

Research Activity Report
Supported by “Leading Graduate Program in Primatology and Wildlife Science”
(Please be sure to submit this report after the trip that supported by PWS.)

25 Dec 2018	
Affiliation/Positionn	Primate Research Institute/D1
Name	Nelson Broche

1. Country/location of visit
Sri Lanka
2. Research project
International Training Programme on Terrestrial / Aquatic Wildlife and Primate Conservation 2018
3. Date (departing from/returning to Japan)
17 - 28 Nov 2018 (about 10 days)
4. Main host researcher and affiliation
Professors Charmalie Nahallage & Hermanthi Ranasinghe of the University of Sri Jayewardenepura
5. Progress and results of your research/activity (You can attach extra pages if needed)
Please insert one or more pictures (to be publicly released). Below each picture, please provide a brief description.
<p>Schedule</p> <p>17 Nov = depart Inuyama and begin travel to Colombo</p> <p>18 Nov = arrive in Colombo, city visit and shopping for personal necessities</p> <p>19 Nov = inauguration ceremony and introduction lectures at University of Sri Jayewardenepura</p> <p>20 Nov = mangrove exploration by boat at Madu Ganga, site visit to Fa Hien caves at Pahiyangala</p> <p>21 Nov = hike & lectures at Sinharaja Forest Reserve (UNESCO), evening lecture on marine wildlife</p> <p>22 Nov = marine wildlife observation by snorkeling at Unawatuna, evening lecture on human-elephant conflict</p> <p>23 Nov = observations at Bundala National Park (UNESCO), evening lecture on mountain-forest ecology</p> <p>24 Nov = hike and lectures in mountain forest ecological zone of Horton Plains National Park (UNESCO)</p> <p>25 Nov = climb Sigiriya rock plateau (UNESCO)</p> <p>26 Nov = visit archeological site and observe three sympatric primate species at Mihintale</p> <p>27 Nov = return to Colombo</p> <p>28 Nov = return travel to Inuyama</p> <p>The International Training Programme on Terrestrial / Aquatic Wildlife and Primate Conversation 2018 (ITP 2018) was jointly implemented by University of Sri Jayewardenepura (USJ) and Kyoto University Primate Research Institute (PRI) faculty members in order to introduce the unique ecological biodiversity of wildlife in Sri Lanka by experts in their fields. Through ITP 2018 we were provided an opportunity to learn about important marine and terrestrial biomes, their respective plants and animals, and conservation issues that are distinct to Sri Lanka. In terms of geographical size, Sri Lanka is slightly smaller than Japan’s northernmost island of Hokkaido, yet due to its tropical climate and wide diversity of physical environments, inhabits an abundant variety of animal and plant species.</p> <p>Arriving at Bandaranaike International Airport we were met by two USJ supporting staff who integrated into our travel group and kindly facilitated the remainder of our trip throughout various sites in Sri Lanka: Mr. Raveendra Kumara (PhD candidate, USJ) and Mr. Mohamed Atheeq (Instructor, Computer Technology, Faculty of Graduate Studies, University of Sri Jayewardenepura). Faculty coordinators of USJ consisted of Prof. Hemanthi Ranasinghe, Prof. Charmalie Nahallage, Prof. Prasad M. Jayaweera, and Dr. Kamal Ranathunga. Furthermore, we met each respective expert at each site we visited. Our group comprised of 9 graduate students and 3 faculty members of Kyoto University - 6 students and 3 faculty were from PRI and 3 students from the Kyoto University Wildlife Research Center (WRC). Interestingly, within this combined group, 6 nationalities were represented and each member came from a different scientific focus such as marine wildlife, veterinary sciences, and anthropology.</p>



*Island of Hokkaido
superimposed over Sri Lanka*

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On our first full day in Colombo we were oriented to the city and prepared for the following 10 days.

This was my first time to visit Sri Lanka and I knew very little about the country. In large part thanks to conversations with Raveendra and Atheeq, I began learning practical knowledge on the history and culture of Sri Lanka. And, much



of the information written here is through direct conversation with them, which I was very grateful. During the evening, we visited a Buddhist temple and as per custom we walked the temple grounds barefoot. Detail into the architecture and care of the temple grounds was evident and there was much reverence for the temple’s unique past such as historical artifacts on display. In and around the temple grounds was lively, not only with human inhabitants but also another primate. Gray langurs (*Semnopithecus priam*) were spotted in the trees and a peaceful co-habitation seems to exist. However, from my knowledge it is unclear whether gray langurs are tolerated throughout the rest of populous Colombo. Sri Lanka is a Buddhist

