



Holématthi Nature Foundation  
**ANNUAL REPORT**  
**2021-2022**





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# INTRODUCTION

The Holématti Nature Foundation (HNF) is a conservation organisation founded in 2020, committed to preserving the rich wildlife heritage of southern India, through research, collaborating with the government, community-led conservation initiatives, and outreach.



Rural conservation education is one of the many facets of HNF's work

We are a conservation-first organisation, applying scientific method to in-field conservation methodologies and enabling communities living within and on the fringes of protected areas (PAs) across multiple landscapes in the state of Karnataka. The majority of our efforts take place in the Cauvery-Malai Mahadeshwara landscape, consisting of the Cauvery and the Malai Mahadeshwara Hills (MM Hills) Wildlife Sanctuaries. We have also worked extensively in the Biligiri Ranganathaswamy Temple Tiger Reserve (BRT), and Bannerghatta National Park, which are part of the larger Cauvery landscape.

# OUR VISION

HNF is driven by a set of values that are fundamental to its mission. At the heart of the organisation's work is a commitment to wildlife conservation. The foundation recognizes the importance of preserving natural habitats and protecting wildlife in Southern India. We believe in promoting harmonious relationships between people and nature to conserve ecosystems.

Community engagement is another core value that drives the mission of HNF. We recognize that conservation efforts cannot be successful without the participation and support of local communities. As such, the foundation seeks to work with local stakeholders to conserve wildlife, protect natural habitats, and promote sustainable livelihoods. By involving communities in conservation efforts, the foundation aims to build a sense of ownership and responsibility for the natural resources in the region. This, in turn, can help ensure the long-term success of conservation efforts in the wild landscapes of the region.



Engaging with the community in a conversation about alternative fuel sources

# OUR RESEARCH PROJECTS

## Long-term monitoring of populations

In order to design suitable conservation interventions it is important that we understand the populations of species that we are interested in conserving. Markers such as density, abundance and occupancy gives us much needed context. Such data documented over a longer-term will help us formulate strategies, and conservation management policies.

Our long-term monitoring of leopards in the Cauvery-MM Hills landscape is perhaps the longest study of leopards in a single landscape in the country. Populations of leopards in both Cauvery and MM Hills Wildlife Sanctuaries have increased steadily over the years.

### Results of leopard population estimation through camera trapping in MM Hills Wildlife Sanctuary (906 km<sup>2</sup>)

Year	N (SE)	N Range	D (SE)	D Range
2014	48.2 (2.3)	45.5 – 55.6	5.3 (0.8)	4 – 7.2
2016	68.3 (3.5)	63.7 – 78.6	7.6 (1)	5.8 – 9.8
2018	58.7 (5.9)	51.5 – 77.1	6.5 (1)	4.7 – 9
2020	61.8 (1.8)	59.8 – 68.0	6.9 (0.9)	5.3 – 8.9

N - Estimate of total number of individuals in the study area, D - No of leopards/100 km<sup>2</sup>

### Results of leopard population estimation through camera trapping in Cauvery Wildlife Sanctuary (1,081 km<sup>2</sup>)

Year	N (SE)	N Range	D (SE)	D Range
2014	59.6 (5.5)	51.8-74.3	5.2 (0.84)	3.4 – 7.2
2016	53 (1.9)	50.9-59.6	4.6 (0.67)	3.5-6.2
2018	77.2 (2.3)	74.5-84.7	6.8 (0.81)	5.4-8.6
2020	96.9 (5)	90.9-112.2	8.5 (0.97)	6.8-10.6

N - Estimate of total number of individuals in the study area, D - No of leopards/100 km<sup>2</sup>

# Camera Trapping As A Continuation Of Long-Term Population Monitoring

During the year 2021-2022, we continued our long-term population monitoring and covered a total area of 578 sq km for estimating leopard density and abundance, and of other species such as the leopard and the tiger. It has also helped us to understand the distribution of dholes, elephants, gaur and other species. The table below provides an overview of the locations we have worked in, and the number of locations within these regions in which camera traps were deployed during this period to monitor leopard populations. Data curation and analyses is to be carried out for those areas.



