ZOO'S PRINT

Communicating science for conservation

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40 zooreach Zoo Outreach Organisation years

Cover photo: Recorded by Sriram Murali of Wild and Dark Earth, an NGO that conserves nocturnal habitats in India. wildanddarkorg@gmail.com

Human Wildlife Coexistence HWCx Street Plays in THADAM villages of Tamil Nadu

Human-Wildlife Negative Interactions (HWNI) between humans and wild animals is a common issue around the world as human populations continue to expand into areas originally occupied by wildlife. This leads to habitat loss and fragmentation and force wildlife to live in closer proximity to human settlements. The consequence of negative interactions includes crop destruction, reduced agricultural productivity, competition for grazing lands and water supply, livestock predation, injury and death to human, damage to infrastructure, and increased risk of disease transmission among wildlife and livestock. There is no permanent solution for HWNI; it's possible to significantly reduce its negative impacts through effective management and a collaborative approach. This involves understanding the underlying causes, implementing integrated solutions, and involving local communities as active participants. By focusing on prevention, mitigation, and coexistence strategies, it's possible to create a more harmonious relationship between humans and wildlife. Tamil Nadu, like many other states in India, faces a range of HWNIs. Some of the common negative interactions in Tamil Nadu include Asian Elephant, Indian Leopard, Indian Tiger, Sloth Bear, Gaur, and Wild Boar. According to Advanced Institute for Wildlife Conservation, Tamil Nadu report, from 2016 to 2021, 13,318 HWNI incidents were reported with the highest concentration in the Hosur division (4,408 incidents) followed by the Coimbatore division (1,996 incidents). Elephants emerged as a predominant contributor to negative interactions, closely followed by Wild Boar. An in-depth analysis exposed crop damage as the prevailing issue, outweighing human casualties and livestock predation.

The management of HWNI has prompted a range of strategies employed by both the forest department and local farmers. The existing measures encompass cloth fencing, solar fencing, elephant proof trenches, driveaway the problematic elephants using kumkis, early warning systems, establishment of new PA's, removal by capturing, translocation, compensation, and awareness programmes.

To make aware the community about elephant's behaviour, negative interactions, and coexistence,

Zooreach Activity Update

Zoo Outreach Organisation has been conducting awareness programmes on Human-Elephant Coexistence (HECx) since 2008 in most of the elephant range countries of South and Southeast Asia. The programme includes Teaching of Trainers (ToT) programmes, school awareness programmes, HECx awareness street plays for community people, sensitization programmes for journalists, line department staff and forest department staff.

As Tamil Nadu Forest Department is aware of our HECx programmes, recently one of their wings the Tamil Nadu Biodiversity Conservation and Greening Project for Climate Change Response (TBGPCCR) approached us to conduct 95 Human-Wildlife Coexistence Street plays in THADAM (Path) villages of nine forest divisions of Tamil Nadu. It is a community network involving various stakeholders including farmers, villagers, members of non-governmental organisations and field staff of the forest department where human-elephant negative interactions is common problem and to keep people informed about wild elephants that stray from forest and ensure their safety. Under the initiative each forest range has started a WhatsApp group to share information on the movement of elephants with the aim to avoid human casualties if provide real time information on the movement of elephants outside forests.

The objective of the Human-Wildlife Coexistence Street plays to educate the community living near the forest areas to improve their attitudes towards wild animals to avoid confrontation and negative interactions whenever possible. The method is to reach out to the THADAM village communities in HWNI areas and to create awareness on HWNI while promoting human-wildlife coexistence. Over the years, Zooreach has successfully tried a methodology to introduce and teach about Human-Elephant Coexistence through street plays. This aims at reaching a wide range of audience from children to adult of both literate and non-literate audience who live in HENI areas. The approach is to conduct street plays in selected villages of conflict areas at different times to teach about wildlife conflict prevention and mitigation.

The villagers were approached through the successful method using street plays “Theru Nadagam” which is culturally associated with the Tamil communities. The Zooreach’s recent projects utilizing street play to reach out the local people to promote HECx has been successful and hence we adapted this method in this TBGPCCR project.

A team of professional street players has been identified already, and they were utilized in our previous projects. SWORD, an NGO located in Krishnagiri District of Tamil Nadu has a team of folklore artists called ‘Adhiyaman Kalaikuzhu’ who performed the street plays. The target groups are thoroughly informed through street plays about

HWNI and the need for HWCx. They were also be familiar with a variety of ‘dos’ and ‘don’ts’ relative to wildlife interactions from an individual’s point of view of protect himself and his family from wild animals. This was practical advice for people who are


HWC - AWARENES
TBGP

Zooreach Activity Update

actually in danger. The community is provided with a pamphlet which has detailed dos and don'ts in forest fringe areas.

The street plays were started on 24 February at Athinatham village of Urigam forest range of Hosur forest division and concluded at Vadakaunchi village of Perumpallam forest range of Kodaikanal forest division on 16 April 2025. It took 45 days and travelled up to 5500 kms to achieve the target.

The 95 street plays were held in nine forest divisions: Hosur (15 nos.), Dharmapuri (10 nos.), Sathyamangalam (10 nos.), Hasanur (10 nos.), Gudalur (17 nos.), Nilgiris (9 nos.), Coimbatore (16 nos.), Pollachi-ATR (6 nos.), and Kodaikanal (2 nos.). In these forest divisions, 44 forest ranges were covered: Urigam, Anchetty, Dhenkanikottai, Jawalagiri, Hosur, Royakottai, Krishnagiri (Hosur FD); Hogenakkal, Pennagaram, Palacode (Dharmapuri FD); Vilamundi, Sathyamangalam, T.N. Palayam, Kadambur, Thalamalai, Bhavanisagar (Sathyamangalam FD); Jeerahalli, Thalavadi, Hasanur, Germalam (Hasanur FD); O' Valley, Gudalur, Pandalur, Nadugani, Cherambadi, Bithergadu (Gudalur FD); Kilkotagiri, Kattabettu, Kotagiri, Kundah, Coonoor, Udhagai North and Udhagai South (Nilgiris FD); Sirumugai, Mettupalayam, Karamadai, Periyanaickenpalayam, Coimbatore, Bolampatti, Madukarai (Coimbatore FD); Valparai, Manambolly (Pollachi ATR FD), and Palani, Perumpallam (Kodaikanal FD).

Through this programme we targeted about 10,000 community people living in ninety five (95) THADAM villages which falls under forty four (44) forest ranges of nine (9) forest divisions of Tamil Nadu.

Acknowledgements:

My deep appreciation goes to Mr. I. Anwardeen, IFS, PCCF & Project Director, TBGPCCR for the funding support. I extend my heartfelt gratitude to Mr. Muhammed Shabab, IFS, CF (Wildlife) & Project Director (Biodiversity) TBGPCCR; Mr. Bakan Jagadish Sudhakar, IFS, Wildlife Warden, Hosur; Mr. K. Rajangam, IFS, District Forest Officer, Dharmapuri; Mr. Kulal Yogesh Vilas, IFS, Deputy Director, Sathyamangalam, STR; Mr. K. Sudhagar, IFS, Deputy Director, Hasanur, STR; Mr. N. Vengatesh Prabhu, IFS, District Forest Officer, Gudalur; Mr. S. Gowtham, IFS, District Forest Officer, Nilgiris; Mr. N. Jayaraj, IFS, District Forest Officer, Coimbatore; Mr. Devendra Kumar Meena, IFS, Deputy Director, ATR, Pollachi; Mr. Yogesh Kumar Meena, IFS, District Forest Officer / Wildlife Warden, Kodaikanal for their support. My thanks to all Assistant Conservator of Forests, Forest Range Officers, Foresters, Watchers, Guards and Anti-Poaching Watchers for their assistance in the field.

