

## Conservation Leadership Programme: Final Report

CLP ID: **03320221**

Project Title:

### **Status of Lion Tailed Macaques in the Nilambur forests of Nilgiri Biosphere Reserve, India**

India

Nilambur, Kerala.

October 2021 and December 2022

KEYSTONE FOUNDATION

Conserving Lion Tailed Macaques in Nilambur, Kerala

Report Submitted by: Asish Mangalasseri, Rajesh R,  
Syamjith P K and Ajesh M

Permanent Address: Asish M, Mangalasseri house,  
Mullanpara, Manjeri Post, 676121  
email: letter2asish@gmail.com

## Table of Contents

<b>Section</b>	<b>Title</b>	<b>Page Number</b>
<i>Section 1</i>	<i>Summary</i>	<i>2</i>
	<i>Introduction</i>	<i>3</i>
	<i>Project Members</i>	<i>4</i>
<i>Section 2</i>	<i>Aim and Objectives</i>	<i>5</i>
	<i>Changes to original project plan</i>	<i>6</i>
	<i>Methodology</i>	<i>6</i>
	<i>Outputs and Results</i>	<i>8</i>
	<i>Communication and Application of Results</i>	<i>13</i>
	<i>Monitoring and Evaluation</i>	<i>14</i>
	<i>Achievements and Impacts</i>	<i>15</i>
	<i>Capacity Development and Leadership capabilities</i>	<i>16</i>
<i>Section 3</i>	<i>Conclusion</i>	<i>16</i>
	<i>Problems encountered and lessons learnt</i>	<i>17</i>
	<i>Future plan</i>	<i>18</i>
	<i>Financial Report</i>	<i>19</i>
<i>Section 4</i>	<i>Appendices:</i>	<i>20</i>

## **Section 1:**

### **Summary**

Lion-Tailed Macaques (*Macaca silenus*)(LTMs) are an endangered species endemic to the Western Ghats, with a population size of 3500 individuals. The Nilambur forest, located in the Nilgiri Biosphere Reserve, is home to these primates. Our project aimed to reassess their population status after 20 years and take appropriate conservation actions in collaboration with indigenous community members.

We trained selected members from the indigenous communities. This team conducted surveys through existing trails in the forest, covering grids of 5 sq. km, and regular weekly surveys for ten months along the Nadukani road passing through this forest to identify regular road-crossing locations and assess the safety of the primates. We also conducted a questionnaire survey and in-depth interviews with locals to assess their perception, knowledge, and threats to LTMs.

Our survey team covered 27 grids and sighted at least 10 LTM troops. We identified evidence of traps used for hunting arboreal primates in some areas of the forest, posing a significant threat to their survival. The road survey identified important locations in the road where conservation measures are needed. Through the structured questionnaire survey with a total of 107 locals, we found that 13 respondents were aware of LTMs being used for medicinal or other purposes, and 31 respondents believed that feeding them on the roadside was a good practice. Alarmingly, 45 respondents did not know that LTMs were present in Nilambur.

Our team installed signboards in Nadukani road and conducted several outreach education programmes with locals.

## **Introduction:**

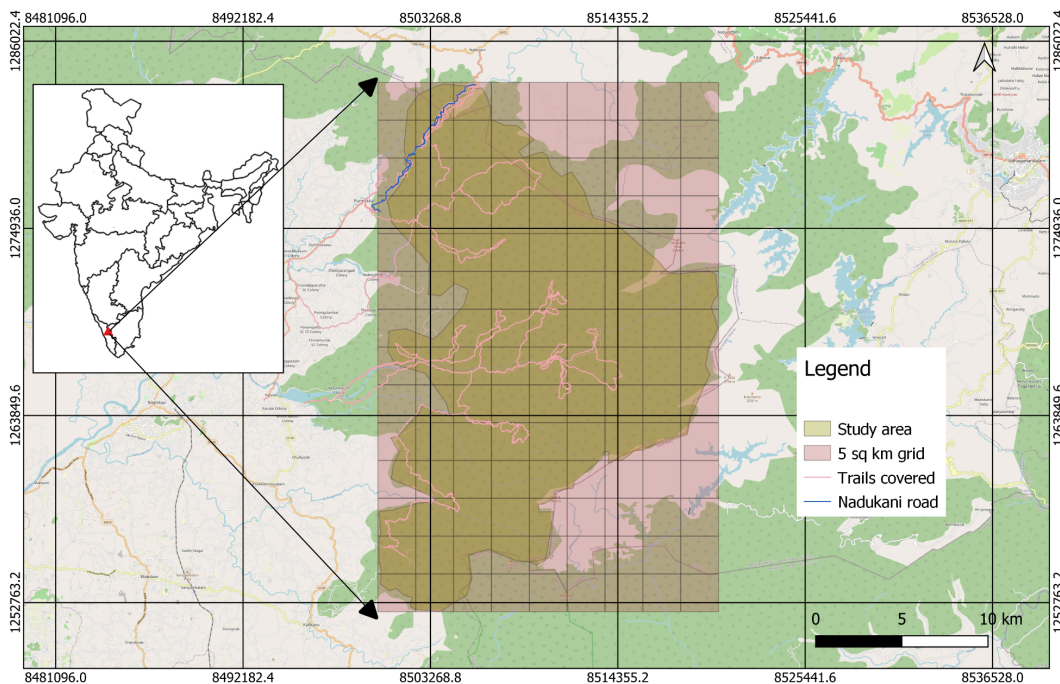
This project centered on the Lion-Tailed Macaque (*Macaca silenus*), an endangered species endemic to the Western Ghats, specifically the Nilambur region within the Karimpuzha Wildlife Sanctuary. With a global population of a mere 2500 adult individuals, the urgency to address threats such as habitat fragmentation, road kills, and illegal hunting is paramount. The project aimed to fill critical gaps in knowledge, particularly in areas outside protected forests, through community-based monitoring efforts.

