certain areas are now being replaced with native vegetation, gradually transforming degraded patches into productive grasslands.

Conclusion

Raimona National Park is more than just a protected area. It is a lifeline for biodiversity

and a bridge between nations. As a critical wildlife corridor, it facilitates the movement of species between India and Bhutan, ensuring genetic exchange and ecological stability. However, sustaining its ecological and cultural significance requires continuous effort.

Strengthening wildlife corridors, empowering local communities, and implementing robust conservation policies will be key to preserving this natural heritage.

As we left the park, the distant call of a hornbill echoed through the trees—a poignant reminder of the delicate balance we must protect. Let us all play a part in safeguarding Raimona's future, for it holds lessons and treasures that benefit not only Assam but the world.

Acknowledgements

We gratefully acknowledge the head, Department of Zoology, Gauhati University; DFO, Kachugaon Division and the Wildlife Trust of India (WTI) for their valuable support and guidance.

References

- Das, J. et al. (2024). *Trachypithecus geei* (amended version of 2020 assessment). The IUCN Red List of Threatened Species 2024: e.T22037A259357017. <https://doi.org/10.2305/IUCN.UK.2024-2.RLTS.T22037A259357017.en>. Accessed on 11.vi.2025.
- Cota, M. et al. (2021). *Varanus bengalensis*. The IUCN Red List of Threatened Species 2021: e.T164579A1058949. <https://doi.org/10.2305/IUCN.UK.2021-2.RLTS.T164579A1058949.en>. Accessed on 11.vi.2025.
- Horwich, R.H. et al. (2013). Conservation and the current Status of the Golden Langur in Assam, India, with reference to Bhutan. *Primate Conservation* 27: 77–83.
- The Assam Tribune (2021). Assam: Raimona declared National Park on World Environment Day, 5 June. <https://assamtribune.com/assam/assam-raimona-declared-national-park-on-world-environment-day-1094487>. Accessed on 11.vi.2025.

Aditya Yubraj Barua, Binay Bhuson Nath, Himaskhi Saud, Heronyo Brahma, Jyotishman Saikia, Lijum Karga, Masudah Farhin, Nayanisha Kashyap, Saurish Sen Gupta, Shahnaz Yasmin, Vivek Chetry*, Pranjal Mahananda & Kuladip Sarma

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Bauhinia Blossom Festival in Laisong Village, Assam: a community-driven celebration for biodiversity and sustainable living

Laisong is one of the oldest villages in the (erstwhile N.C. Hills), now Dima Hasao District of Assam, bordering Nagaland, and Manipur in northeastern India. The village, inhabited by the Zeme Naga tribe since its inception, is situated 60 km from the district headquarters, Haflong.

Laisong's residents are deeply connected to their traditions and customs. During the rainy season, communication is often disrupted as landslides block or wash away motor roads. Despite these challenges, Laisong is rich in flora and fauna. *Bauhinia variegata*, in particular, holds cultural significance and has been celebrated annually since 2021 as the Bauhinia Blossom Festival.

Traditionally, villagers believed that where Bauhinia plants thrive, both humans and animals can survive. This belief guided settlement choices in ancient times. The Bauhinia flower is also a symbol of peace and optimism, bringing joy during the driest season with its vibrant blooms. The flowers are used as vegetables during community fishing events, sometimes offered as a substitute when fish are scarce, turning disappointment into a shared culinary experience.

Currently, the festival showcases the village's floriculture, the medicinal and ecological significance of Bauhinia, and aims to promote Laisong as a tourist destination—a "village of Bauhinia," or a "garden of peace," where visitors can experience the joy of nature.

There is a lack of documented community-led rural ecological models in northeastern India that integrate cultural values with sustainability. While many top-down environmental projects overlook indigenous knowledge systems, this paper focuses on how tribal traditions can offer bottom-up solutions with tangible environmental and economic outcomes.



Girls cherishing the Bauhinia Blossom Festival (2022). © Rechilungle Riame.



Vibrant celebration: village youth immersed in the joyous spirit of the Bauhinia Festival. © Rechilungle Riame.

Medicinal and health benefits of *Bauhinia variegata*

Bauhinia variegata is found in different parts of India and used to fight against numerous types of diseases. Regular consumption of plant products like flower, seeds, fruits, leaves in diet have many human health benefits as it helps in protecting the body from chronic disease like cancer, diabetes, and arthritis. *Bauhinia variegata* is one such plant (Sharma et al.2020). Each and every part of the plant contains various bioactive compounds which has health promising effects in

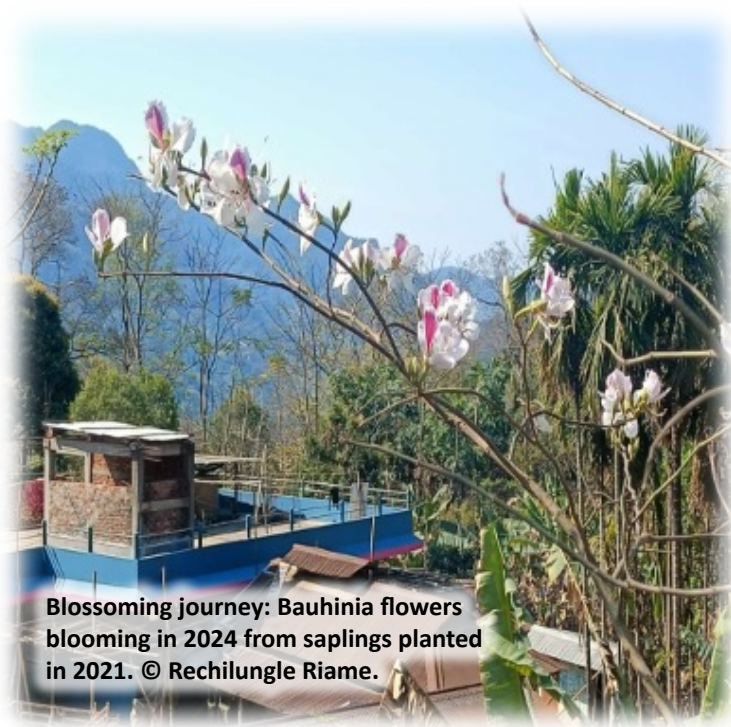
one or the other form (Kumar et al. 2020). The illiterate villagers in the absence of medical knowledge used the bark of Bauhinia

The objective of this write up is to illuminate the noble initiatives of an interior village for Bauhinia preservation, riverine and wild life protection along with cleanliness drive- a resolution taken by the Laisong Village Council and other civil society organisations of the village.