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ONE OCEAN, ONE FUTURE, ONE TEACHER AT A TIME: MAGIC OF THE OCEAN WORKSHOP IN KERALA

Dr. Monta Ray here again—the official mascot of 1OCEAN (Ocean Conservation Education and Action Network) initiative of Zooreach, endorsed by the UN Ocean Decade!

I've just returned from a fascinating adventure with the 1OCEAN team—this time, we set our sights on the beautiful shores of Kerala. Our Magic of the Ocean Workshop, held in collaboration with the Department of Education and the Department of Aquatic Biology and Fisheries, University of Kerala, was an unforgettable experience.

Supported by the National Geographic Society, this three-day hands-on workshop wasn't just another event—it became a story I'll be flipping back to in my tide journal for a long, long time. From passionate educators to vibrant discussions and inspiring activities, it was about diving deep into ocean literacy.

Day 1: Setting the Tide: A Collaborative Beginning to Ocean Literacy

The day began with the warm inaugural session that set the tone for everything to follow. The inaugural session started with a warm welcome by Dr. Divya C. Senan, Assistant Professor, Department of Education, University of Kerala. This was followed by the presidential address by Dr. T.V. Bindu, Associate Professor & Head of the Department of Education,

Dr. Divya C. Senan giving the welcome speech

who emphasized the importance of ocean literacy in classrooms. Dr. S.M. Raffi, Associate Professor, Department of Aquatic Biology & Fisheries, delivered the inaugural address linking ocean, sustainability, and education. Finally, Ms. Tandrali Baruah, Educator, Zoo Outreach Organisation, shared the vision behind the workshop and the goal of co-creating ocean awareness with teachers.

Inaguration of the workshop

This was followed by participants tying rakhis to one another, symbolizing a pledge to protect the ocean like siblings who have grown up beside it, followed by a quick round of introductions.

Rakhi tying ceremony

Before diving into the sessions, participants completed a pre-workshop attitude survey to reflect on their understanding and beliefs about ocean literacy. This provided a helpful

Pre-assessment attitude survey

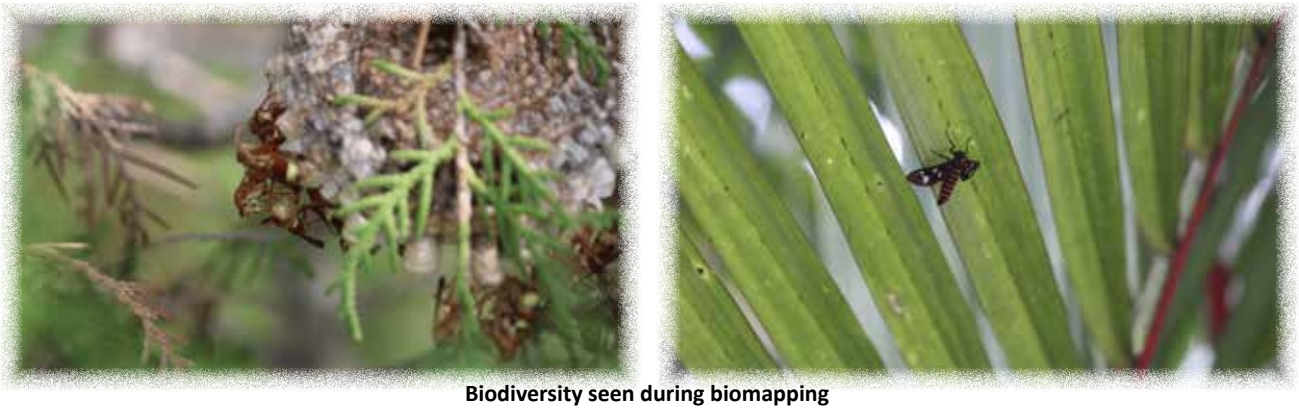
baseline for the learning journey we were about to begin. One of the statements explored was: "You believe you can make a difference to the climate crisis if you teach about the ocean". While several participants selected "Happy", showing a strong belief in their potential to influence change, others responded "Neutral", expressing doubts about its practicality in the current school system. Some shared that if climate education is framed only as an academic subject, students may treat it as another topic to score marks in rather than something deeply relevant. Taking these points into account, we decided to conduct the same assessment at the end of the workshop to see how participants' perspectives had evolved.

Soon, we dove into the first principle of ocean literacy: Earth has one big ocean with many features. The participants engaged in digital ocean-themed games—Salt it Right—to explore the properties of ocean water. Their eagerness to choose the correct answers turned the room into a lively and competitive space..

This was followed by Dance Beneath Our Feet activity where they understood the movement of tectonic plates and how these processes shape our ocean floor. The day progressed with a session on different marine habitats by Usha Ravindra, culminating in an introduction to Bio Mapping as a tool to observe and document these habitats.

To demonstrate how Bio Mapping could be applied, we used a reference point just outside the Department of Aquatic Biology. Armed with charts, pencils, and transparent sheets, participants filled the chart paper with colorful impressions of the area and biodiversity, drawing from both observation and creativity.

Importantly, after each activity, participants assessed the experience and collaborated with us to co-create and refine the activities—offering suggestions, sharing insights, and adapting them to better suit their own classrooms. This made the learning not just participatory, but truly collaborative.



Biodiversity seen during biomapping

Biomapping

Day 2: Diving Deeper – Mapping, Migration, and the Web of Life

The second day picked up right where we left off—Bio Mapping once again took center stage as participants layered transparent sheets over the same area map, adding observations on biodiversity and changes over time.

Next came a session on the Anatomy of the Indian Ocean, where we delved into the remarkable underwater features that shape the ocean—ridges, trenches, seamounts. To bring this to life, participants took part in a bathymetry activity to understand how scientists map the ocean floor. Divided into two groups, they used a stick method to simulate depth measurements and created their own interpretations of what the seabed might look like. The result? Two uniquely imagined bathymetric maps—each a reflection of how perspective and data interpretation can vary even with the same tools. This sparked lively discussions on data points, math, scientific observation and precision.

Before heading to lunch, we played a round of Ocean Pictionary—with a twist! For every correct answer, teams helped a Hilsa fish "migrate" from one location to another, turning the game into a playful blend of marine vocabulary and migration.

Bathymetry activity

Bathymetry activity map group 1 & 2

Post-lunch, we played Jenga and explored how the game can be adapted to learn about food chains and the impact of individual actions. The activity highlighted that it's not just one person, but everyone who plays a role—and that each action, no matter how small, can affect the balance of the whole system.

To bring the idea of ocean connectivity and migration to life, participants then took part in the Ocean Puzzle Trails activity. They followed the migration routes of marine species, solved clues, and pieced together how these journeys reveal the ocean's interconnected nature

Following that, participants delved into the Dichotomous Key activity, where they learned how to identify organisms based on a series of guided choices—just like scientists do when classifying life forms. This hands-on exercise encouraged careful observation, critical thinking, and attention to details.