The conservation value of this work lies in its potential to contribute updated information on the demography, distribution, and behavior of the Lion-Tailed Macaque population. By involving local communities, government agencies, and experts, the project sought to foster a community-based approach to conservation. This approach recognizes the importance of local knowledge and engagement in safeguarding the species.

The conservation status of LTM is endangered and in Nilambur, LTM population was last recorded in 1997. LTMs have faced threats from habitat fragmentation, road kills, and hunting. Recognizing the need for systematic studies in areas outside protected forests, the project aimed to understand the current status, threats, and conservation measures required for the species in the Nilambur region.

The project site, covering approximately 200 square kilometers, includes the Karimpuzha Wildlife Sanctuary and surrounding areas, with the Nilgiri biosphere reserve enhancing its conservation significance. This region encompasses diverse landscapes, from forests to highways, plantations, and agriculture lands, emphasizing the importance of studying wildlife populations in human-use landscapes.

Local ecologists and community members actively participated in community-based monitoring and conservation actions, highlighting the importance of collaborative efforts in conservation projects.



*Figure 1 ; Map showing important study area, Nadukani road and the trails covered during our forest survey*

In the subsequent sections, we will explore the project's objectives, methods, and outcomes, providing insights into the efforts made to improve the understanding and conservation status of the Lion-Tailed Macaque in the Nilambur region

## **Project Members**

Asish M: (M.Sc. Ecology and Environmental Science) Project team Leader and Ecologist. Currently Additional Programme Coordinator at Keystone Foundation. He coordinated the overall project. Designed and managed the project and was involved in data collection and analysis.

Rajesh R: (SSLC) Research Assistant and Educator. His local knowledge and experience were important for the success of this research. He helped in data collection and outreach activities.

Ajesh M: (SSLC) Research Assistant and Educator. Currently works as a Barefoot Ecologist at Keystone Foundation. His local knowledge and experience were important for the success of this research. He helped in data collection and outreach activities.

Shyamjith PK: (M.Phil, Anthropology) Anthropologist. Currently works as a consultant with Keystone Foundation. He Helped in designing the social aspects of the project and data collection.

## **Section 2:**

### **Aim and Objectives**

This project aims to improve the conservation status of the endangered Lion-Tailed Macaque (*Macaca silenus*) in the Nilambur region of the Western Ghats, with a focus on the Karimpuzha Wildlife Sanctuary. The objectives include:

Objective 1: Assessing demography, distribution and habitat quality of Lion-tailed macaque in Nilambur.

Objective 2: Finding key lion-tailed macaque crossing paths in Nadugani ghat road, assessing their safety and improving it with conservation actions.

Objective 3: Identifying the knowledge, awareness and perception towards lion-tailed macaques in the indigenous communities in Nilambur area and among the local people.

Objective 4: Communicate to a wider audience about the significance of the species

## **Changes to original project plan**

Due to unforeseen weather conditions, the fieldwork duration had to be extended until December 31, 2022, from the original end date of October 2022.

While initially planning to install canopy bridges for Lion-tailed macaques' safe road crossing, a 10-month monitoring period revealed sufficient natural canopy connectivity. Consequently, we altered our strategy and installed signboards along roadsides to raise awareness and caution among people.

Additionally, certain interior forest areas remained inaccessible due to challenges related to wildlife movements and terrain, preventing us from covering them as originally intended. These changes required adaptive measures and a flexible approach to ensure the project's overall success.

## **Methodology**

Objective 1: Assessing demography, distribution and habitat quality of Lion-tailed macaque in Nilambur.

To evaluate the relative abundance of macaques across the entire study area, we selected existing trails in each of the 5sq.km grids. Surveys were conducted during specific time intervals, 06:30-11:30 and 15:00-18:30, aligning with the species' active periods (Kumara & Sinha, 2009). The trail length in each grids varied. Upon locating a lion-tailed macaque or troop, data on group size, approximate age-sex ratio, and location were recorded.

During the transect walks, we collected various habitat parameters at regular intervals (Umapathy and Kumar, 2000, Umapathy and Kumar, 2003, Kumara et al., 2014), such as the height of the tallest tree and human disturbance index, calculated every 250m (Kumara et al., 2014).

Basic analysis to find the population status, distribution and habitat quality was performed with the help of Microsoft Excel, and QGIS software.

Objective 2: Finding key lion-tailed macaque crossing paths in Nadugani ghat road, assessing their safety and improving it with conservation actions.

Regular repeated surveys were conducted by walking through the Nadugani Ghat road to identify the crossing paths of lion-tailed macaques. This was replicated four times every month for ten months, with walks along the road between 06:30 to 11:30 and 15:00 to 18:30 consecutively. Upon sighting a lion-tailed macaque near the road, data on time, group size, approximate age-sex ratio, location, the precise crossing point, and the mode of crossing were recorded. Parameters such as canopy cover, tallest tree height, disturbances, distance from the closest curve in the road, the duration taken to cross the road, and time spent near the road were collected.

During the road survey, if any traveler stopped their vehicle and stepped out after seeing wildlife, observations were made, including the location, vehicle type, and the traveler's response, following the approach by Vidya and Thuppil (2010).