This study employs a qualitative case study approach using participatory rural appraisal (PRA) methods. Data were collected through purposive sampling, involving 20 in-depth interviews and three focus group discussions with village elders, council members, youth leaders, and women's groups. The research spans from 2021 to 2024, drawing on both primary sources (interviews, field notes, photographs) and secondary materials (village records, news reports, and scholarly literature).



Nurturing nature: Village boys actively engaged in planting Bauhinia saplings (2024). © Rechilungle Riame.



Blossoming journey: Bauhinia flowers blooming in 2024 from saplings planted in 2021. © Rechilungle Riame.

plant to threat dysentery and diarrhoea, skin diseases etc this practice is continuing even today. Bauhinia plant has medicinal value even for livestock (Carlowitz 1991). The leaves are believed to be particularly useful for cattle for retention of pregnancy (Singh 1989). The village has long been recognised Bauhinia plants as a crucial source of livelihood especially during dry seasons.

Ecological significance of *Bauhinia Variegata*

Locally known as “Nggapa” or mountain ebony, *Bauhinia variegata* has significant watershed protection value in its natural range, the sub-Himalayan tract, which is prone to soil erosion during heavy monsoon rains. It is planted to reclaim eroded sites and stabilize river banks (Carlowitz 1991). The tree provides shade, live fencing, improves soil fertility, and serves as a farm forestry species in

shelterbelts and windbreaks (Sheikh 1993). Planting Bauhinia helps mitigate landslides, a common problem for the village during the rainy season. The plant is multipurpose, especially valued as fodder in rural economies (Rojas-Sandoval & Acevedo-Rodriguez 2015). Its vibrant flowers attract pollinators such as bees and butterflies, supporting biodiversity and ecological balance.

Unlike externally imposed conservation schemes, the Laisong model aligns deeply with tribal values and ecological wisdom. The findings resonate with post-2020 literature

emphasizing biocultural diversity (Sharma et al. 2020; Rojas-Sandoval & Acevedo-Rodriguez 2015). In comparison to similar festivals in Arunachal and Meghalaya, Laisong’s approach integrates medicinal, ecological, and spiritual functions more holistically. The emphasis on intergenerational learning and collective rituals



Leadership in growth: Village headman proudly holding a Bauhinia sapling (April 2023). © Rechilungle Riame.

enhances sustainability.

This community-led movement reflects a living model of “survival planet” thinking—linking local wellbeing with global environmental consciousness.

Conclusion

The Bauhinia Blossom Festival is not merely a celebration—it stands as a manifesto for rural-led sustainability. By harmonizing biodiversity preservation with economic development and indigenous cultural practices, Laisong Village offers a replicable grassroots model for ecological stewardship. This initiative underscores the importance of integrating local ecological festivals into broader state-level eco-tourism plans, recognizing and funding village-level biodiversity councils, and developing platforms for documenting similar indigenous sustainability practices. However, the study is limited to a single village, which may affect the generalizability of the findings across other tribal contexts. Moreover, it lacks quantitative ecological impact assessments, which future research can address. Further studies could involve comparative analyses of similar efforts across northeastern India and longitudinal tracking of the ecological impact of Bauhinia plantation efforts to assess their long-term viability and influence.

References

- Carlowitz, P.G. von. (1991). Multipurpose trees and shrubs: sources of seeds and inoculants. ICRAF, Nairobi, 265 pp.
- Kumar, P. et al. (2020). Biotechnological application of health promising bioactive molecules, pp. 165–189. In: Verma, M.L. & A.K. Chandel (eds.). Biotechnological Production of Bioactive Compounds. Elsevier Science Ltd, 508 pp.
- Rojas-Sandoval, J. & P. Acevedo-Rodriguez (2015). *Bauhinia variegata* (Mountain ebony). CABI Compendium 8656.
- Sharma, K. et al. (2020). *Bauhinia variegata*: A comprehensive review on bioactive compounds, health benefits and utilization. Advances in Traditional Medicine 21: 645–653.
- Sheikh, M.I. (1993). Trees of Pakistan. GOP-USAID Forestry Planning and Development Project. Islamabad, Pakistan. Pictorial Printers (Pvt) Ltd.
- Singh, S.P. (1989). Wasteland Development. Agricole Publishing Academy, New Delhi, 227 pp.

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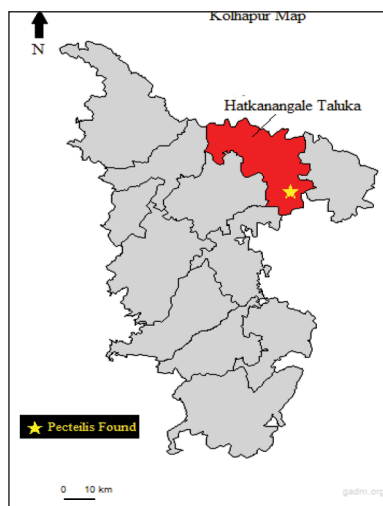
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Pecteilis gigantea orchid from the arid hills of Hatkanagale, Maharashtra

The genus *Pecteilis* Raf. belongs to the family Orchidaceae within the clade Angiosperms. This genus comprises a total of 10 recognised species (Govaerts 2003; Pridgeon et al. 2001). This genus is indigenous to the Russian far east and tropical Asia. The genus pertains to terrestrial orchids. Orchids are predominantly located in nine principal habitats of Maharashtra. *Pecteilis gigantea* (Sm.) Raf. is a fragrant terrestrial orchid. Owing to its floral morphology, it is referred to as the Butterfly Orchid in English, while in Marathi it is designated as 'Wagchora', since the petals mimic the visage of a Tiger near the whiskers. It is sometimes referred to as the Queen of Khandala Orchid. It can be seen nearly in all types of habitats including desert habitat (Jalal & Jayanthi 2018). Natural shrubs and the open slopes of hills is renowned for its presence. However, the research conducted by Jalal & Jayanthi (2018) indicates that this species can occur in grassland ecosystems.

This species is documented and found in many districts of Maharashtra: Bhandara, Kolhapur, Nashik, Pune, Raigad, Satara, Sindhudurg, and Thane.



Map of Kolhapur



Habit of *Pecteilis gigantea*

Radhanagari in western Kolhapur is well known for its presence. Previously this species was recorded in conjunction with Radhangari at Ajara, Bhudargad, Chandgad, Panhala, and Shahuwadi taluka (Yadav & Sardesai 2002).