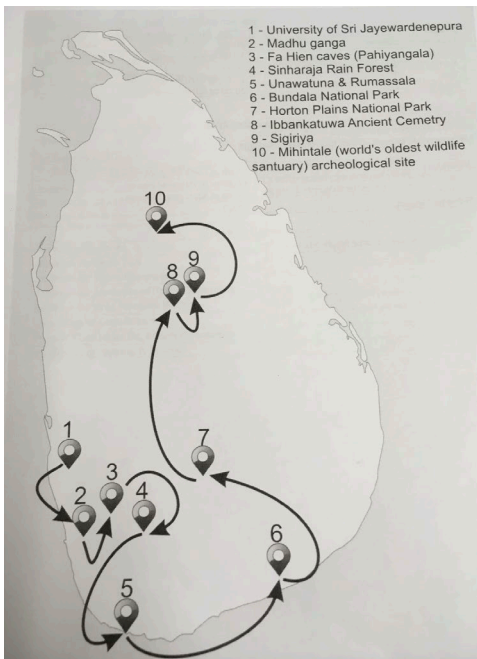
majority country, followed by Hindu and then Muslim. Religions in Sri Lanka also co-exist in relative peace and I learned that several customs and traditions from each religion are sometimes so highly integrated into common daily life that it can become difficult to clearly distinguish their origin.

Day two began with an opening ceremony and lectures at the USJ campus until evening. We received a spectacular welcome with traditional music, gifts, and each participant performed the customary lighting of the oil lamp – which has several positive symbolic meanings between host and guest. Prof. Ranasinghe (Dean, Faculty of Graduate Studies, USJ) held a welcome address and introduced the ITP 2018 program, which started a series of lectures from USJ researchers on various topics of Sri Lankan wildlife. Prof. Sarath Kotagama gave a keynote speech titled, “Linking biodiversity with the culture of Sri Lanka” in which he suggested that the cultural values of local people can determine their ability to conserve the local biodiversity. Such a topic is often omitted when discussing strategies in wildlife conservation solutions.



Prof. Huffman lights the oil lamp

From Nov. 20th onward, we began travel throughout the country. Madhu Ganga is located in the Galle District and is a coastal wetland ecosystem. With large cumulus clouds hanging over our heads Dr. Ranatunga led a boat excursion



Planned itinerary and their locations

through the waterways and into dense mangrove channels. There were occasional shrimp farms along the river, black cormorant, and a water monitor that was seemingly habituated to the sound of our boat. In the afternoon we visited Fa Hien Cave and Dr. Nimal Perera gave a brief history of the site and also explained how the site is important for understanding the cultural and physical evolution of modern humans in Asia. Archaeological excavation revealed the oldest modern anatomically human skeletal remains in south Asia, carbon dated to approximately 38,000 BCE. This community of humans left behind evidence of animals they consumed and adornments such as shell necklaces.

On Nov. 21st we visited Sinharaja Forest Reserve to learn about lowland rainforest ecology and its flora and fauna. The previous evening Prof. Sisira Ediriweera (Uva Wellasa University) lectured on concepts of forest ecology and his long-term project with Forest Global Earth Observatory (ForestGEO) at Sinharaja. Prof. Ediriweera is a principle investigator for ForestGEO which is a global network of scientists who monitor forest conditions across the world by tracking millions of trees, across thousands of tree species. He is committed to understanding forest ecology at Sinharaja in hopes of improving forest management and conservation practices. Walking along the Sinharaja Forest Reserve trail we found reptiles such as the green vine snake (*Ahetulla Nasutus*)

and the green garden lizard (*Calotes calotes*), and birds such as the jungle fowl (*Gallus lafayettii*) and the Sri Lankan frogmouth (*Batrachostomus moniliger*). Although the frogmouth was in close proximity to the forest trail, it was well

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camouflaged in a tree and hardly noticeable. By evening we arrived at Galle, a coastal city in southwest Sri Lanka, which still has many architectural features of its colonial past such as the Galle Dutch Fort and the nearby lighthouse. During the evening Dr. Ranatunga gave a lecture on the present status of coral reefs in Sri Lanka.

On Nov. 22nd we were able to visit several coral reef sites off of Rumassala, Unawatuna. Since wearing prescriptive glasses made it difficult to see underwater, I asked fellow student Mi Yeon Kim her thoughts on the corals. She mentioned that in her estimation upwards of 80% of the corals were dead and that some fish could be seen in their proximity but not many. Additionally, there are artificial coral reef plant sites in place but in less than desirable conditions. Her takeaway was that people should visit the remaining coral reef systems throughout the world since they are fast disappearing. By evening we traveled to Thissamaharana, a town in southeast Sri Lanka, and Dr. Prithiviraj Fernando gave a lecture on human-elephant conflict. Dr. Fernando studies the ecology and conservation of Asian elephants (*Elephas maximus*) and has made concerted efforts in reducing the human-elephant conflict in Sri Lanka. Due to increasing housing development, humans have encroached on the elephant’s natural habitat leading to increased human-elephant conflicts throughout Sri Lanka. One proposed solution was to translocate elephants into protected national parks but evidence gathered by Dr. Fernando and colleagues have shown that translocation can exacerbate human-elephant conflict and increase mortality, primarily because many of the elephants either travel long distances to return to their original home range or become lost and wander into human populated areas.