Basic analysis in QGIS was utilized to determine the most frequently used crossing paths of lion-tailed macaque troops. The safety factors and traveler responses were analyzed by assigning different ranks and weightages to the parameters. This analysis also helped identify key locations for installing signboards to warn travelers against stopping their vehicles, feeding wildlife, and to provide warnings about wildlife road crossings.

Objective 3: Identifying the knowledge, awareness and perception towards lion-tailed macaques in the indigenous communities in Nilambur area and among the local people.



A questionnaire survey was conducted to assess local people's perception towards LTM, as suggested by Jaganathan et al. (2019). This survey aimed to evaluate the awareness and perception of local people regarding the lion-tailed macaque population, conservation status, and importance. Additionally, focus group discussions were undertaken with indigenous communities to document indigenous knowledge related to LTM, following the methodology proposed by Mavhura and Mushure (2019)

Objective 4: Communicate to a wider audience about the significance of the species

To communicate the significance of Lion-Tailed Macaques (LTM) to a wider audience, our approach encompassed various strategies. We engaged the community through a mass cleaning event on Nadukani road, involving 350 students, fostering a sense of environmental responsibility. Two team members received training in education activities related to nature and conservation. Leveraging the digital space, we created an Instagram page, sharing regular posts about LTM facts and project updates. Academic contributions included a published book chapter and newsletter article on LTM. Presentations were made during the Nilgiri Field Learning Course (at Keystone Foundation), targeting students from the University of Cornell and Kotagiri. Workshops with indigenous communities focused on developing a community conservation plan. Capacity building involved training indigenous women for outreach programs and community members for Instagram page management. The project's findings were disseminated through outreach sessions in forest villages, a booklet publication, and a poster presentation at the International Conference for Conservation Biology (ICCB) in 2023.

## **Outputs and Results**

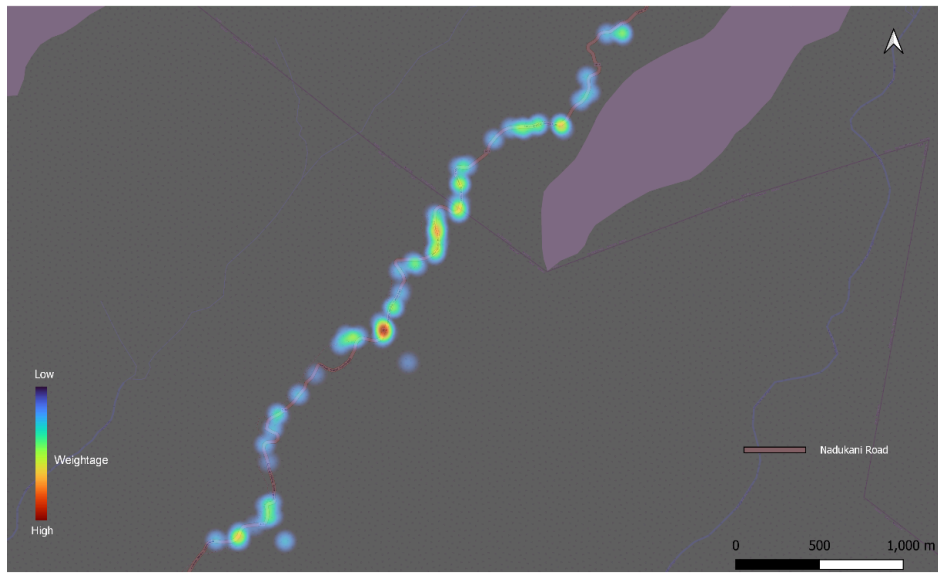
In the survey through forest trails, we identified at least 10 distinct LTM troops with an average troop size of 12. We have counted 156 individual LTMs during

the survey. All sightings were from elevations between 500- 1400m. We also encountered 9 traps of monkeys and 23 evidence of traps during the survey

Threats identified in the forest:

- Hunting, low awareness and knowledge about population status of LTM among villagers in the forest
- Habitat loss and Invasive species

There are three distinct resident LTM troops in the Nadukani road.



*Figure 2 Map showing important locations (high weightage) where LTM has been sighted more frequently and interstate trucks carrying goods illegally parked on the roadside. (Weightage; LTM sighting= 10, Vehicle parking= 5)*

Threats identified in the Nadukani road:

- Tourists and Truck drivers dumping waste.
- Feeding wild animals in the road
- Speeding vehicle
- Low awareness of general public

In the online and offline questionnaire survey with the general public around Nadukani we got responses from 107 participants.

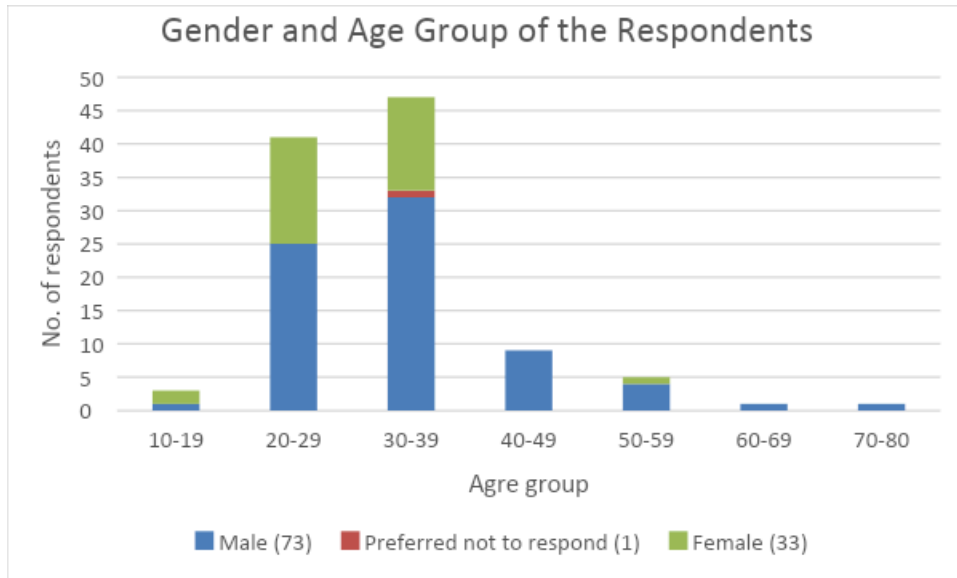


Figure 3; Chart showing gender and age group of the respondents.