Kolhapur is climatically partitioned by an evergreen forest in the west and a dry region in the east. This division is distinctly delineated by the NH4 highway. The western side of this route comprises evergreen and semievergreen



Flower Closeup

habitat, whilst the eastern part is arid. The average annual rainfall in this region ranges 500–650 mm. The forest in this region predominantly consists of thorny trees, shrubs, and climbing plants such as *Vachellia nilotica*, *V. farnesiana*, *Searsia mysorensis*, *Gymnosporia senegalensis*, *Flueggea leucopyros* together with others like *Morinda coreia*, *Cordia dichotoma*, *Butea monosperma*, *Celastrus paniculatus*, *Holoptelia integrifolia*, *Bridelia retusa* and very commonly occurring herbs including *Exacum pedunculatum*, *Parasopubia delphinifolia*, *Grona triflora*, *Striga asiatica*, *Sesamum prostratum*, and *Neuracanthus sphaerostachyus*.

During the implementation of the citizen science programme of forest watch in the arid hills of eastern Kolhapur, we documented a

living specimen of *Pecteilis gigantea* amidst the shrubs of *Rotheca serrata* and various grass species. The taxon is located on the east-facing side of the hill. The precise location of the living plant is 16.7478° N, 74.3853° E, situated in the Atigre Hills behind the Sanjay Ghodawat University campus in Kolhapur. The live specimen had a mother plant accompanied by two offspring plants. Upon consulting botanists and referring to (Yadav & Sardesai 2002; Sharma et al. 1996), we found that this stands as first record in Hatkanagale Taluk, Kolhapur District.

It is an infrequently occurring endangered geophyte orchid. Its existence is jeopardised by habitat destruction and unsustainable utilisation (Jalal & Jayanthi 2018).

Taxonomic treatment

***Pecteilis gigantea* (Sm.) Raf. in Fl. Tellur. 2: 38. 1837; Sharma et al. Fl. Mah. Monocotyledons, 53. 1996; Sardesai & Yadav, Fl. Kolhapur, 455. 2002. *Habenaria gigantea* (Sm.) D. Don in Prodr. Fl. Nepal.: 24. 1825. *Orchis gigantea* Sm. in Exot. Bot. 2: 79. 1806.** Herbs 60–120 cm in height; tubers are two, either elliptical or ovoid in shape. Leaves measuring 5–18 cm by 2–7 cm, ovate-oblong to lanceolate, acute, frequently exhibiting a strong black apex, entire. Terminal inflorescence, including 2–6 flowers in racemes, measuring 16–20 cm in length. Flowers approximately 6.0 × 7.5 cm, white with a subtle green hue, bracteate, and briefly pedicellate. Capsules measuring 4.5 × 1.7 cm, ellipsoidal, prominently ribbed, and beaked.

Flowers & Fruits: September–December.

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References

- Govaerts, R. (2003). How many species of seed plants are there? *Taxon* 52(3): 583–584.
- Jalal, J.S. & J. Jayanthi (2018). An updated checklist of the orchids of Maharashtra, India. *Lankesteriana* 18(1): 23–62.
- Pridgeon, A.M. et al. (2001). *Genera Orchidacearum*. Volume 2, Orchidoideae Part (1). Oxford University Press, Oxford, 438 pp.
- Sharma, B.D. et al. (1996). *Flora of Maharashtra State. Monocotyledons: Flora of India series 2*. Botanical Survey of India, Calcutta, 802 pp.
- Yadav, S.R. & M.M. Sardesai (2002). *Flora of Kolhapur district*. Shivaji University, 679 pp.

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A preliminary floristic account of Nageswari Hill and Balda Cave and its surroundings, Odisha

The Eastern Ghats, a discontinuous range of mountains along the eastern coast of India, play a significant role in the floristic diversity of the region. It runs from Odisha, Andhra Pradesh, with parts of Karnataka and Telangana, up to Tamil Nadu. The Eastern Ghats are home to over 3,000 species of flowering plants, with many endemic species (Reddy et al. 2002). Koraput district of Odisha is known for its rich floristic diversity and is also renowned for its rich traditional knowledge of plants and the deep-rooted relationship between its tribal communities and the natural environment. Home to diverse indigenous tribes such as the Kondhs, Parajas, and Gadabas, Koraput has long been a center for ethnobotanical knowledge, where medicinal plants and wild edibles play a crucial role in healthcare, nutrition, and cultural practices. It was also designated as a “Globally Important Agricultural Heritage System” (FAO 2012).

Nageswari hill and Balda cave, located in Nandapur block of Koraput District, hold significant floristic and ecological value due to their unique topography, microclimate, and relative isolation. The vast tabletop plateau, popularly known as “India map hill,” provides a microhabitat for various plant species. These sites support a rich diversity of endemic, rare, and medicinal plant species that are not commonly found in the surrounding lowland regions. Nageswari hill, in particular, is known for its dense semi-evergreen to moist

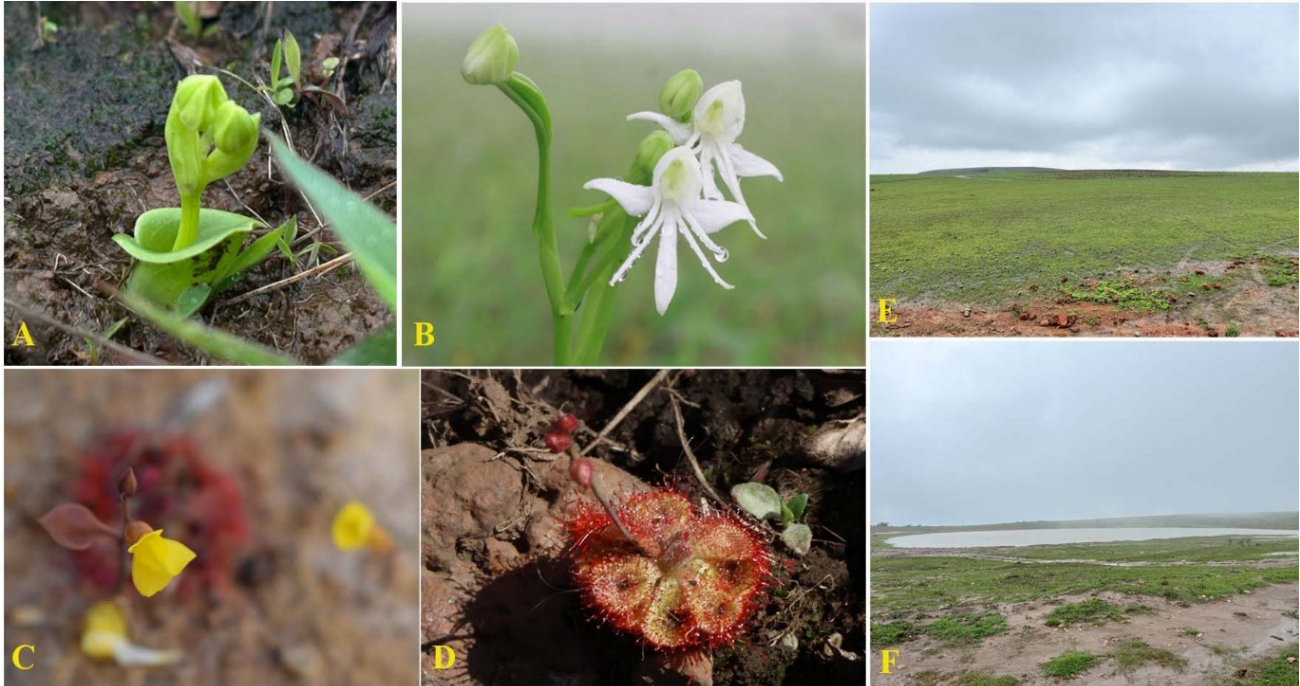
deciduous forest cover, harbouring several ethnobotanically important species used by local tribal communities for traditional medicine and rituals.

