2020 - 2021

ANNUAL REPORT

HOLÉMATTHI NATURE FOUNDATION

HOLÉMATTHI
Nature
Foundation

INSIGHTS FROM LONG-TERM LEOPARD MONITORING IN PROTECTED AREAS

We have been conducting long-term monitoring in the Malai Mahadeshwara (MM Hills) and Cauvery Wildlife Sanctuary (Cauvery WS) since 2014. These efforts give us an insight into large carnivore ecology. For example, the number of female leopards is higher compared to the males in the study areas, suggesting that the MM Hills and Cauvery WS landscape is conducive to their habitation and breeding.

One of the most significant distribution updates through our camera trapping effort would be that of the Indian grey wolf (*Canis lupus pallipes*), documented in the Cauvery WS in April 2020, now known to be the southernmost distribution extension of the canid. The species is at risk due to habitat loss, depletion of natural prey, and retaliatory killing, among other reasons.

In surveys across MM Hills and Cauvery WS, we have documented 29 mammalian species. In spite of sharing commonalities in terms of area and vegetation, there are a few species found only in either one or the other sanctuary. The blackbuck and grizzled giant squirrel for example, were found only in Cauvery WS in our camera traps, while the stripe-necked mongoose was spotted in MM Hills, but not in the adjacent Cauvery WS.

As part of our long-term monitoring efforts, we continued our camera trapping work in Biligiri Rangaswamy Temple Tiger Reserve (BRT) and Bannerghatta National Park (Bannerghatta NP). During this period, we observed two leopards that are common between Cauvery WS and Bannerghatta NP. Interestingly, one individual was spotted in Cauvery WS, MM Hills, BRT as well as the Doddasampige-Edyarahalli forest corridor. This brings to light the necessity of contiguous forest patches and safeguarding wildlife corridors for ease of movement of wildlife including leopards.

MONITORING LEOPARDS IN THE DECCAN PLATEAU

The 'Deccan' Plateau, derived from the Prakrit word '*dakkhin*' or '*dakkhana*' is a massive peninsular region to the south of India. Comprising of rocky outcrops, dry-deciduous forests and savanna woodlands, it's an important ecoregion, and a key conservation site due to the occurrence of several wildlife species and their closeness to high human density areas.

Since 2013 we have monitored leopard populations across different parts of the Deccan Plateau in Karnataka. To date we have studied leopard populations in 20 sites in the Deccan Plateau and identified 176 individuals. Of these, Jayamangali Blackbuck Reserve, Chamundi Hill Reserved Forest, Devarayanadurga Reserved Forest and Madhugiri Reserved Forest are areas where we have conducted leopard population surveys multiple times.

This year we added a new area to our study areas. Marikanive State Forest, spanning across an area of 112.46 sq. km (27,790 acres) was the latest site where we computed baseline abundance and density estimates. Our study shows that Marikanive, a dry deciduous, woodland savanna habitat in central Karnataka, hosts an abundance estimate of 7 leopards with a mean density estimate of 3.91 leopards/100 sq. km. (SE ±1.48).

Overall since 2014, we have identified approximately 613 individual leopards across 25 sites.

HUMAN-WILDLIFE CONFLICT MITIGATION

Forest-fringe communities often face increased frequencies of human-wildlife conflict, with some incidents resulting in damage to property, injuries or even casualties on both sides.

Many families live close to the periphery of protected areas in isolated houses that have no electricity connection. Wild animals, especially elephants, often pass through these areas at night, and in the process may end up damaging property or crops in the dark. Families experiencing this live in constant anxiety, affecting their lives and also breeding negative perceptions of wildlife that can lead to stronger retaliations. To mitigate this, we have been providing solar-powered lights to these remotely located households, to ensure their homes and sheds are lit at night. The lights deter approaching wild animals, and illuminate the area around the house, giving people peace of mind and alleviating their stress and fear of unseen animal interactions in the dark. There is a notable added benefit of the children now being able to study even after sundown.

In the last one year, we expanded the installation of solar lights to 16 more homes, now bringing the total to 50 families who have benefitted from this initiative so far, further improving perceptions and understanding towards wildlife.

SUPPORT TO THE KARNATAKA FOREST DEPARTMENT

The Forest Department is the foremost agency in charge of managing and protecting the forests and wildlife throughout India. Given our extensive work within and around the Cauvery and MM Hills Wildlife Sanctuaries, we have developed a close association with the Karnataka Forest Department, with support being extended both ways.

To date, we have provided solar powered water pumps to 13 anti-poaching camps (APCs) in the Cauvery and MM Hills Wildlife Sanctuaries, of which six were installed in the past year. Most APCs are remotely located in the forest with no provision for running water or electricity. These pumps help the watchers save the time and effort required to fetch water from nearby sources, enabling them to do their work more efficiently.

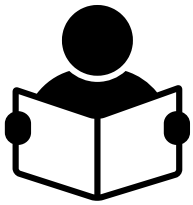
We also distributed nearly 650 field kits to forest watchers, guards and staff consisting of sturdy backpacks, caps, and water bottles to aid them in carrying out their work.

HOLÉMATTHI NATURE INFORMATION CENTRE

Stressing on the importance of conservation and wildlife awareness, the Holématthi Nature Information Center (NIC) was established in 2018 in a village close to the Cauvery and MM Hills Wildlife Sanctuaries as part of our outreach initiatives.

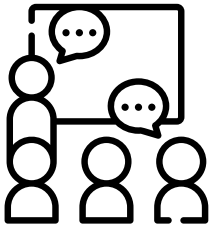
The NIC is equipped with interactive illustrations, infographics, and vibrant and realistic artwork to help impart conservation awareness among the communities in a visually engaging manner. We rely on the use of learning games, video shows, activities, workshops, and storytelling to explain facts and concepts, share information, and spark interest in the students' minds. Unfortunately, with the onset of the pandemic, this number was severely impacted with schools across the country moving to an online form of learning and an overall curb on physical meetings. We also adapted to this situation and conducted online talks on wildlife awareness, intriguing species and more, for students.