On Nov. 23rd our group had the opportunity to take a jeep safari ride through Bundala National Park to observe wildlife and migratory birds. Here we were able to observe many wildlife animals such as gray langurs, toque macaques (*Macaca sinica*), elephants, and a large diversity of bird species. Prof. Yumoto kindly pointed out several bird species, which were often found in close physical proximity to each other. In the evening we met with Prof. Ediriweera again, and he lectured on montane forest ecology to prepare us for the following day.



Example of biological diversity at Bundala National Park: in foreground possibly two species of (1-2) black-winged stilt (*Himantopus himantopus*); middleground (3) lesser whistling-duck (*Dendrocygna javanica*); upper-left corner likely a (4) greater sand plover (*Charadrius leschenaultia*)

On Nov 24th Prof. Ediriweera led our group for a hike in the mountain forest ecological zone of Horton Plains National Park. Horton Plains has rich biodiversity and is a protected area located in the central highlands (2,000 meters ASL) of Sri Lanka. A large male Sri Lankan sambar deer (*Rusa unicolor*) was laying down at the park entrance and this male was seemingly habituated to the many human visitors passing by. The park can

regularly receive high precipitation and during our trip we experienced low clouds, mist, and finally rain at the end of the hike. Low clouds are an attractive point for tourists visiting “World’s End” where a large valley cliff drops into low hanging clouds. Raveendra explained that on clear days the cliff reveals a green valley. But this precipitous environment also helps create micro marshland ecosystems in the region. One interesting ecological note I learned about was the Nelu, or *Strobilanthes* flowers. The Nelu is native to Sri Lanka and takes about 8 – 11 years until full flowering. When they are in bloom the forest has a purple-like color but when the Nelu’s life cycle ends, the forest floor receives more light than usual and other plant species can grow before the Nelu seeds germinate, repeating its life cycle. Nelu seeds are consumed by endemic jungle fowls but the seed contains an intoxicant, which can make the jungle fowl easy prey for local predatory birds. This plant species clearly shows how one plant can impact the local ecology on more than one level.

On Nov. 25th we were able to climb Sigiriya rock plateau located in central Sri Lanka, which is historically known to be a rock fortress of an ancient Sri Lankan king who usurped the throne from his father. The new king strategically used Sigiriya as his new capital since its rock formations provided natural defenses but in later centuries the rock plateau was used by Buddhist monks. A reoccurring motif in Sri Lanka is the lion and we could see that the entrance to the main palace summit had large rock carved into the shape of lion paws. The top of the summit was very impressive

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and provided a view of the wide green landscape. Some Buddhist temples could be seen in the distance.

On the morning of Nov. 26th, Prof. Nahallage gave a lecture on techniques for non-human primate behavioral sampling and then led our group to Mihintale Sanctuary. Here, we had the opportunity to practice behavioral sampling with semi-free-ranging toque macaques. The goal was to practically apply what we had learned in the morning lecture by creating 15-minute activity budgets for three individuals. This exercise was useful because, although 15 minutes per individual may seem short, the challenges of free-ranging observation quickly become evident such as easily losing sight of a focal individual when they enter deep into the tree canopy. Interestingly, Mihintale Sanctuary is said to be the oldest wildlife sanctuary in the world, dating back before the current era. And in close proximity to the sanctuary are the archaeological remains of an ancient hospital, which according to the information provided at the sanctuary dates back to the 800s CE. Despite the human visitors, and similar to the Buddhist temple visited on Nov. 18th, again I could observe that there was a peaceful co-existence of wildlife and humans at the sanctuary.

In the evening each student gave a short presentation summarizing what they had learned during ITP 2018. I spoke about the large biodiversity we observed during the trip and also how this experience has made me more curious to understand the importance of studying ecology not only for research purposes but also curiosity. Prof. Ranasinghe led the closing ceremony and thanked each of us for our participation in the course.

On Nov. 27th we began our journey back to Colombo but along the way we made a quick stop at Ibbankatuwa megalithic burial site, which is considered a prehistoric burial site. Several clusters of tomb ruins were on display. This again was another example of the long history of Sri Lanka. By evening we arrived back to Colombo.

On Nov. 28th we had a few hours before our plane departure. Atheeq showed a small group of us to the National Zoological Gardens, which is the primary zoo in Colombo. By late evening we departed back to Japan.

Overall this was a unique opportunity to experience many sides of Sri Lanka. Our hosts at the University of Sri Jaywardenepura gave us a big welcome and were very helpful every step of the way. Our group was very grateful to all staff and students at USJ who made this trip a success. Lastly, without the financial support of PWS, joining this international training program would not have been possible for me. Thank you.

Additional photos:



The group trekking back from Sinharaja Forest Reserve and Prof. Yumoto avidly photographing the wildlife.

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Entering the rock fortress Sigiriya.



This sambar deer was seemingly habituated to visitors at Horton Plains.

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A toque macaque at Mihintale Sanctuary. This species is characterized by its reddish brown coat and long toque-shaped hair at the top of the head.

6. Others