Balda cave, nestled within forested hills, provides a microhabitat that sustains shade-loving and moisture-retentive flora, including ferns, orchids, and mosses. These areas are considered refugia for many plant species, contributing to the overall biodiversity of the Eastern Ghats. The cultural and religious significance of these sites further protects their ecological integrity, as many plants are preserved due to their sacred associations with local deities, “Donger Dei” and tribal customs during the Chaitra festival.

During a recent botanical exploration tour to the Koraput district, the authors also surveyed the Nageswari hill and Balda, where several interesting plants were documented. The lateritic plateau in this area almost looks barren during the summer season; however, during the monsoon season, this plateau gets covered with small streams, seasonal ponds, and puddles among rock crevices (Lekhakh & Yadav 2012). These provide microhabitat for a variety of species. Some pteridophytes, such as *Hemionitis arifolia* (Burm.f.) T.Moore, *Asplenium* L., *Pityrogramma* Link., etc. grow abundantly along stream banks. Some common medicinal plants, such as *Celastrus paniculatus* Willd., *Cleistanthus patulus* (Roxb.) Müll.Arg.,

Floristic enumeration:

	Plant name	Family	Habit
1	<i>Acmella</i> sp.	Asteraceae	Herb
2	<i>Agave americana</i> L.	Asparagaceae	Herb
3	<i>Ageratum conyzoides</i> L.	Asteraceae	Herb
4	<i>Ammannia</i> sp.	Lythraceae	Herb
5	<i>Asplenium</i> L.	Aspleniaceae	Herb
6	<i>Bonnaya oppositifolia</i> (Retz.) Spreng.	Linderniaceae	Herb
7	<i>Brugmansia suaveolens</i> (Humb. & Bonpl. ex Willd.) Sweet	Solanaceae	Shrub
8	<i>Celastrus paniculatus</i> Willd.	Celastraceae	Tree
9	<i>Centella asiatica</i> (L.) Urb.	Apiaceae	Herb
10	<i>Chromolaena odorata</i> (L.) R.M.King & H.Rob.	Asteraceae	Shrub
11	<i>Chrysopogon aciculatus</i> (Retz.) Trin.)	Poaceae	Herb
12	<i>Cleistanthus patulus</i> (Roxb.) Müll.Arg.	Phyllanthaceae	Tree
13	<i>Cyanotis</i> sp.	Commelinaceae	Herb
14	<i>Dillenia pentagyna</i> Roxb.	Dilleniaceae	Tree
15	<i>Drosera burmanni</i> Vahl	Droseraceae	Herb
16	<i>Drosera indica</i> L.	Droseraceae	Herb
17	<i>Eclipta</i> sp.	Asteraceae	Shrub
18	<i>Emilia</i> sp.	Asteraceae	Herb
19	<i>Fimbristylis</i> sp.	Cyperaceae	Herb
20	<i>Grangea maderaspatana</i> (L.) Desf.	Asteraceae	Herb
21	<i>Grona triflora</i> (L.) H.Ohashi & K.Ohashi	Fabaceae	Herb
22	<i>Habenaria grandifloriformis</i> Blatt & McCann.	Orchidaceae	Herb
23	<i>Hemionitis arifolia</i> (Burm.f.) T.Moore	Pteridaceae	Herb
24	<i>Hoppea dichotoma</i> Willd.	Gentianaceae	Herb
25	<i>Hypericum gaitii</i> Haines	Hypericaceae	Small Tree
26	<i>Hypericum japonicum</i> Thunb.	Hypericaceae	Herb
27	<i>Ischaemum rugosum</i> Salisb.	Poaceae	Herb
28	<i>Litsea glutinosa</i> (Lour.) C.B.Rob.	Lauraceae	Tree
29	<i>Macaranga peltata</i> (Roxb.) Müll.Arg.	Euphorbiaceae	Small Tree
30	<i>Mappia nimmoniana</i> (J.Graham) Byng & Stull	Icacinaceae	Small Tree
31	<i>Murdannia</i> sp.	Commelinaceae	Herb
32	<i>Neocinnamomum caudatum</i> (Nees) Merr.	Lauraceae	Tree
33	<i>Lantana camara</i> L.	Verbenaceae	Shrub
34	<i>Limnophyla</i> sp.	Plantaginaceae	Herb
35	<i>Oldenlandia</i> sp.	Rubiaceae	Herb
36	<i>Pilea microphylla</i> (L.) Liebm.	Urticaceae	Herb
37	<i>Pityrogramma</i> Link	Pteridaceae	
38	<i>Pogostemon</i> sp.	Lamiaceae	Shrub
39	<i>Rotala</i> sp.	Lythraceae	Herb
40	<i>Smithia</i> sp.	Fabaceae	Herb
41	<i>Stylidium</i> sp.	Stylidiaceae	Herb
42	<i>Utricularia bifida</i> L.	Lentibulariaceae	Herb



A&B—*Habenaria grandifloriformis* Blatt & McCann (Orchidaceae) | C—*Utricularia bifida* L. (Lentibulariaceae)
| D—*Drosera burmanni* Vahl (Droseraceae) | E&F—Habitat of the plateau.