Deploying camera traps to collect population data on leopards

Area	Area covered (sq km)	Number of camera trap locations
Jayamangali Blackbuck Conservation Reserve	3.24	15
Biligiri Ranganathaswamy Temple Wildlife Sanctuary	574.8	229



## How Many Blackbucks Does Jayamangali Have?

Upon the request of the Karnataka Forest Department (KFD), one of the crucial studies that we have started in 2021 is the population estimation of blackbucks (*Antelope cervicapra*) in and around the Jayamangali Blackbuck Conservation Reserve (JBCR). JBCR is a unique habitat with vast open grasslands dotted with wooded plantations. While blackbucks thrive in the grasslands, they avoid wooded areas but also range into private agricultural lands. This has implications on the blackbuck population at Jayamangali, which also faces threats from fragmentation, conflict with humans and predation in the form of feral dogs. Our study will enable strategies to be formulated in order to effectively save the population and the landscape they belong to. Once the field studies are completed we hope to have estimates of blackbuck populations at JBCR and it's surrounding areas based on which management prescriptions can be provided.



A male blackbuck at Jayamangali Blackbuck Conservation Reserve

## Estimating Herbivore Populations

Line transects are another effective method of estimating populations of prey species in an area. Since prey species such as chital, sambar, four-horned antelope, barking deer, black-naped hare are key for the survival of large carnivores such as leopards, dholes, tigers and wolves, it is critical to understand their populations over a longer time period. During 2021-2022, we conducted prey population estimation using line transects across a total area of 2,127 sq km. The table below gives an overview of the regions where prey population estimation was undertaken.



Trees marked with red to indicate a line transect

Study Area	Size of the Study Area (sq km)	Number Of transects Completed
Cauvery Wildlife Sanctuary	1,081	17
Malai Mahadeshwara Wildlife Sanctuary	906	17
Jayamangali Blackbuck Conservation Reserve	140	14

# COMMUNITY-LED CONSERVATION INTERVENTIONS

Our partnerships with stakeholders in the landscapes we work in, continues to strengthen and enable effective conservation strategies. The majority of communities that we work with are based around Cauvery and MM Hills Wildlife Sanctuaries, along with some parts of BRT Wildlife Sanctuary and Bannerghatta National Park.



*Albizia amara* that is collected as firewood is also an important food source for elephants

One of the most effective campaigns that has been started by HNF is the distribution of LPG kits (stoves, cylinders and accessories) as an alternative source of fuel to traditional firewood. Firewood, used for cooking and for heating water, was the predominant source of fuel prior to our initiative, and the women members of these communities were typically burdened with the arduous task of collecting firewood. From our social surveys, we found that a majority of households (99%) were dependent on firewood from forests for their daily needs. This was a risky endeavour putting them in close contact with wildlife. Additionally, our surveys also showed that a majority of the tree species collected for firewood were essential sources of forage for the herbivore species such as elephants, gaur and sambar deer in the area. Hence, reducing the dependency of people on forests would help both wildlife and communities.

By distributing LPG kits, we have reduced a significant burden on the women members of these households, enabling them to manage their time effectively and also reduce their visits inside the forest. During 2021-22, we distributed 92 LPG kits to 280 beneficiaries in various villages.

# The Story Of Jayamary

Jayamary is a resident of Cowdally village, close to the forests of MM Hills. After receiving an LPG kit from HNF, she saved so much time at home that she was able to apply for work at a petrol station, and now earns an income for the household every month, enabling extra care for her husband, a carpenter, and her two children.



Jayamary, before and after our intervention



Weighing firewood to understand per-capita usage

## Our Pre And Post Intervention Surveys Helped Us To Evaluate Our Effectiveness Of This Activity.

Per-capita firewood collected in each household before the intervention was monitored from each beneficiary household. Which was then compared to post-intervention data. The data demonstrated that there was >65% reduction in usage of firewood. Women members of the household also saved over 800 hours in a year in collecting firewood. However, there is a clear indication that firewood usage has not completely reduced, and we will be continuing to monitor usage and spread awareness about switching to sustainable sources of fuel in the years to come, as this is a continuous effort for both parties.

## Enabling Alternative Livelihoods

The communities around the landscape of MM Hills Wildlife Sanctuary primarily depended on the forestland for produce and resources through which they had sustenance, and also an income. This meant venturing into these areas, coming in close contact with wildlife, sometimes during very early or late hours in the day. We also noticed that one of the primary products harvested from the forests were fronds from the date palm (*Phoenix humilis*) and that of the white dammar tree (*Vateria indica*). The latter species is listed as vulnerable in the IUCN Red List, while the former is consumed by wild herbivores. It was therefore imperative that these communities find other sources of income so as to not disrupt the ecosystem here and also practise a safer occupation for themselves.



Participants stitching bags as an alternative livelihood option

HNF, through multiple capacity building workshops, enabled 24 women of these villages to earn alternative livelihoods in the form of stitching and embroidery, crafting of face masks, and other skill sets. During this period, the women that chose to pursue alternative employment crafted 651 masks, 361 string bags, nearly 7,000 paper bags and various other products providing them an alternative source of income.