Building on that foundation, the day wrapped up with the Tree of Life activity led by Kritika P., which illustrated the interconnectedness of all living beings through evolutionary relationships.

Ocean Puzzle Trails game

Jenga game

Ocean Pictionary game

Day 3: Transforming Learning into Action

We began the final day with a striking activity called Stripes Tell Stories. Inspired by Professor Ed Hawkins' #ShowYourStripes. Participants created a colorful flag where each stripe represented India's annual temperature from 1961 to 2016.

Blue stripes marked cooler years, while red showed warmer ones, with the color intensity reflecting how hot or cold each year was. As the stripes came together, the cloth became a powerful visual timeline of climate change—telling a story of rising temperatures through color instead of words.

The participants then got down to business. The teachers then co-created their own activities, drawing inspiration from the workshop and connecting them to subjects they teach or are passionate about. One particularly creative idea emerged from a teacher who explored how English and Art could be beautifully blended—each group of students would receive a different line from a poem, which they would then illustrate. The lines and illustrations would be combined to form a collaborative visual poem, bringing both language and creativity to life.

To complete the loop of learning, we conducted the same attitude survey at the end of the workshop. This time, a shift was evident—not just in the responses, but in the confidence that radiated from the participants. All of them selected "Happy" for every statement, including the one that had previously raised doubts: "You believe you can make a difference to the climate crisis if you teach about the ocean". Concerns that once hovered around practicality, student engagement, or relevance had been replaced with newfound clarity and hope. The teachers after the workshop felt equipped, inspired, and excited to make ocean literacy a vibrant part of their classrooms.

After the post-assessment, reflection circle, and a warm thank-you session brought the workshop to a close. There were smiles all around, group photos, and heartfelt exchanges of appreciation.

Reflections from the workshop

What stood out the most? The joy of co-creation. The shared sense of discovery. And most importantly, the collective realization that ocean literacy doesn't have to be a faraway idea—it can begin right here, in classrooms, in stories, in games, and in the tide pools outside our homes.

The Magic of the Ocean workshop in Kerala didn't just teach—it inspired. And if the waves we stirred over these three days are any sign, the ripples are just beginning to spread.

To conclude, this may have been the end of our workshop in Kerala, but it's just the beginning of a shared journey—one ocean, one future, one teacher at a time.

ACKNOWLEDGEMENT

The success of the Magic of the Ocean workshop in Kerala was made possible through the collaboration, dedication, and support of many individuals and institutions.Heartfelt appreciation goes to Dr. Divya C. Senan from the Department of Education, University of Kerala, whose thoughtful coordination and warm leadership helped us conduct the workshop and create a welcoming space for educators to explore, learn, and contribute. Special thanks to Dr. Bijukumar and Dr. S.M. Raffi from the Department of Aquatic Biology and Fisheries for championing the importance of marine education and offering their unwavering support throughout the workshop. We are deeply grateful to the National Geographic Society for their generous funding and belief in this initiative. Their support has not only made this workshop possible but is helping spark a larger movement for ocean literacy across India. And finally, a warm thanks to all the participating teachers. This journey would not have been the same without them.

Tandrali Baruah, Educator, Zoo Outreach Organisation

Zooreach Activity Update

Students analyzing the area for biomapping

Stripes tell stories too flag

Teachers presenting their ideas to the class

Tree of life game

Climate change flag

Perceiving perceptions

The Chamba Valley
© Amrin Ansari

Located in the western Himalaya, Chamba is one of the most picturesque valleys in Himachal Pradesh. It is home to a wide range of flora and fauna, including majestic species like Asiatic Black Bears Ursus thibetanus and the Chamba Sacred Langurs Semnopithecus ajax. The landscape bears a mosaic of terraced farmlands and traditional villages within thick Deodar and Oak forests.

The people of the Chamba valley mostly rely on agricultural practices for their livelihood, and most of them live a forest-dependent life. People mostly grow Maize, Mustard, and Jowar alongside seasonal vegetables suited for the terrain. In addition, a lot of the farmers also have fruit orchards producing Apples, Plums, Apricots, and Walnuts. Lately, people in the region have reported to spot bears more often on their farms or near their villages. These encounters are slowly becoming a part of their everyday life, leading to human–bear negative interactions.

To understand the drivers behind human–bear negative interactions, we conducted a perception study using a semi-structured questionnaire with open-ended questions. This approach allowed respondents to share their experiences and perspectives in their own words, offering deeper insights into the issue. The questions were asked mostly in Hindi and occasionally in the Chambiyali language to ensure that the participants expressed themselves freely.

The study was carried out in 31 villages with 119 different participants. A majority of the participants raised concerns regarding crop depredation by the bears. Respondents reported that the bear activity in croplands

Understanding perceptions. © Vishal Ahuja

increases significantly during the monsoon when the maize crop ripens. Depredation of the crops and fruit orchards not only affects the communities economically but are also intensifying negative interactions in the landscape. 87.39% (104) of the participants agreed to be directly dependent on the forests and accepted that they carry out collection of NTFPs along with grazing activities, remaining 12.60% (15) claimed that they do not rely on forests for their sustenance at all.

On 23 March 2024, our team organised a camera trap training workshop for the RRT team members of the Himachal Pradesh Forest Department.

The Chamba Forest Division had provided our team with six camera traps, which were deployed in different places surrounding the Khajjiar-Kalatop Wildlife Sanctuary at random to collect opportunistic data. Data collection was carried out from the month of March to November 2024. As the winter approached, the traps were removed and handed over to the forest department.

A total of 12 different species were documented in the study area, including 11 mammals and 1 bird species, reflecting the rich biodiversity of the Chamba landscape.

Among these, the majestic Asiatic Black Bear stood out with multiple sightings

HRP team demonstrating camera traps ©Amrin Ansari

Asiatic Black Bear

recorded during the study period. Other species include the elusive Yellow-throated Marten Martes flavigula, Jungle Cat Felis chaus, and Leopard Cat Prionailurus bengalensis. Kalij Pheasant Lophura leucomelanos was often sighted in pairs.

The frequent documentation of bears outside protected areas points to the increasing overlap between wildlife habitats and human settlements and justifies the reasons behind increasing negative interactions in the landscape. Hence, there is an urgent need for research and conservation actions for a better understanding of the human–bear dynamics and ensuring coexistence.

Acknowledgement
Grateful acknowledgements are made to the Chamba Forest Department for providing the camera traps. I also extend heartfelt thanks to the team at the Himalayan Restoration Project for their constant support and collaboration.

Amrin Ansari, Himalayan Restoration Project, Zoo Outreach Organisation, Chamba, Himachal Pradesh

Zooreach Activity Update

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THE Himalayan Restoration Project

HLP Himalayan Langur Project

Chamba, Himachal Pradesh, western Himalaya

Ecologically Restoring Landscapes, Species, and Livelihoods

The Himalayan Restoration Project restores the extremely neglected, poorly-known, deteriorated broad-leaf oak, and pine forest habitat in Chamba, western Himalaya. This is a long term project in partnership with local communities in 28 villages who are interested in growing native vegetation on their non-arable farmland to support local wildlife such as langurs, black bears, macaques, and porcupines and reduce crop raiding and mitigate climate crisis.

Himalayan Restoration Project was formally inaugurated on the World Forestry Day on 21 March 2024 where we had a restoration drive with the participation of high school students in a government school under the National Social Service scheme.