Anthropogenic threats prevailing on the plateau: A—Grazing by cattle | B—Tourism | C—Trampling.

Dillenia pentagyna Roxb., *Litsea glutinosa* (Lour.) C.B.Rob., *Macaranga peltata* (Roxb.) Müll.Arg., *Mappia nimmoniana* (J.Graham) Byng & Stull, *Neocinnamomum caudatum* (Nees) Merr., are found growing abundantly throughout the area. Additionally, the plateau is also home to the Near Threatened endemic terrestrial orchid, *Habenaria grandifloriformis* Blatt & McCann. This endemic taxon has been previously reported from different parts of Koraput, viz. Panchpatmate, Deomali, Pattangi, Turia Parbat (Saxena & Brahmam 1995; Misra 2004; Misra 2007; Patil 2022). The species is currently known from only a limited number of occurrences in the Koraput District.

The authors have encountered a good population comprising approximately 1,000 individuals growing in this plateau, which is an additional locality within the Koraput District. *Hypericum gaitii* Haines, another endemic, threatened known only from Jenabila (Similipal) & Deomali (Koraput), has been found naturally growing abundantly on the rocky slopes of Nageswari hill. During the winter, small patches of carnivorous plants, primarily *Drosera burmanni* Vahl, and *Utricularia bifida* L. along with can be spotted throughout the plateau.

Threats

Habitat degradation is considered one of the key factors contributing to the depletion of floristic diversity. Nageswari hills and the plateau are under threats from uncontrolled tourism, along with other man-made activities like grazing by domesticated animals, trampling, etc. This gradually leads to the deterioration of the quality of the habitat.

Moreover, tourism, grazing, quarrying, plantation of *Eucalyptus* sp., and expansion of cultivation land are already causing severe alterations in these plateaus. The region, characterized by lateritic plateaus and dense forests, holds some of the largest bauxite reserves in the country, such as Panchpatmali.

Now, Nageswari hill appears to be following a similar trajectory, as the Odisha government plans to initiate bauxite mining there. It is crucial to protect this area to ensure the conservation of the species thriving in this habitat.

Conclusion

The Nageswari hill plateau is home to two endemic species such as *Habenaria grandifloriformis* Blatt. & McCann & *Hypericum gaitii* Haines, including carnivorous plants, as well as several threatened medicinal plants. Environmentalists and local communities have expressed their deep concern about the potential ecological degradation and the erosion of cultural heritage that could result from mining and related development activities.

Given these risks, proactive and concrete measures should be taken to preserve this unique plateau in its natural state; otherwise, its unique biodiversity and the traditional knowledge of the indigenous tribes associated with these plant species will be lost forever before being documented.

References

- Saxena, H.O. & M. Brahmam (1995). The Flora of Orissa. (Acanthaceae to Commelinaceae). Vol. 3. Regional Research Laboratory, Bhubaneswar & Forest Development Corporation, Bhubaneswar.
- FAO (2012). Globally Important Agricultural Heritage Systems (GIAHS)-Koraput Traditional Agriculture, India. Food and Agriculture Organization of the United Nations. <https://www.fao.org/giahs/giahsaroundtheworld/india-koraput/en/>. Accessed on 08.vii.2025
- Lekhak, M.M. & S.R. Yadav (2012). Herbaceous vegetation of threatened high altitude lateritic plateau ecosystems of Western Ghats, southwestern Maharashtra, India. *Rheedea* 22(1): 39–61.
- Misra, S. (2004). Orchids of Orissa. Bishen Singh Mahendra Pal Singh, Dehradun, 774 pp.
- Misra, S. (2007). Orchids of India, a Glimpse. Bishen Singh Mahendra Pal Singh, Dehradun, 402 pp.
- Patil, A. (2022). *Habenaria grandifloriformis*. The IUCN Red List of Threatened Species 2022: e.T13424554A13424557. <https://doi.org/10.2305/IUCN.UK.2022-1.RLTS.T13424554A13424557.en>. Accessed on 29 August 2025.
- Reddy, C.S. et al. (2002). Vegetation diversity and endemism in Eastern Ghats, India, pp. 109–134. In: Baquer, S.H. et al. (eds.). Proceedings of National Seminar on Conservation of Eastern Ghats. S.V. University, Tirupati, March 24–26. Environment Protection Training and Research Institute, Hyderabad.

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#275
21 September 2026

First record of algal fouling on Dog-faced Water Snake from Gorai, Mumbai, India

Biofouling is the unintended settlement and growth of aquatic species on submerged natural and artificial surfaces. Algal fouling, a type of biofouling, refers to the undesirable accumulation of algae and other microorganisms on surfaces including bodies of moving organism, particularly in aquatic environments. Among aquatic animals, fouling by algae has been reported in freshwater (Neil & Allen 1954) and marine turtles (Báez et al. 2002) and several taxa of sea snakes *Acrochordus granulatus*, *Aipysurus aephaeformis*, *A. duboisii*, *A. foliosquama*, *A. fuscus*, *A. laevis*, *Hydrophis coggeri*, *H. kingii*, *H. melanocephalus*, *H. peroni*, and *H. stokesii*.

Algal fouling has previously been reported in *Cerberus rynchops* from Sonadia Island, Bangladesh. During a 17-day survey, the authors captured 513 specimens, of which five exhibited dense algal fouling (Rahman & Reza 2013).

Although the algae fouling observed on *C. rynchops* in Gorai Creek, Mumbai, India was a chance sighting, and it has not been reported from India, *C. rynchops* belong to the family



***Cerberus rynchops* algae fouling-full body**



***Cerberus rynchops* algae fouling-half body**



***Cerberus rynchops* algae fouling on the body**
© Rahulratan Chauhan.



Homalopsidae. These are medium sized, rare fanged aquatic snakes, inhabiting various range of coastal low-lying habitats such as mangroves, mudflats, tidal rivers. *Cerberus* snakes are widely distributed in the coastal areas of southern and southeastern Asia to northern Australia. Among the five recognized species of *Cerberus*, *C. rynchops* is known to occur in the coastal areas of India, Sri Lanka, Bangladesh, and Myanmar (Murphy et al. 2012). There are reports of *C. rynchops* seen in Gorai mangroves, Mumbai, Maharashtra (Chauhan & Shingadia 2012).

On the morning of 11 February 2025, during a routine cycling visit to Gorai creek, Borivali (19.2369° N, 72.8201° E), I found a snake *Cerberus rynchops* covered in algae. At first, it looked like a rope but on a closer examination it was a snake covered in algae. The snake was captured by hand, photographed using mobile phone camera and released back into the sea where it was found. The snake looked visibly tired may be due to swimming in the sea and possibly because of the algae growth on its body.