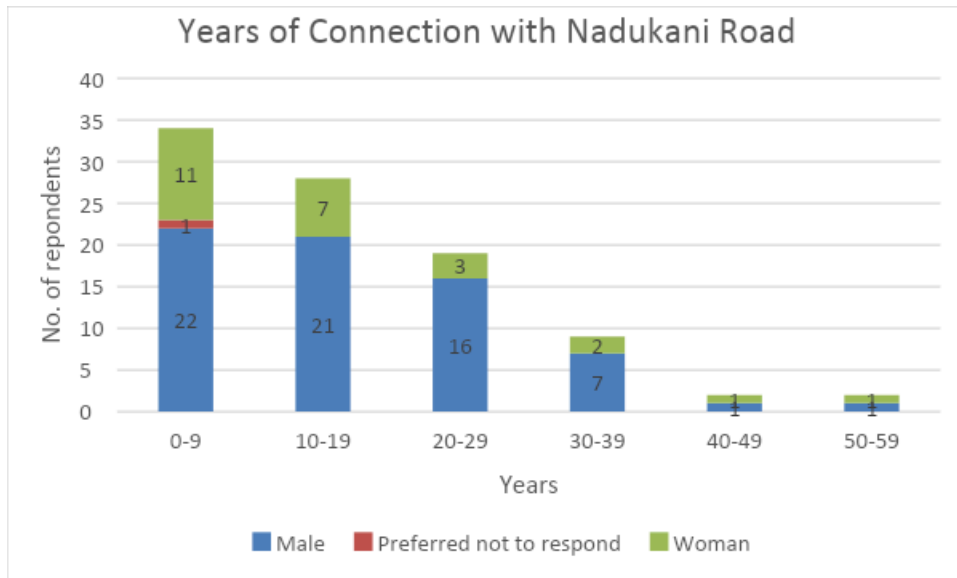
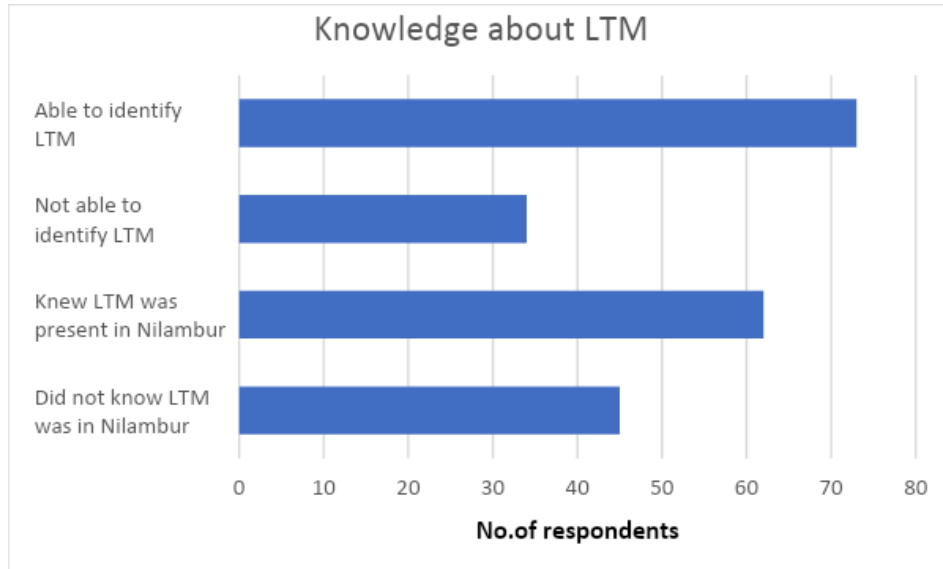
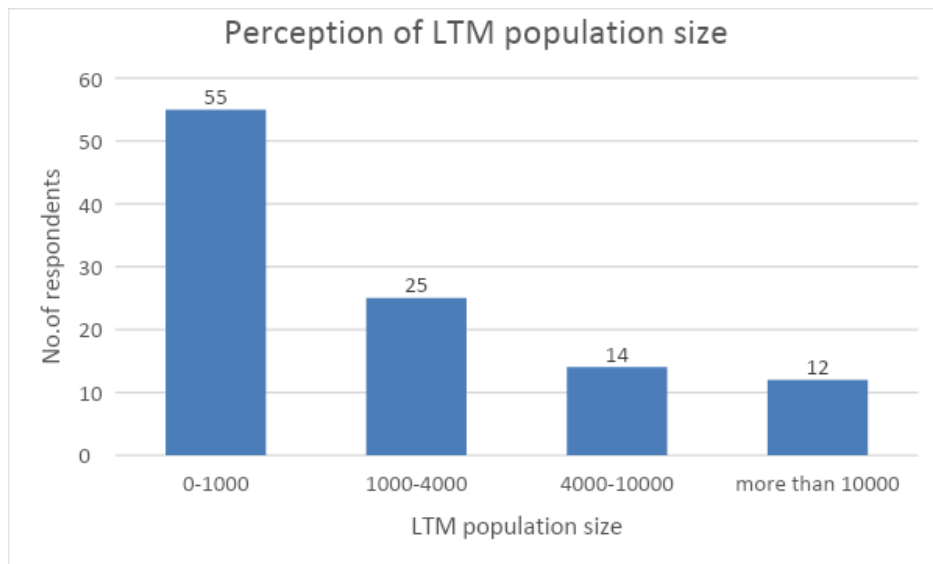