Activities April 2024-March 2025

- 1.5 ha of degraded forest land restored with 1500+ saplings of 10 native species.
- 5000+ saplings of 13 native species germinated for 2025 restoration (*Quercus leucotrichophora, Prunus cerasoides, Juglansregia, Melia azedarach, Grewia optiva, Cedrus deodara, Aesculus indica, Morus serrata, Populus ciliata, Pyrus pashia, Punica granatum, Sapindus mukorossi)* in the community led nursery.
- We have educated 700+ students & youth on coexistence & restoration. 100+ students joined the group in restoration.
- We have trained 100+ indigenous women on eco-based adaptations and ecologically sustainable livelihood options. Women have been trained in nursery management, para taxonomy, plant identification, and germination skills.
- We have hired 3 local & indigenous community members as local ambassadors to help in various aspects of the project.
- The team has also been working on understanding the distribution and population of Himalayan black bears in the region with the forest department and upskilling the rangers on the same.

Trisa Bhattacharjee, Coordinator,
Himalayan Restoration Project, Zoo Outreach Organisation

The Himalayan Restoration Project is the only UN recognized Global Landscape Forum Chapter: GLFx Himachal

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THE Himalayan Restoration Project

HLP
Himalayan Langur Project

1OCEAN CITSCI WITH CAS

As part of the WCT-Biodiversity, Ecosystems and Endangered Species Grants Programme (WCT-BEES Grants) project titled, 'Conservation of Critically Endangered Hammerhead sharks of India via Participatory Science', a two-day training workshop was conducted for 37 Marine biology, BFSc and MFSc students of Centre for Advanced Studies (CAS), Annamalai University, Parangipettai, Tamil Nadu on 3 and 4 April 2025.

The workshop focused on training the coastal youth (fisheries/biology students) to document sharks or bycatch trade in their nearest fishing harbour using the citizen science website developed by 1 OCEAN team. The topics were Status of sharks in India and the threats; Photographic guidelines that help identify sharks for citizen science; Data gaps to address their conservation; and how citizen science helps in conservation followed by introduction of **1OCEAN Citizen Science website**, and how to use it.

The students were taken to the Annankovil and Mudasol Odai fishing landing sites for a practical session on how to observe the proceedings at landing sites, record fish catches, interact with fishers and to instill conservation thinking. The training session was given by Usha Ravindra (Conservationist at Zooreach and Project lead). The program was successfully run thanks to support from the University faculty, Dr. Vijayanand and Zooreach team member, Kritika P.

Wildlife Conservation Trust

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Usha Ravindra, Research Assistant at 1OCEAN & SAsISG, Zoo Outreach Organisation.

Citizen Science

Community | Research | Learn | Share

Zooreach Activity Update

Training session on how to use citizen science website developed by 1OCEAN team for fish landings at harbours by Usha Ravindra (© Kritika P.)

Students getting trained in photographic guidelines that help in shark identification at Mudasal Odai fish Landing centre on 4 April 2025. (© Usha Ravindra)

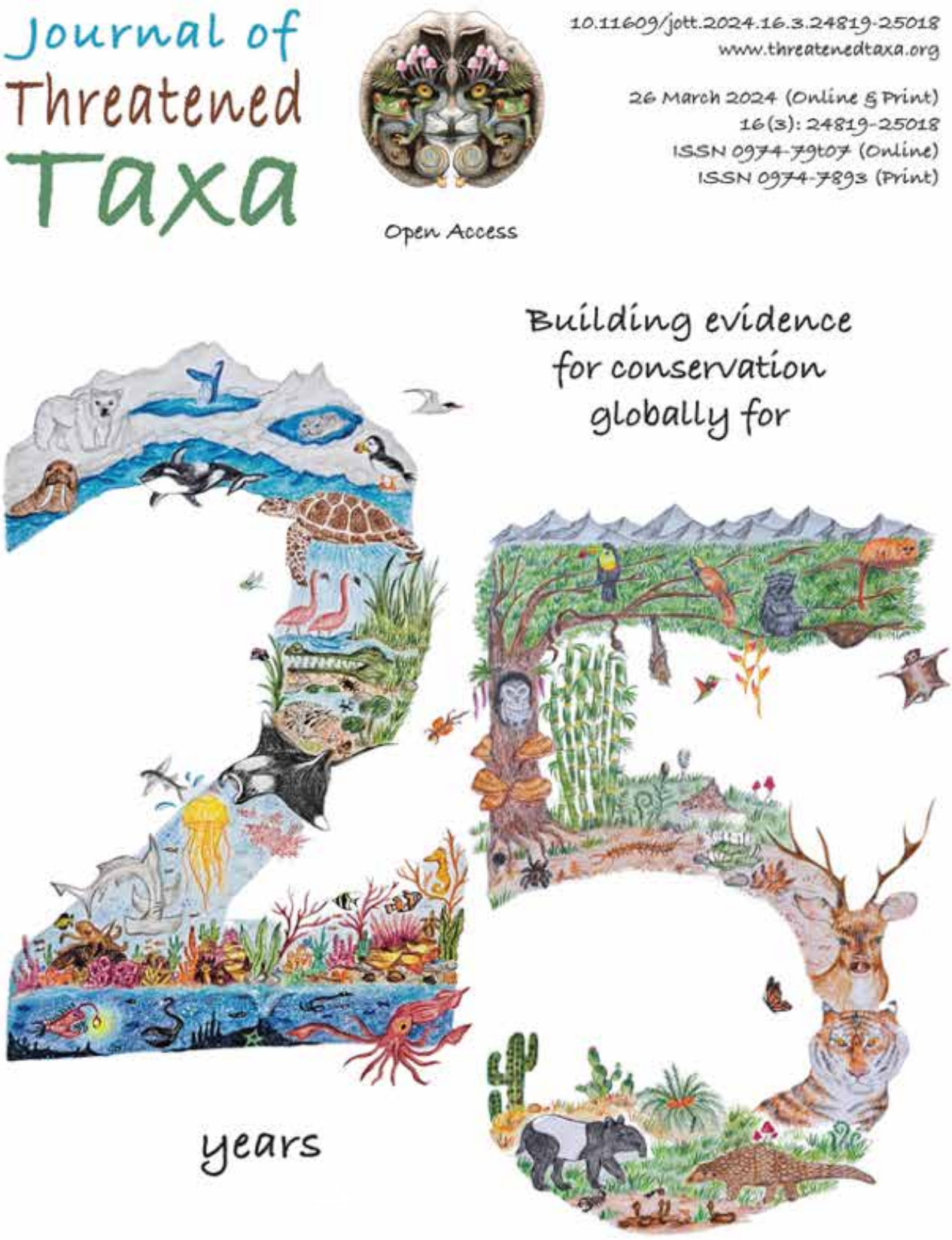
Dr. Vijayanand, Assistant Professor at CAS, assisting the workshop proceedings. (© Usha Ravindra)

Playing predator (sharks) & prey game coupled with impacts of trawling on the food chain. (© Kritika P.)

Marine life landings at Mudasal Odai fish landing centre on 4 April 2025. (© Usha Ravindra)

Students recording fish composition (Ray finned fish, Bill fishes, and Tunas) at Annan Kovil fish landing centre on 4 April 2025. (© Usha Ravindra)

Students interacting with fishers at Mudasal Odai fish landing centre on 4 April 2025. (© Usha Ravindra)



For a quarter of a century, the **Journal of Threatened Taxa (JoTT)** has been serving a critical role in conservation. Every month, without fail, the pages of this open access online publication fill up steadily with words that describe the wonders of the natural world — as observations, scientific experiments, or opinions — serving over 120,000 readers across the world.