Although no harmful effects are known on the snake *Cerberus rynchops* due to algae fouling, there are possible pros and cons for the same. Pros can be that the algae fouling helps the snake in blending with the surroundings, protecting it from predators and helps it camouflage itself from the prey. Cons can be included in creating greater resistance during movement. It was not determined whether the algae would be lost completely at ecdysis or if the attached algae would disrupt the normal

shedding cycle (Shine et al. 2010; Rahman & Reza 2013).

Algae fouling in *Cerberus rynchops* has not been studied in detail, and hence, a detailed study needs to be carried out. This represents the first document record of algae fouling from India.

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References

- Báez, J.C. et al. (2002). Preliminary checklist of the epizootic, macroalgae growing on loggerhead turtles in the western Mediterranean Sea. *Marine Turtle Newsletter* 98: 1–2.
- Chauhan, R.R. & H.U. Shingadia (2012) Preliminary survey of herpetofauna of Borivali mangroves—a coastal belt in the suburbs of Mumbai. *Life sciences Leaflets (LSIC2011)*: 59–65.
- Murphy, J.C. et al. (2012). The dog-faced water snakes, a revision of the genus *Cerberus* Cuvier, (Squamata, Serpentes, Homalopsidae), with the description of a new species. *Zootaxa* 3484: 1–34.
- Neil, W.T. & E.R. Allen (1954). Algae on turtles: some additional considerations. *Ecology* 35(4): 581–584.
- Rahman, S. & A. Reza (2013). Algal fouling on dog-faced water snake (*Cerberus rynchops*, Serpentes: Homalopsidae). *Herpetology Notes* 6: 373–374.
- Shine, R. et al. (2010). A sea snake's colour affects its susceptibility to algal fouling. *Proceedings of the Royal Society B* 277: 2459–2464.

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Reptiles of Navalgunda, a semi-arid region of Dharwad District, Karnataka

Reptiles inhabit a wide range of ecosystems, including marshes, grasslands, scrub jungles, woodlands, rivers, and oceans. India's diverse landscape supports a rich variety of reptilian species such as snakes, lizards, turtles, tortoises, and crocodiles. A conservation study by Srinivasulu et al. (2014) identified around 157 reptile species endemic to the Western Ghats and peninsular India. Later, Aengals et al. (2018) updated the national checklist to include 572 species, comprising three crocodile species, 34 turtles and tortoises, 231 lizards, and 304 snakes across 36 families. More recent compilations by Uetz et al. (2025) and Mohapatra et al. (2024) reported a total of 778 species and subspecies across India's states and Union Territories, with 427 species considered endemic.

Navalgunda (15.5605° N, 75.3556° E, 578 m) is a panchayat town located approximately 48 km from Dharwad City of Karnataka, characterized by a semi-arid climate. The region is drought-prone and supports a variety of habitats that sustain diverse animal life. The local climate features temperatures that generally range between 62°F and 97°F throughout the year,



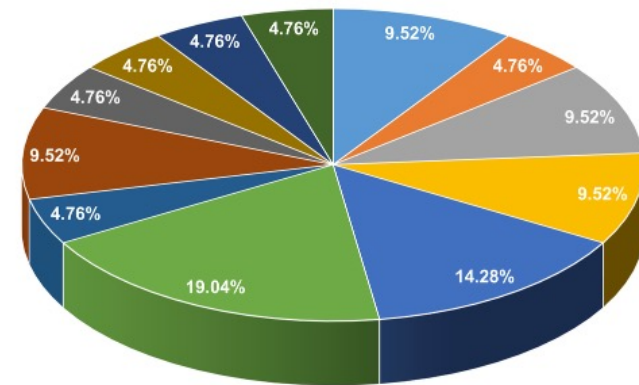
The map of Karnataka (a) showing the study area located at Navalgunda in the Dharwad District (b). A satellite view of Navalgunda (c) study areas: (1) Navalgunda Hill, (2) Neelammanakere, (3) Agriculture fields, and (4) Bennehalla. (Source: Google Maps).

rarely dipping below 56°F or rising above 103°F. Nevertheless, there is currently no published information on the herpetofauna diversity of the area. The present study aims to document the diversity status of reptiles in and around

Navalgunda, Dharwad District, Karnataka.

Field surveys were conducted twice a month over a period of nine months, from November 2023 to July 2024, covering a total area of 1042595.16 m² across four locations: 1) Navalgunda Hill (15.560141° N, 75.345293° E; 386166.18 m²), 2) Neelammanakere (15.555203° N, 75.356109° E; 76131.39 m²), 3) Agricultural Fields (15.562749° N, 75.365978° E; 306330.07 m²), and 4) Bennehalla (15.564072° N, 75.354347° E; 273967.52 m²). The study mainly employed the visual encounter survey method for data collection. Species identification was carried out using established taxonomic references (Daniel 2002; & Das & Das 2018; Das 2020). In addition, online resources such as Uetz et al. (2025) and iNaturalist (2025) were also referred for identification of species.

The present study recorded the occurrence of reptilian fauna, including different forms of lizards, snakes, and turtles in Navalgunda town, Dharwad district, Karnataka. In this survey, two orders of



Pie chart showing the distribution of reptilian families in Navalgunda, Dharwad District.