Figure 4: Chart showing respondents' years of connection with Nadukani



*Figure 5 Chart showing respondents knowledge about LTM.*



*Figure 6 Chart showing perception of respondents about population size of LTM*

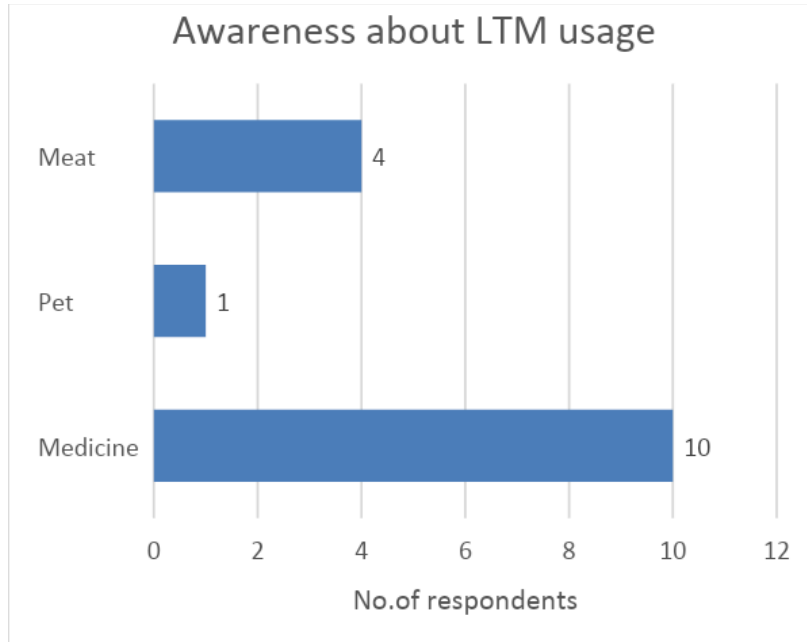


Figure 7; Chart showing awareness about LTM usage

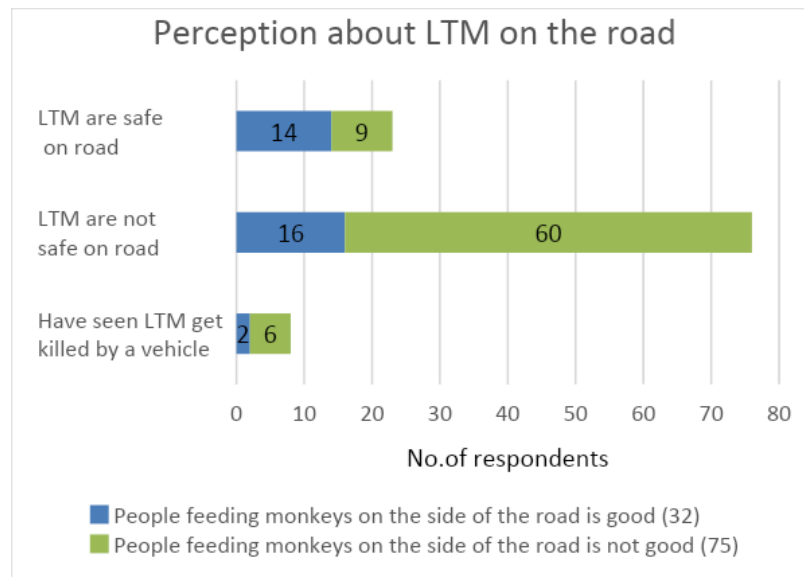


Figure 7; Chart showing perception about feeding monkeys on roadside and awareness threats

Through in-depth interviews and discussions about Lion-Tailed Macaques (LTM) with indigenous people in forest villages, we gained insights into their perceptions, knowledge, and perceived threats. Only those who venture into the

forest possess comprehensive knowledge about LTMs. Individuals capable of identifying LTMs demonstrate a nuanced understanding of their morphology, behavior, and habitat. Remarkably, none of the villagers considered LTMs a nuisance.

Many villagers recalled keeping LTMs as pets in their village, and while some villagers acknowledged past hunting for meat and medicinal purposes, such practices have ceased. Additionally, outsiders used to engage in hunting activities in the past. In certain villages, monkeys are revered as symbols of God, and consequently, they are not hunted. A prevalent belief among the interviewees is that the LTM population in their forest has increased compared to the past, attributed to the discontinuation of hunting practices.

#### Conservation Actions;

- We conducted several awareness programmes and community consultation meetings to spread awareness.
- Installed 8 sign boards along the Nadukani road.
- Published a booklet sharing knowledge and awareness about LTM.

### **Communication and Application of Results**

To disseminate awareness and knowledge regarding the conservation of Lion-Tailed Macaques in Nilambur, we established a dedicated Instagram page, actively sharing educational content. Concurrently, eight signboards were strategically installed along the Nadugani Ghat road, urging people to refrain from feeding wildlife and advocating for reduced speed.