Zooreach/WILD Activity Update

The mission of the **Journal of Threatened Taxa <https://threatenedtaxa.org/>** is to serve the biodiversity community of researchers and conservationists by providing quick & easy access to peer-reviewed publications critical to their respective fields for conservation and/or for academic research & interest.

- JoTT is established to build evidence for conservation and allied fields including and not restricted to taxonomy, ecology, disease, surveys, assessments, management, etc. to the wildlife community, scientists, academics, educators, policy makers, managers, and the general public.

- JoTT charges a very reasonable article processing fee to publish. It follows the 'Gold Open Access' standards where readers are not charged for subscription. There are no page charges or any other hidden charges apart from the article processing charge.

- JoTT strives to maintain high scientific standards in this regard, encourages a broad stream of subject areas, authors, global participation, and publications without bias or prejudice.

- JoTT does not promote exclusivity in its choice of publications or pursue popular practices to build up the journal marketing benchmark of higher impact.

- JoTT does not select manuscripts to publish with marketing intensions at the cost of invaluable data to science.

- JoTT mentors new entrants and others in publishing scientific articles of high standard through the participation of several volunteer scientists (for peer review & editing) from around the world.

- JoTT helps with English language editing of articles, to those in need of such assistance and from non-native English speaking countries, to bring it to standards of adequate communication.

JoTT is published on the 26th of every month. As of 01 April 2025, 330 issues (ZPJ & JoTT), almost 29,700 pages, and 4,157 articles (965 in ZPJ and 3,192 in JoTT) have been published.

Publication data of 2024 is given below:

Volume 16 | 12 issues (January–December) | 1,880 pages | 230 publications.

Zooreach/WILD Activity Update

Issue	Published	No. of pages	No. of publications	Articles/ Communications	Short Communications	Notes
Vol. 16 No. 12 (2024)	26-12-2024	144	19	10	6	3
Vol. 16 No. 11 (2024)	26-11-2024	124	15	9	2	4
Vol. 16 No. 10 (2024)	26-10-2024	112	18	8	3	7
Vol. 16 No. 9 (2024)	26-09-2024	160	19	13	2	4
Vol. 16 No. 8 (2024)	26-08-2024	152	17	14	2	1
Vol. 16 No. 7 (2024)	26-07-2024	144	20	11	4	5
Vol. 16 No. 6 (2024)	26-06-2024	212	25	16	4	5
Vol. 16 No. 5 (2024)	26-05-2024	164	21	13	3	5
Vol. 16 No. 4 (2024)	26-04-2024	100	15	8	2	5
Vol. 16 No. 3 (2024)	26-03-2024	200	25	16	2	7
Vol. 16 No. 2 (2024)	26-02-2024	204	19	15	3	1
Vol. 16 No. 1 (2024)	26-01-2024	164	17	13	2	2
12 issues		**1,880**	**230**	**146**	**35**	**49**

WILD
WILDLIFE INFORMATION LIAISON DEVELOPMENT

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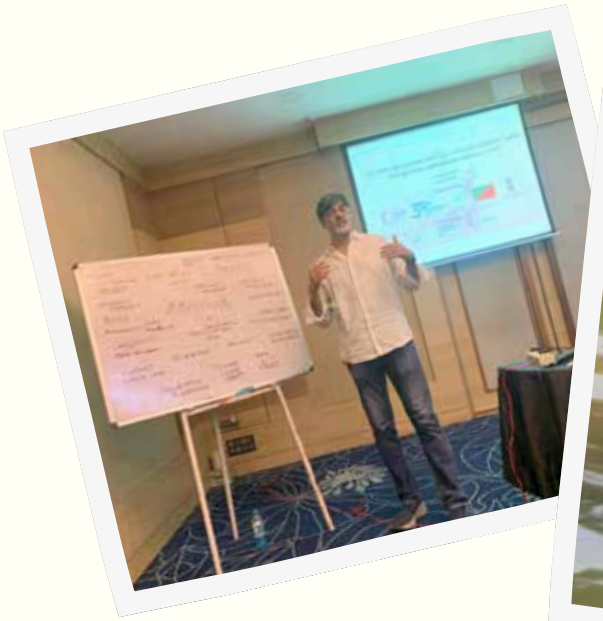
B. Ravichandran, Wildlife Information Liaison Development / Zoo Outreach Organisation
3A2 Varadharajulu Nagar, FCI Road, Ganapathy, Coimbatore, Tamil Nadu 641006, India.

Planning for the Assam Roofed Turtle

Freshwater species are some of the most threatened species groups. Northeastern India boasts of 21 species of turtles and tortoises out of the 29 species found in India. Among these, 17 species are found in some hot spots like Kaziranga in Assam; one such highly threatened species is the Assam Roofed Turtle Pangshura sylhetensis along with the other three Pangshuraspecies. These threatened species have few sporadic studies and are in urgent need for conservation action. To address this concern Sanjay Molur from the Conservation Planning Specialist Group South Asia RRC of SSC/IUCN and Zoo Outreach Organisation facilitated the conservation planning workshop for the Assam Roofed Turtle from 02–05 April 2025 in Guwahati, Assam at the request of Aaranyak and the Assam Forest Department. The workshop involved 25 participants including members of the forest department, subject experts, young researchers, and academicians.

The workshop started with introduction to the species in focus - the Assam Roofed Turtle, introduction to the Conservation Planning process introduction, and went ahead to the visioning process by dividing into working groups. The rules for working groups were also mentioned and clarified. The second day started with the finalization of the vision for the conservation of the Assam Roofed Turtle. The second half was spent working out the three major aspects identified through the mind map conducted on the first day — 1. Threats, 2. Habitat management, 3. Research, and 4. Education, outreach, & capacity building.



Zooreach Activity Update

Based on the vision and discussions held in the working groups, different aspects to put the plan into action were noted such as roles, responsibilities, deadlines. The whole exercise was beneficial for the Assam Roofed Turtle as it is going to help save other freshwater turtles that use similar habitats in Assam. The conservation plan also encourages collaborative working of different stakeholder groups with assigned tasks making conservation action more efficient and synergized.