Checklist of reptilian fauna in Navalgunda, Dharwad

	Scientific name	Common name	IUCN Red List status
	Order Squamata		
	Family Agamidae		
1	<i>Calotes versicolor</i>	Oriental Garden Lizard	LC
2	<i>Sitana ponticeriana</i>	Pondicherry Fan-throated Lizard	LC
	Family Boidae		
3	<i>Eryx johnii</i>	Red Sand Boa	NT
	Family Colubridae		
4	<i>Fowlea piscator</i>	Chequered Keelback	LC
5	<i>Ptyas mucosa</i>	Oriental Rat Snake	LC
	Family Elapidae		
6	<i>Bungarus caeruleus</i>	Common Krait	LC
7	<i>Naja naja</i>	Indian Cobra	LC
	Family Gekkonidae		
8	<i>Hemidactylus brookii</i>	Brooke's House Gecko	LC
9	<i>Hemidactylus frenatus</i>	Common House Gecko	LC
10	<i>Hemidactylus leschenaultii</i>	Leschenault's Gecko	LC
	Family Scincidae		
11	<i>Eutropis carinata</i>	Keeled Indian Mabuya	LC
12	<i>Eutropis macularia</i>	Bronze Mabuya	LC
13	<i>Riopa punctata</i>	Common Dotted Garden Skink	NE
14	<i>Sphenomorphus indicus</i>	Indian Forest Skink	LC
	Family Typhlopidae		
15	<i>Indotyphlops braminus</i>	Brahminy Blind Snake	LC
	Family Uropeltidae		
16	<i>Uropeltis rajendrani</i>	Rajendran's Shieldtail Snake	NE
17	<i>Uropeltis jerdoni</i>	Jerdon's Shieldtail Snake	NE
	Family Varanidae		
18	<i>Varanus bengalensis</i>	Bengal Monitor Lizard	NT
	Family Viperidae		
19	<i>Daboia russelii</i>	Russel's Viper	LC
	Order Testudines		
	Family Geoemydidae		
20	<i>Melanochelys trijuga</i>	Indian Black Turtle	LC
	Family Trionychidae		
21	<i>Lissemys punctata</i>	Indian Flapshell Turtle	VU

LC—Least Concern | NE—Not Evaluated | NT—Near Threatened | VU—Vulnerable.



reptiles, namely, Squamata and Testudines were documented, of which squamates comprised 10 families with a total of 19 species, whereas the testudines comprised of two families with a total of two species. Scincidae was the most represented family with four species (19.04%), followed by Gekkonidae with three species (14.28%). Agamidae, Colubridae, Elapidae, and Uropeltidae were each represented by two species (9.52%).

The Garden Lizard, *C. versicolor*, was spotted on trees in both rural and urban environments. Skinks were present in both types of areas, frequently found in house gardens and bushes. Gekkonid lizards like *H. frenatus* were commonly found in urban areas, whereas other gecko species were typically located in rocky regions and trees. The Indian flap shell turtle and Indian black turtle were found near wetlands and in water bodies, respectively.

These observations indicate that the study area offers diverse habitat conditions for different types of reptiles, as noted in the present investigation.

The majority of reptilian fauna in the study area falls within the 'Least Concern' (15 species) status, according to the IUCN Red List. However, some species are listed as 'Vulnerable' (*Lissemys punctata*) and 'Near Threatened' (*Eryx johnii* & *Varanus bengalensis*).

Overall, the abundance of squamate reptiles observed in a small town like Navalgunda can be attributed to favourable environmental conditions, including the semi-arid climate, black soil, hilly regions, and agricultural fields.

However, anthropogenic activities like burning of bushes, drilling of hills, and pollution of water bodies also pose threats to the species. These activities can lead to habitat loss and disrupt animal life. Given the crucial role of reptiles in the ecological system, conservation measures are essential to preserve the reptilian diversity in this area.

References

- Aengals, R. et al. (2018). A checklist of Reptiles of India. Version 3.0. Online publication, 35 pp. www.zsi.gov.in. Accessed on 11.ix.2025.
- Daniel, J.C. (2002). The Book of Indian Reptiles and Amphibians. Bombay Natural History Society and Oxford University Press. Mumbai, 248 pp.
- Das, I. (2020). Snakes and other Reptiles of India. Helm, UK, 144 pp.
- Das, A. & I. Das (2018). A Naturalist's Guide to the Reptiles of India. John Beaufoy Publishing, UK, 176 pp.
- Mohapatra, P.P. et al. (2024). Checklist of fauna of India: Chordata: Reptilia. <https://doi.org/10.26515/Fauna/1/2023/Chordata:Reptilia>. Accessed on 11.ix.2025.
- Srinivasulu, C. et al. (Compilers) (2014). *The status and distribution of Reptiles in the Western Ghats, India*. Conservation Assessment and Management Plan (CAMP). Wildlife Information Liaison Development Society, Coimbatore, Tamil Nadu, 160 pp.
- Uetz, P. et al. (2025). The Reptile Database. <http://www.reptile-database.org>. Accessed on 11.ix.2025.
- iNaturalist (2025). <https://www.inaturalist.org/>. Accessed on 11.ix.2025.

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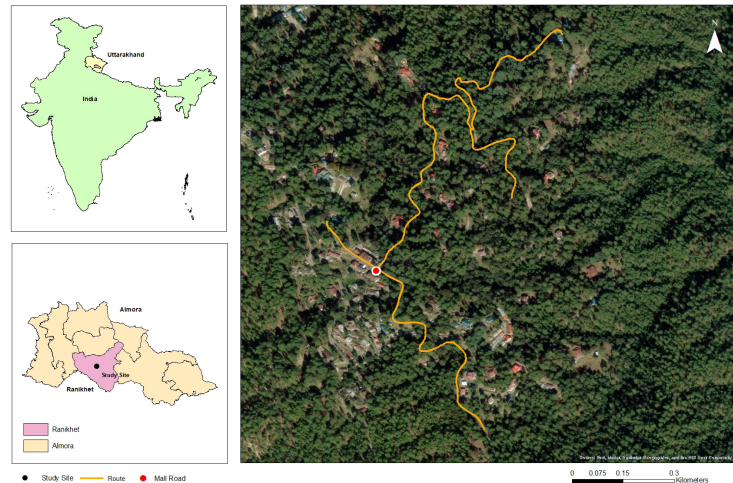


Nocturnal gliders and hidden threats: natural history notes on the flying squirrels of Kumaon Himalaya

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

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

Flying squirrels are one of the least studied mammalian species of



The study site and survey routes.



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



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



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



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

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

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

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

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

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

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



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

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

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

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

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

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

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

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



References

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

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

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

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

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

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

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

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

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

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

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

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

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

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Spotted Crake sighted at Harike Wildlife Sanctuary, Punjab



Spotted Crake at Harike, Punjab. © Amit Sharma & © Paramnoor Singh Antaal.

On the 25 December 2025, during a visit to Harike Wildlife Sanctuary, near Makhu-Lohian Khas-Sultanpur Lodhi Road (31.1164° N, 75.0136° E, 210 m), in Ferozepur District, Punjab, India, the first and second authors observed a bird at approximately 0950 h, while walking along a reedbed. The bird emerged from nearby agricultural fields and moved towards the adjoining reeds without vocalising. It remained calm and stayed for a while on the trail before moving into the thick reeds. The bird was photographed and pictures were clear enough for its identification as a Spotted Crake *Porzana porzana*. Diagnostic features included heavy white speckling overall, an orange base of the bill, brown eye, and grey in the supercilium and sides of the neck (Ali & Ripley 2001; Rasmussen & Anderton 2012).