In addition to online efforts, we conducted targeted awareness outreach sessions across ten villages, fostering direct engagement with local communities. A comprehensive booklet was prepared, serving as an informational resource on Lion-Tailed Macaques and their conservation. This booklet further facilitated the dissemination of knowledge among community members.

To showcase our work on an international platform, we presented a poster at the International Congress for Conservation Biology (ICCB) in Rwanda in 2023, contributing to global discourse on primate conservation. This multi-faceted approach in communication ensures the broad reach of our conservation message, engaging local communities, social media audiences, and the international conservation community. The installed signboards and outreach sessions actively apply the project's results by directly addressing the identified threats and fostering a conservation-conscious community.

### **Monitoring and Evaluation**

To gauge the effectiveness of the project's outreach awareness programs, a robust monitoring and evaluation approach was implemented. A pre-and-post questionnaire survey was conducted with participants, primarily from communities with varying literacy levels. To accommodate the diverse audience, each multiple-choice question from the 11-question survey was verbally announced, and participants were prompted to indicate their response by raising their hands.

The questionnaire was specifically designed to assess the impact of the awareness sessions on participants' awareness and attitudes towards Lion-Tailed Macaque conservation. Questions were tailored to measure changes in mindset, knowledge acquisition, and the overall effectiveness of the awareness initiatives.

This method allowed for a tangible evaluation of the success of the outreach programs by directly engaging with the participants and capturing their responses in a manner accessible to those with limited literacy. The pre-and-post survey comparison provided valuable insights into the project's impact on raising awareness and fostering a positive attitude towards the conservation of Lion-Tailed Macaques in the Nilambur region.

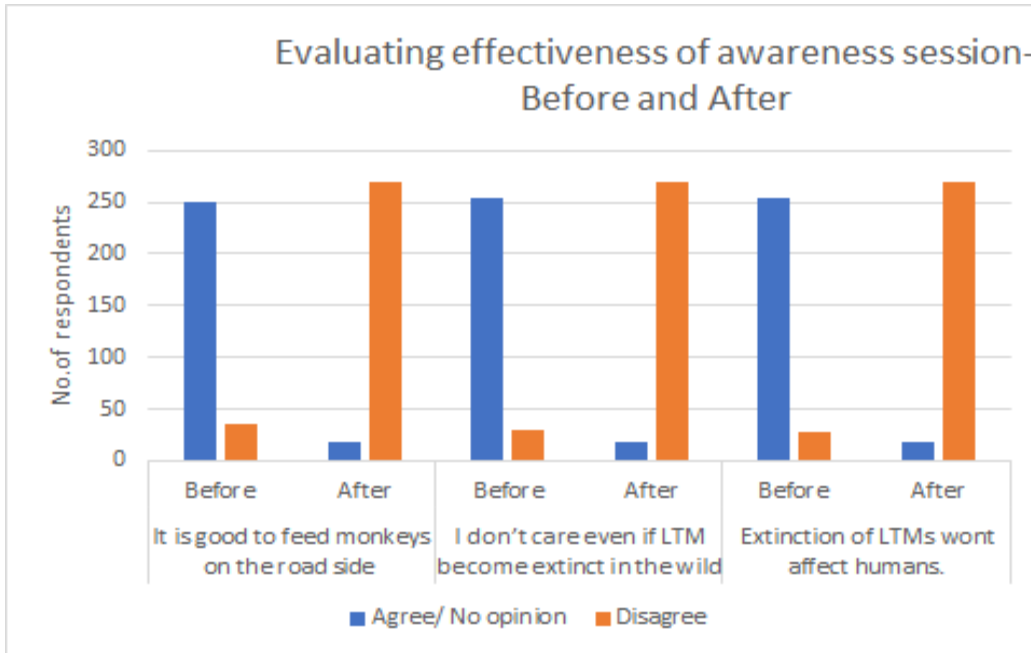


Figure 8; Chart showing response of the participants- before and after the awareness session to some of the questions.

## Achievements and Impacts

The project successfully revealed the presence of at least 10 troops of Lion-Tailed Macaques (LTMs) in Nilambur forests, shedding light on population status and key threats faced by the species. This understanding directly informs conservation actions.

Post-project, a heightened awareness among Nilambur residents, including those in forest villages, emerged regarding the existence of the endangered LTM species and the importance of its conservation. This increased awareness ensures local communities are well-informed and supportive of LTM conservation efforts. Education efforts resulted in a notable reduction of threats on Nadugani road, with improved understanding among tourists and locals. This achievement directly addresses the mitigation of road-related threats, promoting safer coexistence between LTMs and human activities.

Thirty-two indigenous community members actively engaged in the project, showcasing ownership and commitment. Their involvement, including ten



community members undergoing structured training, contributes to the long-term sustainability of local efforts for LTM conservation.

The project successfully identified 10 distinct LTM troops in the Nilambur forests, confirming the presence and population of the species. Additionally, eight sign boards were installed on Nadugani road with community and government support, aiding awareness and minimizing threats in key locations.

Conducted outreach classes in ten forest villages and community consultation workshops facilitated dialogue and collaboration on conservation actions within the local community. This active involvement aligns with fostering awareness and knowledge, actively involving communities in discussions and actions for the long-term conservation of LTMs.

### **Capacity Development and Leadership Capabilities**

The project significantly enhanced the capacity of the project team and local community members. Initially unaware of the LTM's presence, they evolved into active contributors to the survey and conservation education. Through structured training, ten indigenous members developed essential skills, showcasing leadership capabilities in conducting outreach programs. This capacity development contributes to empowering local ecologists and community members to autonomously manage and sustain community-based conservation projects. The project's success lies not only in its scientific contributions but also in building a knowledgeable and empowered community committed to the enduring conservation of Lion-Tailed Macaques in Nilambur.