Aaranyak

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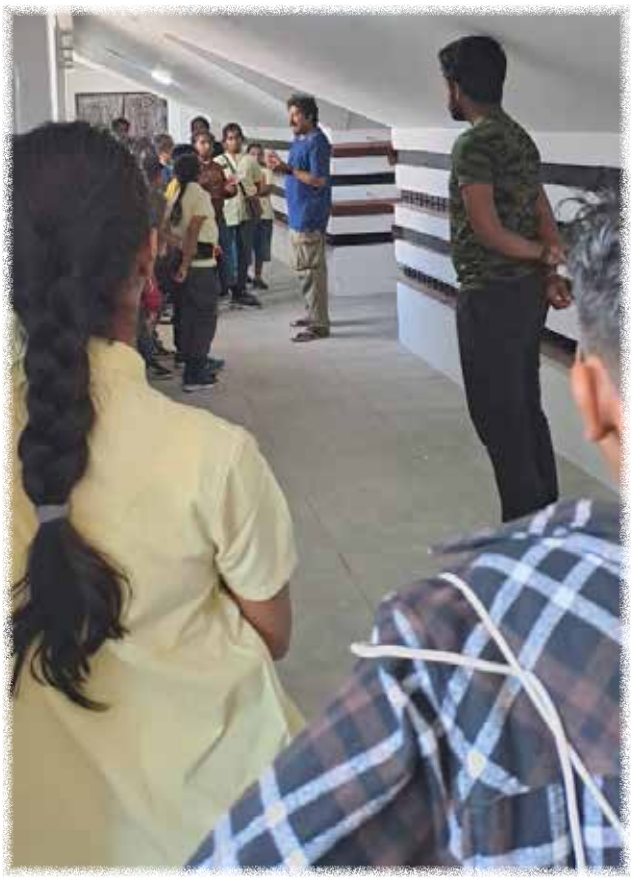
Learning Beyond Classrooms: a 3-day expedition into the wild and cosmos at Mudumalai

After a few expeditions with the Mango education team, I joined another 3-days journey- this time to Mudumalai, along with the grade 4 and 5 students of Samskaara Academy. Although I was tired as I had just returned from a previous expedition of visiting communities along rivers in the Western Ghats, I was enthusiastic to share and gain knowledge from the students and the place. With this enthusiasm, the journey to Mudumalai began.

Obuli Chandran and Sricharan from the Mango Education team, and I representing Zoo Outreach Organisation as a wildlife educator, started our journey at around 5 am on 24/03/2025. Sricharan and I joined the students on their buses, deciding it would be best to travel with them to build a stronger rapport, something especially important when working with younger students like those in grades 4 and 5. We each joined different buses to engage with the children more personally.

Along the way, I began interacting with the students, helping them feel more comfortable and excited about the journey. We stopped for breakfast in Ooty and visited Cosmic Ray Laboratory, where we had a session with experts and had a lot of discussion. The students were very much interested in knowing more and learn about space and light. After a wonderful session, we proceeded to Mudumalai and arrived at the Tiger Track Resort around 2:30 pm. The students were very hungry and tired due to the long journey. So after lunch, we let them relax and asked them to gather at 5:30 pm. From our treehouse room at the resort, we spotted three Malabar Giant Squirrels, a herd of Spotted Deer, Grey Junglefowl, and Grey Langurs—all visible right from the balcony. It was a magical moment and one of the highlights



of the trip. In the evening, I led a brief session on birdwatching—how to observe and identify birds—and then facilitated several interactive educational games like 'Spots and Stripes', 'Bat and Mosquito', and other observation-based activities. The students enjoyed themselves while learning through game. As night fell, Obuli Chandran conducted a stargazing session using a telescope. The students were thrilled to observe planets, constellations, and stars. As the night progressed, the sky grew even clearer, allowing us to see celestial objects with the naked eye against the deep black sky.

During the walk, we encountered 10–15 Malabar Giant Squirrels, numerous species of birds, and many butterflies. Our trail ended at a peaceful stream, where we spent some time relaxing and enjoying the serenity of nature. In the afternoon, around 2:30 PM, we headed out on a safari in the Mudumalai Tiger Reserve. The experience was incredible—we saw a herd of wild elephants with calves from just 15 meters away! Other sightings included Spotted Deer, Sambar

The next morning, we woke up around 7 for birding. Although the weather was misty and cloudy at first, it soon began to clear, and the forest came alive with bird calls. The students and I observed and identified around 20 bird species in the area. After breakfast, we set out on a nature walk through the forest behind the resort.

Koshik V Rao
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Deer, Indian Mongoose, Peafowl, Indian Roller, Changeable Hawk-Eagle, and, as we neared the end of the safari, a Red-headed Vulture flew low over us—an unforgettable finale. We then visited the Theppakadu Elephant Camp, the oldest in Asia. This camp is known for its trained elephants, or 'Kumkis', which assist in mitigating human-wildlife interactions, drive wild elephants away from interphase zones, support forest patrolling, wildlife rescue, eco-tourism, and education. We interacted with a forest officer who shared insights into the camp's history, the elephants' routines, and their vital role in conservation. After this memorable visit, we returned to the resort. Following some rest, we had a short space observation session and dinner. The students ended the night enjoying a campfire and soft music, bonding and sharing stories. On the final day, we travelled to Ooty, where the students did some shopping. After lunch, we returned to Coimbatore.

This Mudumalai expedition was one of my most cherished journeys, where I learned, observed, and shared knowledge about wildlife, conservation, awareness, and the importance of reconnecting with nature. It was a meaningful experience that continues to shape my growth as a conservation educator.

Zooreach completes a year as a MAHE research centre

Zoo Outreach Organisation Trust is a Research Centre affiliated with the Manipal Academy of Higher Education (MAHE) since January 2024. In the past one year four students are enrolled for PhD in 'Conservation Action'.

The vision of the organization's doctoral program is to empower the youth to strengthen their actions in conservation through science-backed research. The program is in its initial stages, and we have two eminent conservationists/ researchers accepting students and spear-heading the program—Dr Sanjay Molur and Dr. Bhargavi Srinivasulu.

- Trisa Bhattacharjee (registered on 15 April 2024) is working on 'Shifting Timelines: Asian Elephants in Human Settlements in and around Sathyamangalam Tiger Reserve'.
- Sushanth S (registered on 15 October 2024) is working on 'Species composition and status of vegetation, herpetofauna, birds, and mammals in the habitat mosaics of Nelliyampathy Hills, Kerala'.
- Asha Jyothi (registered on 15 October 2024) is working on 'Factors Impacting the Species Composition and Abundance of Araneofauna in Undisturbed and Disturbed Ecosystems: Implications of Habitat Management Interventions'.
- Asad Gopi (registered on 15 October 2024) is working on 'Distribution and Movement Ecology of Indian Flying Fox Pteropus medius in the Urban and Semi-Urban Ecosystems of Greater Hyderabad, Telangana State'.

If you are a self-motivated conservationist with a desire to work on a unique conservation project proposal on your mind and are looking forward to pursuing a PhD on the same, please mail us your details (CV, compelling write up on your interest, ideas of working on the aspect, funding) at phdcoordinator@zooreach.org.

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MANIPAL UNIVERSITY

Fireflies under star studded skies

Female fireflies prefer moist ground to lay their eggs. Knowing this, male fireflies display more on cloudy days. The combination of spectacular synchronous firefly flashes and clear skies are very rare. In 2023, I got one such opportunity and witnessed hundreds of thousands of fireflies displaying under a starlit sky. The long exposure nature of the photo showcases the rotation of the earth, causing the stars to trail. With rampant increase in light pollution, starry skies have become a distant past. Excessive, improper lighting spills into protected areas and wildlife corridors, threatening many nocturnal and diurnal species. This image stresses the need to conserve the dark.