# OUTREACH AND AWARENESS

## Holématti Nature Information Centre

Involving stakeholders and communities living in close contact with wildlife about the importance of wildlife conservation has been one of our most important missions at HNF. With this objective in mind, we established the Holématti Nature Information Centre (NIC) located just at the foothills of MM Hills Wildlife Sanctuary. Since its inception, the NIC has quickly turned into a de facto centre for conducting awareness campaigns, capacity building workshops and educational sessions for students, members of the community, the KFD, and members of the general public.

From the time of opening, we have welcomed 8,792 visitors. During this reporting period, which was impacted by the COVID-19 pandemic, we received 449 visitors.



Stories of wildlife from the local areas bring in a lot more attention to conservation

## Outreach Programs For Various Stakeholders

HNF regularly conducts activities for the general public, schoolchildren and communities that live around the areas we focus on, A key objective of these sessions is to engage with the stakeholders, understand their concerns, address common issues faced, and provide sensitisation and awareness to empower these communities.



Children attending an awareness session after a wildlife conflict incident

During the period of 2021-2022, we conducted 34 different workshops in various capacities. This also included members of local and state police departments as well as media personnel. The constraints of the COVID-19 pandemic also led to us conducting multiple sessions over the internet via Zoom call for interested people, such as members of other conservation organisations.

# HUMAN-WILDLIFE CONFLICT RESPONSE

In several parts of the country communities and wildlife coexist which at times leads to negative interactions with some species, leading to stressful situations for both sides. This often results in injuries to people, and in some extremely unfortunate instances, fatalities as well. Similarly, wildlife also suffer due to retaliatory actions and increased animosity towards them.

One of HNF's goals is to mitigate the occurrence of such events, and also assist stakeholders in reducing conflict both on a short and long term period. To achieve these goals we conducted capacity building workshops for the KFD personnel, sensitisation programs for the communities and also enabled access to information on coexisting. KFD also consults HNF in the event of a conflict incident or in cases of multiple incidents occurring within a short period.



KFD staff learning to identify individual animals from camera trap photos

## Camera Traps Deployed in Conflict Situations

Area	Area covered (sq km)	Number of camera trap locations
Magadi	17.3	19
Srimangala	56.7	64



## Assisting KFD During Conflict Incidents in Magadi

During the 2021-22 period, 3 conflict incidents occurred in the surroundings of Magadi, a town in Ramanagara district that has a significant population of leopards. All three incidents involved a leopard, and with the occurrence of one death in a village called Papayanapalya, HNF was asked to provide support to the KFD in identifying the problem causing leopard to come up with suitable mitigation measures.



Assessing the site of a conflict incident

Camera traps were deployed in the problem area. Six individual leopards were identified from the area, out of which one leopard probably causing conflict was identified and was relocated to the Bannerghatta Rescue Center by the KFD. Human injuries or deaths have not been reported from this area thereafter.

## Assisting KFD After Human-Tiger Conflict Situations In Srimangala, Kodagu

During March 2021, there were several instances of human-tiger conflict in Srimangala, a small town that borders Nagarhole Tiger Reserve. A tiger had killed two humans and injured another, along with killing multiple livestock. HNF, at the request of the department, installed camera traps in 69 locations and attempted to track the movement of the tiger in order to ensure that such unfortunate events do not repeat.



Forest Department officers briefing the personnel about protocols to manage conflict

# SUPPORT TO THE KARNATAKA FOREST DEPARTMENT

## Providing Field kits

The KFD is a key stakeholder in wildlife conservation, and we have partnered with them since our inception.

One of the essential tasks we conducted during this reporting period was to offer the KFD staff with 614 field kits to the ground staff in the Cauvery-MM Hills landscape. Each kit consisted of a water bottle, a string bag and a light cotton cap to ensure they are protected from the harsh working conditions.



Field kits being distributed to the KFD staff of Cauvery Wildlife Sanctuary by Achim Burkart, Consul General, German Consulate, Bengaluru.

## Capacity Building

HNF also routinely conducts capacity-building sessions both at the NIC and in other parts of Karnataka for the KFD. Below are a few important workshops we have conducted during 2021-22:

- Workshop on estimating prey densities for the staff of Bandipur Tiger Reserve. The participants included the CCF (Chief Conservator Of Forests, ACFs (Assistant Conservator of Forests), RFOs (Range Forest Officers) and DRFOs (Deputy Range Forest Officer) of Bandipur Tiger Reserve.
- Training Session at Maidenahalli Blackbuck Reserve on monitoring wildlife populations. The participants included the CCF, DCF, ACF, RFO, DRFOs, Guards and watchers from Tumkur division.