### **Section 3:**

#### **Conclusion**

This project has made a significant contribution to reassessing the Lion-Tailed Macaque (LTM) population in Nilambur, a region contiguous to Silent Valley

National Park, Mukurthi National Park, and Wayanad Wildlife Sanctuary. Through the project, we identified at least 10 distinct populations of LTMs in the study area. The implementation of conservation measures, particularly addressing road threats on the Nadugani Ghat road, has been a pivotal achievement. Identifying key LTM crossing locations and installing strategically placed sign boards along the road has proven effective in mitigating road kills and enhancing the safety of these endangered primates.

Crucially, the project fostered community engagement by sharing the conservation importance of LTMs with forest villagers. Through in-depth consultations, the project aimed to instill a sense of responsibility among local communities toward the long-term conservation of LTMs in the region. The active involvement of community members throughout the project signifies a sustainable conservation approach, with the project aspiring to leave a lasting impact even beyond its official duration.

The project also identified ongoing threats to the survival of the LTM population in the area, including hunting, invasive species, and a lack of awareness among people.

In conclusion, this project has not only addressed the objectives outlined in the introduction but has also uncovered vital information crucial for the conservation of LTMs in the Nilambur region, fostering a community-driven commitment to the continued protection of these endangered primates.

### **Problems Encountered and Lessons Learned**

Developing the project proposal underestimated the time needed for team training, leading to a necessary extension of the project timeline. Recognizing the importance of comprehensive training for team members is crucial in future project planning.

Unforeseen unseasonal rains in Nilambur during the project period posed a challenge, delaying fieldwork beyond the planned time frame. Adapting to unpredictable weather patterns and incorporating flexibility in project schedules is essential for effective execution in similar environments.

The absence of permanent campsites within Nilambur forests necessitated the team to stay in temporary shelters, impacting accessibility to remote forest areas. Accessing remote forest areas proved challenging due to long distances from villages, difficult terrain, and wildlife movement. Overcoming these challenges required additional effort and time. Future projects should factor in the logistical complexities of reaching remote locations.

### **Future plan**

In the future, we are committed to sustaining and expanding our conservation efforts beyond the grant period. To ensure the ongoing well-being of Lion-Tailed Macaques (LTM) in the Nilambur region, we will:

- a) **Monitoring LTM Troops:** We plan to conduct continued research on LTM troops both near roads and within the forest, focusing on their interactions, feeding patterns, and food sources. This ongoing monitoring will provide essential data for informed conservation strategies.
- b) **Habitat Quality Improvement:** Efforts to enhance habitat quality through restoration initiatives will be a priority. This includes activities aimed at preserving and restoring the natural environment, crucial for the sustained well-being of LTMs.
- c) **Community Engagement:** Our commitment to community involvement remains steadfast. Conservation education programs will be continued, ensuring that local communities are active participants in and advocates for LTM conservation.
- d) **Local Researcher Training:** We plan to expand our impact by training more local researchers, fostering their involvement in conservation efforts. This capacity-building approach empowers local communities to take a leading role in the long-term protection of LTMs.

e) Effectiveness Evaluation: Ongoing evaluation of the effectiveness of signboards installed during the project will guide potential adjustments and improvements. This iterative process ensures that our conservation messages continue to reach and resonate with the intended audience.

By integrating these initiatives, we aim to establish a sustainable framework for LTM conservation in Nilambur, extending the positive impact of our project beyond the grant period. Through a holistic approach encompassing research, habitat restoration, community engagement, capacity building, and ongoing evaluation, we aspire to create lasting change for the benefit of the target species and the broader ecosystem.

## Financial Report

Itemized expenses	Total CLP Requested (USD)*	Total CLP Spent (USD)	% Difference	Details & Justification (Justification must be provided if figure in column D is +/- 25%)
<b>PHASE I - PROJECT PREPARATION</b>				
Communications (telephone/internet/postage) Field guide books, maps, journal articles and other printed materials Insurance Visas and permits Team training Reconnaissance Other (Phase 1)	815.00 2,055.00	623.17 1948.63	-24% -5%	
<b>EQUIPMENT</b>				
Scientific/field equipment and supplies Photographic equipment Camping equipment Boat/engine/truck (including car hire) Other (Equipment)	1,456.00	1806.71	24%	
<b>PHASE II - IMPLEMENTATION</b>				
Accommodation for team members and local guides	479.00	587.13	23%	

Food for team members and local guides	788.00	703.64	-11%	
Travel and local transportation (including fuel)	2,800.00	2777.55	-1%	
Customs and/or port duties				
Workshops	967	824.04	-15%	
Outreach/Education activities and materials (brochures, posters, video, t-shirts, etc.)	171.00			
Other (Phase 2)		152.09	-11%	
<b>PHASE III - POST-PROJECT EXPENSES</b>				
Administration		18.75		Bank charges on grant receipt
Report production and results dissemination				
Other (Phase 3)	680.00	782.90	15%	
<b>Total</b>	<b>10,211.00</b>	<b>10,224.61</b>		

#### Section 4:

#### Appendices:

#### Photos

Photo Documentation of some of the activities:



The core team: From left to right- Rajesh R, Asish M, Syamjith PK, Ajesh M



Team doing questionnaire survey with an indigenous community member (Photo Credit: Asish M)



Team doing LTM survey in Nadukani road.  
(Photo Credit: Asish M)



Lion-Tailed Macaque in its fruit plant- *Cullenia exarillata* from Nilambur (Photo Credit: Asish M)