Recorded by Sriram Murali and Chandrasekar Rathnam of Wild and Dark Earth, an NGO that conserves nocturnal habitats in India. wildanddarkorg@gmail.com

Fireflies and lightning

Fireflies flash to communicate, especially to mate. Artificial lighting drowns their light signals, affecting their mating success. Fireflies hardly flash in brightly lit areas. They reduce their activity when their habitat is lit by the Moon because the females wouldn't see their glows from a distance. It's surprising that the light from lightning doesn't break this behaviour. On a cloudy night in 2022, at the Anamalai Tiger Reserve, there was constant lightning at a distance. The cloudy skies diffused the light and the trees were bathed in white light regularly. This did not break their synchronisation or their flashes at all. These were fireflies of the genus Abscondita, species unknown.ote

Recorded by Sriram Murali of Wild and Dark Earth, an NGO that conserves nocturnal habitats in India.
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First photographic record of Himalayan Rubythroat from Hooghly District, West Bengal, India

Himalayan Rubythroat *Calliope pectoralis* is found throughout the Himalaya from northern Pakistan, Kashmir, western Ladakh and northeastern India to central Nepal (Billerman et al. 2022). It breeds in the semi-open landscape above treeline, such as tall-grass thickets in meadows, dwarf rhododendron patches, willow, furze, juniper and often near water in the Himalayan belt, mostly at 2,600-4,000 m. It spends its non-breeding winter at lower altitudes of the Himalayan foothills region and adjacent plains of the central Himalaya (Avibase 2024).

Himalayan Rubythroat (Male). © Tuhin Mondal.

The male Himalayan Rubythroat is gunmetal grey on upper parts with white supercilium, bright red throat, black breast band, tinged pale grey on flanks contrasting with white belly and black tail with white sides panels and tip. Females have weaker eyebrows, white throat and grey-brown upper parts (Majumder et al. 2022).

Himalayan Rubythroat (Male). © Mrinal Mal.

Boshipota (22.689 N, 88.320 E) in Kanaipur Gram Panchayat is an important birding spot. Situated in the Hooghly District of West Bengal, it is often considered a birders paradise, especially for winter migrants. The area is part of farmland where local people cultivate seasonal crops (paddy, mustard, sugarcane, and seasonal vegetables). Heavy showers during the monsoon period result in 1 m water logging, helping the growth of tall grasses and reeds. The entire area becomes covered with shrubs,

mainly Dhanche *Sesbania bispinos* and Kath Shoala *Aeschynomene aspera*.

Early in the morning on 4 November 2023, we went birdwatching in Boshipota. At around 0650 h, from 100 m distance we noticed a little bird perched on a lower tiny branch of the Dhanche plant, which seemed to be a Rubythroat. Very quickly, we focused our devices and captured a couple of shots. The presence of a black breast with fringed white and a tail with white sides and tip made its appearance different from that of the Siberian Rubythroat *Calliope calliope* (Grimmet et al. 2016).

Himalayan and Chinese Rubythroats were earlier considered conspecific and were given the English name White-tailed Rubythroat by ornithologist and bird artist John Gould in 1837. In later years, based on mitochondrial DNA, vocalization, and morphology of several *Calliope pectoralis* subspecies, the Chinese Rubythroat was elevated to an independent species.

The lack of a sub-moustachial stripe eliminated the possibility of it being a Chinese Rubythroat *Calliope tschebaiewii, t*hus leading us to identify the bird as a male Himalayan Rubythroat *Calliope pectoralis* (Majumder et al. 2022).

Mrinal Mal (co-author) revisited the same habitat regularly and recorded its presence for the next three days. After 6 November 2023, the bird, a rarity in the lower Gangetic plain of West Bengal has not been sighted to date. We reviewed the published literature and online citizen science platform (eBird 2024) from India and found no record of the observed bird from Hooghly District. In the recent past, one male was reported from the Uluberia subdivision of the Howrah district in 2017 (Hazra 2019). Therefore, this can be considered as first record from Hooghly District and the second one from southern Bengal.

References

Avibase (2024). The World Bird Database. Calliope pectoralis. https://avibase.bsc-eoc.org/species.jsp?avibaseid=9541892660CA8AE1. Accessed on 20.ii.2024.

Billerman, S.M., B.K. Keeney, P.G. Rodewald & T.S. Schulenberg (Eds.) (2022). *Birds of the World.* Cornell Laboratory of Ornithology, Ithaca, NY, USA. https://birdsoftheworld.org/bow/home. Accessed on 20.ii.2024.

eBird (2024). An online database of bird distribution and abundance [web application]. eBird, Cornell Lab of Ornithology, Ithaca, New York. http://www.ebird.org. Accessed on 20.ii.2024.

Grimmett, R., C. Inskipp & T. Inskipp (2016). *Birds of the Indian Subcontinent*. Bloomsbury India, New Delhi, 418 pp.

Hazra, A.K. (2019). Himalayan Rubythroat *Calliope pectoralis* in southern Bengal. *Indian BIRDS* 15(2): 61–62.

Majumder, A., G. Maheswaran, I. Alam, K. Chandra, J.R.B. Alfred & B.R. Chowdhury (2022). *Birds of India*. Zoological Survey of India, Kolkata, 598 pp.

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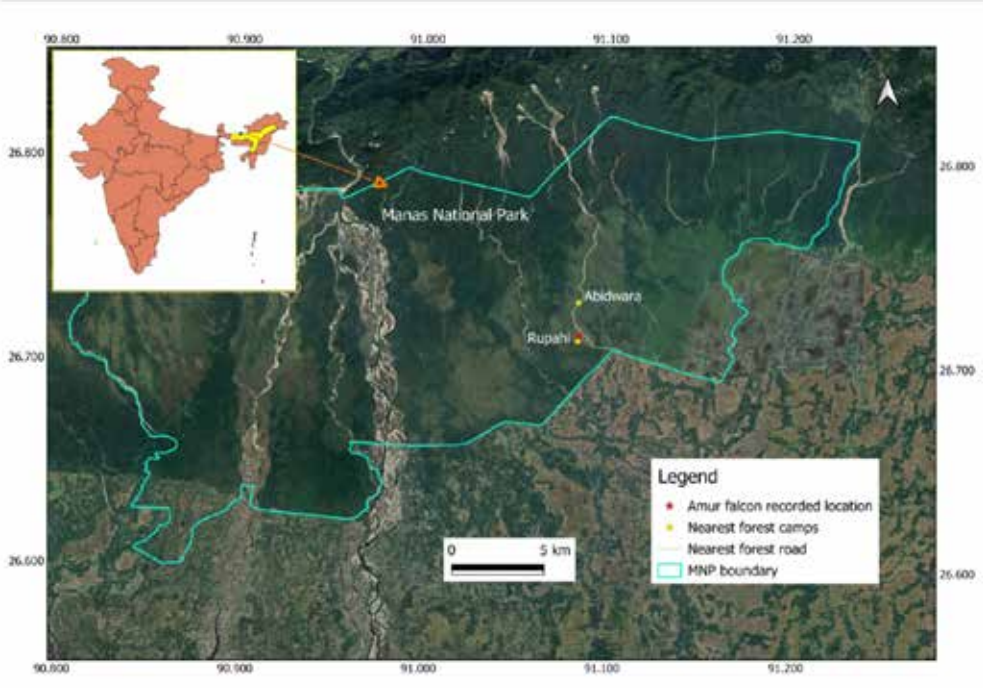
An observation of an early migration event of Amur Falcon in Manas National Park, Assam, India