The Spotted Crake is rare and elusive, but it is a widespread passage migrant and winter visitor

to southern Asia, mainly to the northwestern, and northcentral plains, ranging from Sindh to Assam, with scattered records from the Indian Peninsula, up to Belgaum, in northern Karnataka (Ali & Ripley 2001; Rasmussen & Anderton 2012). In India, it is normally found in shallow freshwater wetlands, such as seepages, marshes, reservoirs, and canals, with areas of dense reeds and grasses (Ali & Ripley 2001; Rasmussen & Anderton 2012). Like most other crakes, it is a skulker, and easily overlooked. It is crepuscular, and occurs singly, or in pairs (Kumar et al. 2005; Rasmussen & Anderton 2012).

This species was previously reported from Punjab by Mukherjee (1995). The location shown in the map, though not named, corresponds to Harike. Kazmierczak et al. (1998) and Öberg (1998), also indicated the species from Harike but without photographic evidence. Subsequent references to the species from Punjab

in websites, field guides, checklists, and other secondary sources appear to be based on these earlier reports, as no additional primary records from Harike or elsewhere in Punjab could be traced. Therefore, the present photographic documentation constitutes a significant record for the state.

References

- Ali, S. & S.D. Ripley (2001). Handbook of the birds of India and Pakistan together with those of Bangladesh, Nepal, Bhutan and Sri Lanka. 2nd ed. Vol. 2 .Oxford University Press, Delhi, 347 pp.
- Kazmierczak, K. et al. (1998). Birdwatching areas: Harike Bird Sanctuary, Punjab State, India. Oriental Bird Club Bulletin 27: 42–46.
- Kumar, A. et al. (2005). Handbook of Indian Wetland Birds and their conservation. Zoological Survey of India, Kolkata, 468 pp.
- Mukherjee, A.K. (1995). Birds of arid and semi-arid tracts. Records of the Zoological Survey of India, Occasional Paper 142. Zoological Survey of India, Calcutta, 303 pp.
- Öberg, P. (1998) eBird India Checklist: <https://ebird.org/checklist/S52047326>. Accessed on 14.v.2026.
- Rasmussen, P.C. & J.C. Anderton (2012). Birds of South Asia: the Ripley guide. 2nd ed. 2 vols. Smithsonian Institution and Lynx Edicions. Washington, D.C. and Barcelona, 378 & 683 pp.

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Brownish-flanked Bush Warbler near Garhshankar, Punjab



Brownish-flanked Bush Warbler near Garhshankar, Punjab.
© Paramnoor Singh Antaal.

Brownish-flanked Bush Warbler *Horornis fortipes* is a resident of the Himalaya and northeastern India (Grimmett et al. 2011). Race *H. f. pallida* breeds in the lower western Himalaya at 1,800–3,000 m with the areas closest to Punjab being Kashmir and Himachal Pradesh and descends to lower elevations outside the breeding season (Kennerley & Pearson 2010). In this note, we report the sighting of a Brownish-flanked Bush Warbler from Hoshiarpur District, Punjab, India.

On 14 February 2025 at 0943 h, PSA spotted a drab looking small bird while birding around village Barapur (31.2266° N, 76.2258° E, 372 m), on Barapur-Kunail road, in the Shivalik Hills, near Garhshankar, Hoshiarpur District, Punjab. It kept moving in the lower branches of a bush,

remaining under thick cover and not offering a good view. It was identified as Brownish-flanked Bush Warbler from one of the photographs that showed fairly indistinct supercilium, most conspicuous in front of the eye, bordered below by a short dark eye-stripe, again best defined in front of the eye; dull cold olive-brown crown, nape and mantle; dull warm brown edges to the primaries and secondaries; and the rather greyer and darker breast sides (Kennerley & Pearson 2010).

From Punjab and the state capital Chandigarh, only four previous records of Brownish-flanked Bush Warbler are there. From Chandigarh, there is one skin in BNHS, marked as *Cettia montana pallida* (Brooks) (Kashmir) Pale Strongfooted Bush Warbler (Abdulali 1986).

There are two records from Harike Wildlife Sanctuary, from the late 1990s (Robson 1998, 1999) and one sighting from 2023 from Nara, Hoshiarpur District, Punjab (Malik 2023). From Chandigarh, there is a recent record on eBird (Dhillon 2021). Other than these, we were not able to find any other record from any other source. Therefore, the present sighting is significant as it is only the second photographic record of the species from Punjab, outside of Chandigarh.

As per Kennerley & Pearson (2010), “Birds that winter at lower elevations occur on low hills and hillsides covered with dense grass and scattered bushes, however, they can be found in a wide range of scrub and grassland habitats. Shy and skulking, it usually remains low in thick cover where it can be extremely difficult to view, typically affording only brief glimpses. Occasionally, it flies between bushes but rarely pauses to permit good views. It keeps cocking its tail and drooping its wings along the flanks”. Calls include a soft repeated ‘chupp’, a harsh ‘tchuk’ or ‘pick’, and a short metallic ‘tit’ or ‘trrt’ (Rasmussen & Anderton 2012). Following the calls can help to follow its movement through thick undergrowth. Therefore, the bird enthusiasts who wish to record this bird in the state/region, should keep the habitat and behaviour in mind.

References

- Abdulali, H. (1986). A catalogue of the birds in the collection of Bombay Natural History Society-30 Muscicapidae (*Sylviinae*). Journal of the Bombay Natural History Society 83(1): 130–63.
- Dhillon, R. (2021). Brownish-flanked Bush Warbler. <https://ebird.org/checklist/S85374699>. Accessed on 28.v.2025.
- Grimmett, R. et al. (2011). Birds of the Indian Subcontinent. 2nd ed. Oxford University Press & Christopher Helm, London, 528 pp.
- Kennerley, P. & D. Pearson (2010). Reed and Bush Warblers. Christopher Helm, London, 712 pp.
- Malik, A. (2023). Brownish-flanked Bush Warbler. <https://ebird.org/checklist/S153334104>. Accessed on 31.v.2025.
- Rasmussen, P.C. & J.C. Anderton (2012). Birds of South Asia: The Ripley Guide. 2nd ed. Smithsonian Institution and Lynx Edicions, Washington, D.C. and Barcelona: 2 vols. 378 & 683 pp.
- Robson, C. (1998). From the Field: India. Oriental Bird Club Bulletin 27: 61–66.
- Robson, C. (1999). India. Oriental Bird Club Bulletin 29: 51–52.

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