People feeding Nilgiri Langur in Nadukani Road (Photo Credit: Asish M)



Mass plastic cleaning program in Nadukani Road (28/08/2022) (Photo Credit: Asish M)



Team exhibited their project work and invited people to scan the qr code of the online survey in Arogyamela (Health Exhibition)



Ajesh presenting the project and importance of LTM to the NFLC class and Keystone staffs (16/03/2022) (Photo Credit: Asish M)

organized by the Health department in Nilambur.(Photo Credit: Anagha C)



Team planning their survey in the forest (Photo credit: Anagha C)



Team during a break while doing the forest survey (Photo Credit: Rajesh R)



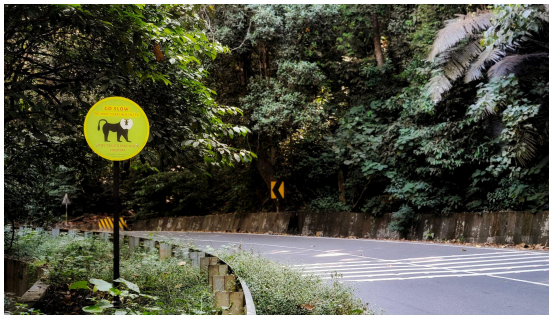
LTM crossing the Nadukani road through canopy (Photo Credit: Asish M)



Outreach awareness session at a village meeting hall (Photo: Asish M)



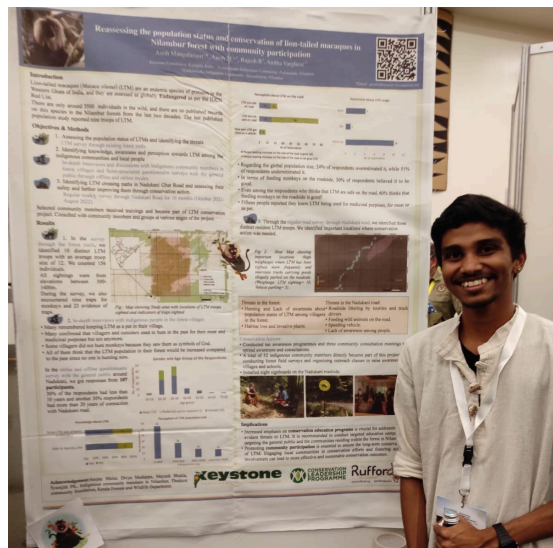
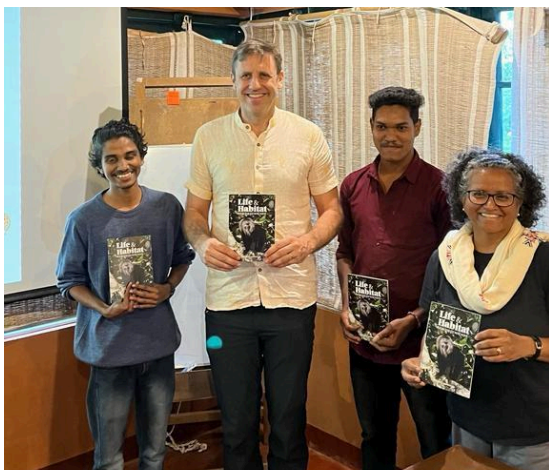
Outreach awareness session at a village where there is no meeting hall (Photo: Asish M)



Eight Sign Boards were installed along Nadukani Ghat Road (Photo: Ajesh M)



Rajesh Facilitating a communist Consultation meeting (Photo: Asish M)





The LTM booklet was launched by British Deputy High Commissioner Chennai (Photo: Divya )

LTM work was presented at ICCB 2023, Rwanda

## CLP M&E measures

Output	Number	Additional Information
Number of CLP Partner Staff involved in mentoring the Project	3	
Number of species assessments contributed to (E.g. IUCN assessments)	0	
Number of site assessments contributed to (E.g. IBA assessments)	0	
Number of NGOs established	0	
Amount of extra funding leveraged (\$)	7,577.4	From Rufford foundation (1 USD= £ 0.79)
Number of species discovered/rediscovered	0	
Number of sites designated as important for biodiversity (e.g. IBA/Ramsar designation)	0	
Number of species/sites legally protected for biodiversity	0	
Number of stakeholders actively engaged in species/site conservation management	35	Including core project members, field assistants, science communicators.
Number of species/site management plans/strategies developed	0	
Number of stakeholders reached	350+	Participants of outreach programmes, consultancy meetings, participants of interviews & audience of social media

Examples of stakeholder behavior change brought about by the project.	Some of the Forest villagers became more aware about importance of conserving LTMs	Through outreach programmes.
Examples of policy change brought about by the project	0	
Number of jobs created	35	The project created employment opportunities for a total of 35 individuals, including 4 core project members who participated throughout the period, along with 29 field assistants and 2 consultants on a temporary basis
Number of academic papers published	0	
Number of conferences where project results have been presented	1	Presented a poster at ICCB 2023, Rwanda

**Links to Articles, and Magazine articles related to the project.**

- Booklet: Life & Habitat: Lion Tailed Macaque , Keystone Foundation (<https://drive.google.com/file/d/1IsPFrOHhEK9GhkHL8jwpd4Qq7w9qxs/dV/view> )

- Popular article : The Lion Tailed Macaque Project in Nilambur, Kerala  
NNHS newsletter.  
(<https://nnhs.in/december-2021-nnhs-newsletter-10-2/> )
- Social media page : <https://www.instagram.com/ltnconservation/>