A Training Session conducted at Tumkur Division for KFD staff

# MASTER'S STUDENTS SUPERVISED

HNF's senior scientists are regularly involved in the supervision of students from various universities. Here are the students we have supervised during this year:

- Elizabeth Clement. Spatial patterns of striped hyena (*Hyaena hyaena*) persistence across a human-modified landscape in Karnataka, India, MSc dissertation, University of Kent, UK.
- Blaise Ebanietti. Habitat management and topographic complexity drives sloth bear occupancy in Karnataka state, Western Ghats. MSc dissertation, University of Kent, UK.



# SCIENTIFIC PUBLICATIONS

Our team routinely publishes our findings from the research we do in esteemed journals worldwide, and also creates technical reports. Below is a list of the publications in 2021-22.

- Snider, M. et al. (2021) Home range variation in leopards living across the human density gradient. *Journal of Mammalogy*. 102(4), 1138-1148. <https://doi.org/10.1093/jmammal/gyab068>
- Gubbi S, Kolekar A, Kumara V. Quantifying Wire Snares as a Threat to Leopards in Karnataka, India. *Tropical Conservation Science*. 2021;14. doi:10.1177/19400829211023264

## Technical Reports

- Gubbi, S., Menon, A.M., Suthar, S, & Poornesha, H.C. (2021) Variation in leopard density and abundance: Multi-year study in Cauvery Wildlife Sanctuary, Nature Conservation Foundation, Mysore and Holématti Nature Foundation, Bengaluru, India.
- Gubbi, S., Menon, A.M., Suthar, S, & Poornesha, H.C. (2021) Monitoring leopard population in Malai Mahadeshwara Wildlife Sanctuary between 2014 and 2020. Nature Conservation Foundation, Mysore, India and Holématti Nature Foundation, Bengaluru, India.



# POPULAR ARTICLES IN MEDIA

## English

- Gubbi, S. Harm in the name of good. The Hindu.
- Gubb, S. Recovering species needs daily action, Deccan Herald.
- Gubbi, S. 'Wild And Wilful' stands on behalf of the voiceless, Mongabay India.
- (<https://india.mongabay.com/2021/07/book-review-wild-and-wilful-stands-on-behalf-of-the-voiceless/>)

## Kannada

- Gubbi, S. Jeevasankulava Samrakshisona, Vijaya Karnataka.
- Gubbi, S. Mekedatu vanya badukige yetu, Vijaya Karnataka.
- Gubbi, S. Fastfoodna huliyo, maneyootada singhalikavo? Vijaya Karnataka.
- Gubbi, S. Parisara poshanege irali arivina kavacha, Prajavani.



"Harm in the name of good"  
in The Hindu

Jeevasankulava Samrakshisona  
Vijaya Karnataka

# THE DONORS THAT MAKE IT POSSIBLE

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- Smitha Kalyani Tumuluru
- Suchindra K C
- Sumana Chandrashekar
- Tanmayi Gidh
- The Karnataka Forest Department
- Vanya E Joseph

# MEET OUR TEAM

- Abhishek M
- Amrita Menon
- Annapoorna Daithota
- Ashritha Anoop
- Avinash R
- Chandrashekar M
- David Kumar T
- Ganesh N
- Kiran Prabhu
- Mahadevaswamy J.
- Palaniswamy
- Phalguni Ranjan
- Poornesha H C
- Prabhu V
- Praveen T V
- Rajesh
- Ruma K Kandurkar
- Sanjay Gubbi
- S.Santhosh Kumar
- Sandesh Appu Naik
- Shravan Suthar
- Sujatha N
- Vijay M
- Vinod Krishnan



# DONATE TO SUPPORT OUR WORK

At HNF, we are committed to preserving the natural habitat of wildlife in Karnataka. We are proud to implement the groundwork that enables concrete impacts for the conservation of wildlife species in South India.

However, we cannot continue this important work without the support of our generous community. We welcome donations from individuals and organisations who share our passion for wildlife conservation. Your contributions will go directly towards supporting our conservation activities in Karnataka.

We want to assure our donors that 100% of the benefits go towards the conservation of wildlife in Karnataka, and we are committed to transparency in our work. Every donation, big or small, makes a difference and helps us continue our mission to protect and conserve our natural heritage. We are grateful for any support we receive and thank you for helping us make a positive impact on the environment and the wildlife that call it home.