The NIC has now started welcoming visitors again, and we are planning sessions for students and others keeping all precautions in mind.



8,754 visitors

50+ schools reached



16 awareness workshops conducted

FUELLING CHANGE

We expanded our efforts in the Cauvery and MM Hills Wildlife Sanctuary landscape to provide alternatives to families who were dependent on forests for firewood.
To date, we have carried out socio-economic surveys of 5,428 people and found 97% were dependent on firewood. Our surveys also showed that they commonly harvested 19 species of trees of which 16 also happen to be crucial food sources for herbivores such as elephant, gaur, sambar, chital and others.

Over the last year, we distributed LPG connections to 436 families, bringing the total number of families supported to over 2,050, positively impacting the lives of nearly 7,300 people directly. The overall firewood consumption by the beneficiary families has reduced by around 46.5% compared to their usage before providing the LPG cookstoves. This has also reduced the carbon emissions caused by firewood burning.

This initiative is crucial to saving tree species which act as important food and nesting resources for wildlife in the region, and also helps reduce degradation of critical wildlife habitat. Switching to LPG cookstoves has also helped stabilise the health of many women as firewood smoke directly impacts lung function and can lead to chronic problems such as asthma, lung cancer, and other diseases. Additionally, women spend ~ 800 hours (100 working days) annually collecting firewood. After switching to LPG, they utilise this time to supplement their income by taking up daily wage work or carrying out other productive activities.

ALTERNATIVE LIVELIHOODS

Forest-fringe communities in villages in the Cauvery - MM Hills landscape are heavily dependent on the forests for resources for everyday use and livelihoods, the most prominent of which are non-timber forest produce (NTFP) like grasses, firewood and fruits. Kokkabare in the MM Hills Wildlife Sanctuary is one such remotely located village, with about 70 households.

We conducted interviews in these 70 households and found out that the community members, particularly women, spend close to 36 hours every week in the surrounding forests collecting dwarf date palm fronds (*Phoenix humilis*) to make brooms. This is a meagre and seasonal source of income, putting the women at an increased risk of chance wildlife interactions, while also affecting resources for wildlife like elephants, sloth bears, gaur, sambar and others.

Since the project's inception, we have trained 26 women in skills like hand-stitching, tailoring, hand-embroidery, and screen printing through a consultant, who has conducted 79 days of training of which 52 were conducted in the last year alone. The women have stitched and sold several hundred masks during the pandemic, and have been fulfilling some external orders for bags and backpacks as well. This activity has generated over ₹3.75 lakh of income for the trainees.

In the course of the coming months, we aim to replicate this model in other villages and rope in more consultants with expertise in diverse forms of handicrafts to help these women expand their skill sets and establish a sustainable business model.

SCIENTIFIC PUBLICATIONS

Publications

- Gubbi, S., Sharma, K., & Kumara, V. (2020) Every hill has its leopard: Patterns of space use by leopards (*Panthera pardus*) in a mixed-use landscape in India. PeerJ. 8: e10072. https://doi.org/10.7717/peerj.10072

- Gubbi, S., Kolekar, A., & Kumara, V. (2020) Policy to on-ground action: Evaluating a conflict policy guideline for leopards in India. Journal of International Wildlife Law & Policy. 23: 127-140. doi: 10.1080/13880292.2020.1818428

- Suthar, S., Menon, A., & Gubbi, S. (2020) An extension of known range of Brown Mongoose *Urva fuscus* from Southern India. Small Carnivore Conservation. 58: e58007.

- Gubbi, S., Ramesh, S., Menon, A.M., Girish, M.N., Poornesha, H.C. (2020) The lone wolf: new distribution update of the Indian grey wolf (*Canis lupus pallipes*) in southern India. Canid Biology & Conservation. 22(6): 21-24. URL: http://www.canids.org/CBC/22/Indian_grey_wolf_distribution.pdf

POPULAR PUBLICATIONS

Popular articles

- Ganesha, N., and Gubbi, S. (2020) How Scientists Use the Fulcrum App to Collect Data in the Field. [online] NDTV Gadgets 360
- Gubbi, S. (2020) A leopard count with a missing benchmark number. The Hindu
- Menon, A., Gubbi, S., and Ranjan, P. (2020) Research in the Wild: AI, Leopards and Photobombs. [online] NDTV Gadgets 360
- Gubbi, S. (2020) When tree planting does more harm than good. Deccan Herald
- Gubbi, S. (2020) Spotted! A leopard on the prowl. Roundglass Sustain
- Gubbi, S. (2020) Has the wildlife comeback? Deccan Herald
- Gubbi, S. (2020) Would have loved to study impacts of 'no traffic'. Deccan Herald
- Gubbi, S. (2020) Parisara poshanege irali arivina kavacha. Prajavani
- Gubbi, S. (2020) Chirategala bannada loka. Vishwavani Deepavali Visheshanka
- Gubbi, S. (2021) Living with Silicon city leopards. Deccan Herald
- Gubbi, S. (2021) Can Bannerghatta take more? Deccan Herald
- Ranjan, P. and Menon, A. (2021) Chance Encounters with Cameras Throw New Light on India's Rusty-Spotted Cats. [online] The Wire Science
- Ranjan, P. (2021). From Selfies To Comedy, Camera-Traps Reveal the Secret Lives of Animals. [online] The Wire Science

PEOPLE WHO MAKE IT POSSIBLE.

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