On 13 June 2024, during fieldwork near the Rupahi Camp of the Bhuyanpara Range in Manas National Park, we photographed a small raptor perched on an *Osbeckia stellata* plant (26.71420 N, 91.08459 E) at 1330 h on a cloudy day. Initially, we identified the bird as a Eurasian Hobby, but scrutinizing the picture further with the help of experts and field guides (Ali et al. 1987; Grimmett et al. 2011) got us to the conclusion that this was an Amur Falcon *Falco amurensis*. The bird had a whitish with a rufous or chestnut breast band in its underparts. It measured 28–31 cm from its bill to tail and featured a cere, eye ring, legs, and feet that range in color from red to pale orange across all its plumages. The bird also had dark eyes and its legs and feet were yellow. We observed the bird for nearly five minutes before it flew away. *Osbeckia stellata* typically flowers from early June to late November. The grassland in this area is a moist deciduous type, featuring grass species

Amur Falcon perched on an *Osbeckia stellata* plant near the Rupahi Camp of the Bhuyapara Range within Manas National Park. © Karan Barman.

such as *Saccharum narenga*, *Arundo donax*, *Saccharum spontaneum*, *Phragmites karka*, *Imperata cylindrica*, *Cymbopogon flexuosus*, *Alpinia nigra*, *Osbeckia stellata*, and *Typha latifolia.* Amur Falcon is a long distance, trans-equatorial migrant (Bildstein 2006; Tamir et al. 2024) that migrates through three flyways, namely, the East Asia/East Africa Flyway, the Central Asian Flyway, and the East Asia/Australasia Flyway (BirdLife International 2015). As early published documents, sightings of Amur Falcon in northeastern India are seen usually in the month of October to February. The breeding range of this bird is usually confined to northeastern China, southeastern Russia, North Korea, and eastern Mongolia (Corso & Catley 2003). Earlier documents indicate that Amur Falcons typically leave their Asian breeding grounds in late August or early September, usually migrating in large flocks. In October and November, most of the birds travel south-west, crossing the Indian subcontinent and



Sighting location of Amur Falcon in Manas National Park

eventually making their way across the Indian Ocean to reach eastern Africa (Skerrett 2008). The bird refuels at many stopovers before ultimately arriving at their wintering sites like South Africa (Bildstein et al. 2000; Bildstein 2006; Pietersen & Symes 2010), Zimbabwe (Irwin 1981; Symes & Woodborne 2010), and Namibia (Symes & Woodborne 2010). Northeastern India is a key stopover location where the birds rest and prepare for their challenging journey across the Indian mainland, the Arabian Sea, and the Indian Ocean (Ali et al. 1987; Naoroji & Schmitt 2011) before arriving at the African continent (Clement & Holman 2001; Bildstein 2006).

From the above literature it is definite that the sighting of the Amur Falcon in Manas National Park, Assam during the month of June is an early migration event. The timing of migration to summering grounds for birds from mid to high latitudes has evolved to avoid adverse spring weather and coincide with increasing food supplies. Climate change can disrupt migration cues from wintering and breeding grounds, affect food availability and weather during stopovers, and alter conditions at summering grounds. Longer migrations increase the risk of mismatches between migration timing and local environment conditions, potentially impacting the birds' annual cycles (Carey 2009). Beyond climate change, several other factors can contribute to unusual migratory events in birds. Vagrancy and shifts in wind patterns due to changes in ocean currents play significant roles. Vagrancy occurs when birds make navigational errors, leading them to arrive at unexpected locations ahead of schedule (Lees & Gilroy 2021).

Additionally, climate-induced changes in atmospheric circulation compel birds to adjust their flight patterns in response to shifting wind directions (Skyllas et al. 2023). This phenomenon highlights the significant challenges birds face during migration. Navigating through unpredictable wind patterns and altered atmospheric conditions can prompt birds to begin their migration earlier than usual, either from their wintering grounds or breeding territories. This underscores the complex interplay between environmental factors and migratory behavior, demonstrating how multifaceted and adaptive migratory responses are to changing environments.

References

Ali, S., S.D. Ripley & J.H. Dick (1987). Compact handbook of the birds of India and Pakistan: together with those of Bangladesh, Nepal, Bhutan and Sri Lanka, Oxford University Press, New Delhi, 737 pp.

Bildstein, K.L., J. Zalles, J. Ottinger & K. McCarty (2000). Conservation Biology of the World's Migratory Raptors: status and strategies, pp573–590. In: Chancellor, R.D. & B.U. Meyburg (eds.). *Raptors at Risk*. Proceedings of the 5th World Conference on Birds of Prey and Owls, 895 pp.

Bildstein, K.L. (2006). *Migrating Raptors of the World: Their Ecology & Conservation*. Cornell University Press, 320 pp.

BirdLife International (2015). Data Zone. Migrating birds know no boundaries. Available at: https://datazone.birdlife.org/sowb/casestudy/migrating-birds-know-no-boundaries. Accessed on 22 July 2023.

Carey, C. (2009). The impacts of climate change on the annual cycles of birds. *Philosophical Transactions of the Royal Society B: Biological Sciences* 364(1534): 3321–3330.

Clement, P. & D. Holman (2001). Passage records of Amur Falcon *Falco amurensis* from SE Asia to southern Africa including first records from Ethiopia. *Bulletin of the British Ornithologists Club* 121(4): 222–230.

Corso, A. & G.P. Catley (2003). Separation of transitional second calendar-year Red-footed Falcon from Amur Falcon. *Dutch Birding* 25: 153–158.

Grimmett, R., C. Inskipp & T. Inskipp (2011). *Birds of the Indian Subcontinent*. *2nd edn*. Oxford University Press & Christopher Helm, London, 528 pp.

Irwin, M.P.S. (1981). *The Birds of Zimbabwe*. Quest Publishers, 464 pp.

Lees, A.C. & J.J. Gilroy (2021). Bird migration: when vagrants become pioneers. *Current Biology* 31(24): 1568–1570.

Naoroji, R. & N.J. Schmitt (2011). *Birds of Prey of the Indian subcontinent*. Om Books International, New Delhi, 704 pp.

Pietersen, D.W. & C.T. Symes (2010). Assessing the diet of Amur Falcon *Falco amurensis* and Lesser Kestrel *Falco naumanni* using stomach content analysis. *Ostrich* 81(1): 39–44.

Skerrett, A. (2008). The proliferation of records of Amur Falcon *Falco amurensis* in Seychelles since 1995. *Gabar* 19: 23–26.

Skyllas, N., M.J. Loonen & R. Bintanja (2023). Arctic tern flyways and the changing Atlantic Ocean wind patterns. *Climate Change Ecology* 6: 100076.

Symes, C.T. & S. Woodborne (2010). Migratory connectivity and conservation of the Amur Falcon *Falco amurensis*: a stable isotope perspective. *Bird Conservation International* 20(2): 134–148.

Tamir, T., A.T. Kimsing & D. Mize (2024). D'Ering Memorial Wildlife Sanctuary, a significant flyway and a preferred stopover (refuelling) site during the return migration of the Amur Falcon *Falco amurensis* (Radde 1863). *Journal of Threatened Taxa* 16(3): 24967–24972.

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ZOO'S PRINT

Communicating science for conservation

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Type — Articles of semi-scientific or technical nature. News, notes, announcements of interest to conservation community and personal opinion pieces.

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Cartoons, puzzles, crossword and stories

Subject matter: Captive breeding, (wild) animal husbandry and management, wildlife management, field notes, conservation biology, population dynamics, population genetics, conservation education and interpretation, wild animal welfare, conservation of flora, natural history and history of zoos. Articles on rare breeds of domestic animals are also considered.

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