The Holématthi Nature Foundation Center established  
at the edge of MM Hills Wildlife Sanctuary

## Contribute to our mission of preserving wildlife

We believe that by working together, we can make a real difference in our communities and the world around us. We are always looking for passionate individuals who want to contribute their skills and support our organisation. Whether you are interested in joining our team, volunteering your time, sharing photographs, or learning more about our ongoing projects, please don't hesitate to contact us.

Thank you for your interest in our conservation work, and we look forward to hearing from you soon!

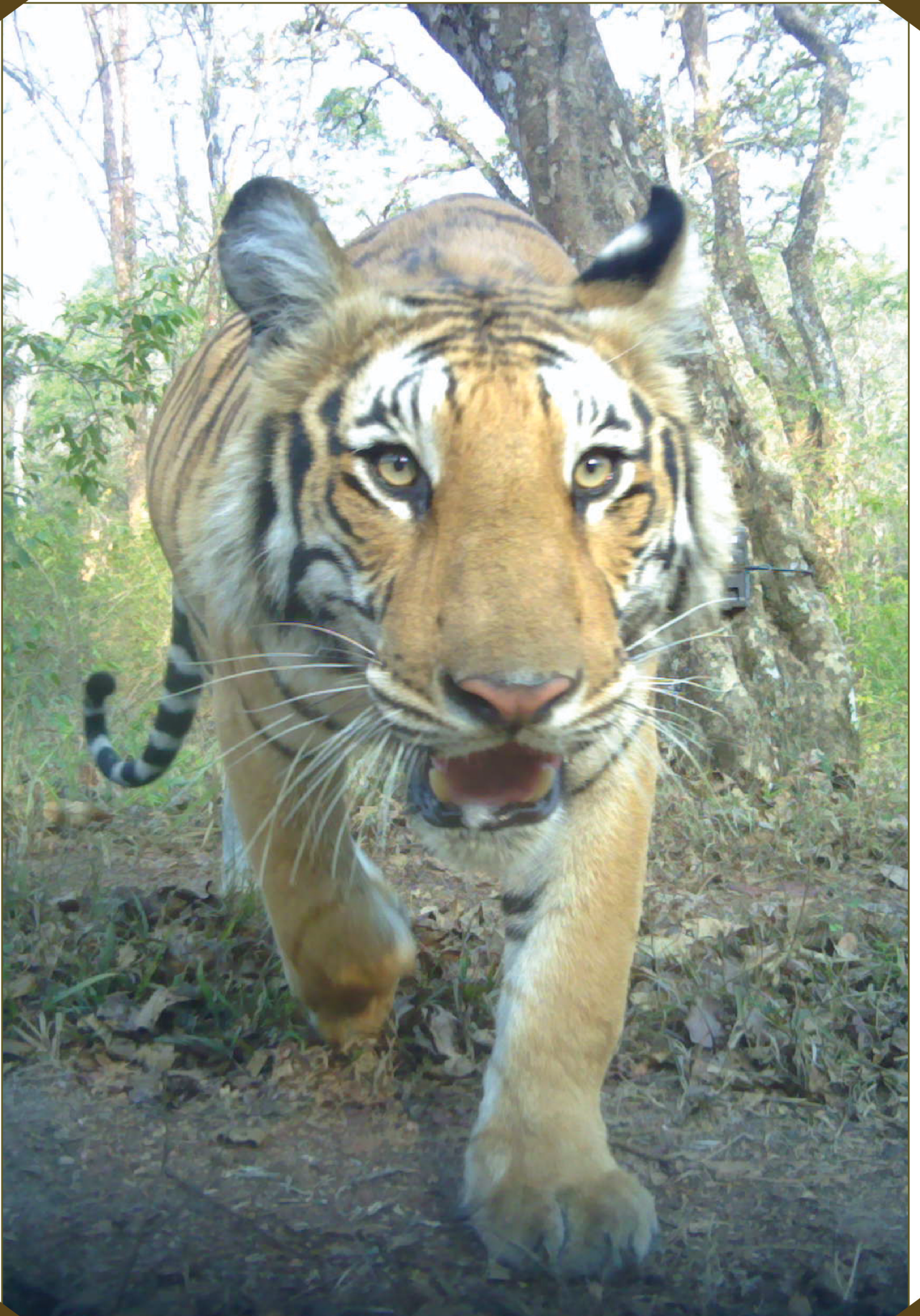



Field team captured together in their uniforms

## Contact us

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**We thank you for your constant support in helping us conserve the beautiful, wild landscapes of Karnataka.**