

**Research Activity Report**  
**Supported by “Leading Graduate Program in Primatology and Wildlife Science”**

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<b>Affiliation/Position</b>	Primate Research Institute/D3
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<b>1. Country/location of visit</b>
India/Indian Institute of Science (Bangalore) ; Mudumalai, Anaimalai (Tamil Nadu) ; Bandipur, Dubare (Karnataka)
<b>2. Fieldwork project</b>
Setting up pathogen avoidance experiments with semi-free ranging Asian elephants in Tamil Nadu, India
<b>3. Date</b>
2017. 04. 21 – 29
<b>4. Main host researcher and affiliation</b>
Prof. Raman Sukumar (Indian Institute of Science) / Nachiketh Sharma (Wildlife Research Center)
<b>5. Progress and results of your outreach activity</b>
<p><b>Finding the right place</b></p> <p>One of the reason why I visited India was to see in which conditions the experiments I aim to conduct in collaboration with PWS student Nachiketh Sharma on pathogen avoidance in Asian elephants could be realized. As such, we visited several places in Karnataka and Tamil Nadu including the one where Nachiketh is working – Mudumalai Theppakadu elephant camp. Although elephants had been temporarily moved away at the time of my visit because of a suspected case of anthrax, things should be back to normal in a couple of months. The camp is located near the Moyar River and counts 22 elephants (5 females, 17 males) fed twice a day (morning and evening) and free to roam in the nearby forest the rest of the time. The fact that the place is above standards regarding animal welfare (they do not use bullhooks nor allow elephant riding), that feeding sites are suitable for non-invasive experiments and that it is very near Masinagudi field research station made us decide on this location to apply for research permission. Obtaining a research permit in India is a long process but this trip allowed us to apply together and we hope to obtain research clearance soon so that Nachiketh can start the experiments.</p> <p><b>Elephant status in India</b></p> <p>During this trip, I learnt a lot about elephants in general and elephant status in India. For example, I knew that elephants have an acute sense of smell but I did not know that they could use it to check the physiological status of another individual or that the Jacobson’s organ, located on the roof of the mouth, was a powerful chemical-detection unit that elephants can use after collecting a substance with their trunk and placing it on their upper palate (“flehmen response”). The organ is attached to the oral/nasal cavities and primarily functions to detect the estrus status of a female. I have also learnt about the physiological (e.g. rise of testosterone; temporal gland secretions) and behavioural (e.g. aggressiveness) responses of male elephants in musth and that a “Makna” is a male without tusks (- yes, we start from scratch here)!</p> <p>Every five years, a national elephant census is conducted and the training for this census was happening when I was there. The Asian elephant (<i>Elephas maximus</i>) population in India was last estimated (2012) to be between 27,785 and 31,368 individuals, showing a 50% decrease over the last 60 to 75 years. <i>E. maximus</i> is classified as endangered by the IUCN Red list mainly due to habitat loss, degradation and fragmentation. The captive population is about 3,500 individuals living in camps, forest departments, temples, zoos or circuses. Although elephants hold a special status in Indian culture because they are considered as the embodiment of Lord Ganesh - the Hindu deity resembling to an elephant, captive care management in temples does not always match welfare requirements. And if our prediction that elephants have also evolved strategies to avoid sources of pathogen/parasite infection, these could be considered as means of improving captive conditions.</p> <p><b>Elephant camps</b></p>

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South-East India rich biodiversity. From left to right and top to bottom: wild boar; red-vented bulbul; Nilgiri tahr; chital; Indian giant squirrel; and white-throated kingfisher.



From left to right and top to bottom: Makna (adult male without tusks); mother smelling the anus of her offspring – hypothetically to check its physiological status; elephant sense of smell is very developed but vision is comparatively very poor; some elephant camps (e.g. Dubare) use chains and bullhook to train elephants for tourists; and elephants produce about 100 kg of dung per day.

Elephant camps have different practices across India. Some allow elephant riding and elephant bathing with tourists which imply elephant training using bullhook (see picture above), some others do not. Bullhooks are used to beat the most sensitive parts of an elephant's body (e.g. top of the ears, ankles). In almost all captive conditions

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in India (except perhaps in zoos), elephants have chains on their feet to constrain them to shorter distances. After being captured from the forest, elephants used for the enjoyment of tourists undergo a long process of training involving starvation, beats and chains which is similar across the different countries where Asian elephants range (see e.g. [www.youtube.com/watch?v=QzU8Jx4q4Q0](http://www.youtube.com/watch?v=QzU8Jx4q4Q0)). Among the camps we visited, Theppakadu and Bandipur were among the ones not using bullhooks. In Dubare, we witnessed the training session of a young elephant. We were quietly watching a trainer who wanted to give some medicine to the calf but as the young elephant would not rest peacefully, the trainer started to beat him. We could not stand the calls of this elephant responding in pain and we grimaced. The trainer told us to go away if we were not able to watch. He said: “I have to do this or I will get killed”. In other places, mahouts (elephant trainers) still use sticks but no bullhooks to be respected. As long as the demand for elephant riding and elephant show would be high, the beating will continue. Trip advisor and 160 other tourism companies already stopped recommending places that allow elephant riding.



Primate diversity in Karnataka and Tamil Nadu. From left to right and top to bottom: Gulmohar tree with a seating common langur; bonnet macaque; Nilgiri langur; gray langurs; yellow var. of Gulmohar with gray langur eating flowers; and bonnet macaque mother and infant.

## 6. Others

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