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 CETbio, PWS.)

	2018. 11, 27
Affiliation/Position	National Institute for Amazonian Research/Research Assistant
Name	Natsumi Hamada Fearnside

1. Country/location of visit

Japan, Yakushima

2. Research project

Yakushima Field Science Course. Study on deer sex hormone levels and deer and monkey DNA

3. Date (departing from/returning to Japan)

2018. 11. 03 – 2018. 11. 09 (7 days)

4. Main host researcher and affiliation

Dr. Sugiura, Associate Professor at Kyoto University and Dr. Agetsuma, Associate Professor at Hokkaido

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.

During this visit, I learned how to collect fecal material for both hormone and DNA analysis of Yaku sika deer and of Japanese macaques. Upon arrival on the island (Nov. 3rd), we were given an overview on how to use the GPS, the poison extraction kit, as well as the general safety protocol for following animals in steep areas. Then, the students were taken to the field site, where they were given a quick demonstration on how to identify deer and monkey feces and how to sample them for later DNA and hormone analysis. In the evening we were given a general introduction about the course, and learned everyone's name and field of research.

Nov 4th – I was assigned to the hormone group, which was divided into 4 subgroups, each being comprised of two students and one leader. Professor Agetsuma did a presentation on the Yaku sika deer and talked about what we would be doing in the field, which animals we should prioritize, and what questions we would try to answer with the data we collected. My group went to Hanyama for both the morning and afternoon. In the field, one student was responsible for collecting vocal and behavioral data, while the other was responsible for spotting if and when the focal animal defecated, as well as collecting the fecal samples, which were placed in a Ziploc bag using chopsticks made of twigs nearby and placed in a thermos bottle with cold gels in it. Each focal animal would be observed for a maximum of 2 hours. After each observation the students would switch functions. When we returned to the field station we transferred the samples to a labeled bag and put it in a freezer. In the evening, we would organize the data by filling it in an excel spread sheet, as well as process and organize the vocal data by separating the vocalization events into separate files and generating spectrograms of them.

Nov. 5th – I remained on the hormone group, but students were reassigned to different subgroups. In the morning my group sampled the Hanyama area, and in the afternoon we went to Kawahara. The data collection and processing activities were the same as the previous day.

Nov. 6th – The main groups were switched and I was reassigned to the DNA group. A brief explanation of our activities was given in the morning and we were told we would collect on the eastern/southeastern part of the island. In the field site, a sampling demonstration was done with deer feces (gently swab over feces surface and wash swab in a tube with lysis buffer). For deer feces, two samples were collected for each material, as one would go to Kyoto University and the other would be given to Dr. Agetsuma for his research. In the afternoon we split into three subgroups and each searched for samples in a different area. My group climbed up a forest path, but unfortunately, no samples were found in that area. Other groups however, were able to find and collect some monkey feces.

Nov. 7th – We split into three separate subgroups. Mine went to the Northern part of the island. In the morning we drove up a forest road and searched for feces on the road. After not finding anything we parked and walked up the forest road for an hour, yet still, no feces were found. In the afternoon we sampled the northern peninsula both by car and on foot. An old monkey feces was found and sampled, and many deer feces were sampled on the forested area of the peninsula.

Nov 8th – Three major data processing groups were formed: Vocal, Hormone and DNA. I was in the hormone group and we compiled the data into one datasheet, as well as crosschecked information from the spreadsheet with the labeled tubes. We also separated which samples would be used to answer each of the hypothesis proposed. In the end of the

afternoon each group presented on the results of their compilation and processing, and the vocal group presented preliminary analysis results. For dinner everyone helped make the food, some people made dishes from their home country, I made a Brazilian dessert called brigadeiro. We had a social gathering and good-bye party.
Nov. 9th – We cleaned the station and hiked in a park, where we went site seeing. Then, we went to the airport to head back to Kyoto.
I used this opportunity to learn more about how fieldwork is done for collecting fecal samples of both deer and monkeys, as well as how the different samples are prepared for later processing in the lab. I also learned how to collect vocal samples and do the initial processing of the recordings. This field course has also taught me a lot about Japanese culture and customs, which I was not entirely familiar with. It allowed me to meet and make connections with people from many different backgrounds and all around the world.

Fig. 1 – Student observing and taking notes on marked deer in the field. Photo by Sawada sensei

Fig. 2 – Student collecting deer fecal samples with natural chopsticks for future hormone analysis. Photo by Sawada sensei.

6. Others

I would like to thank JSPS and PWS for inviting me to take this course and sponsoring its expenses. This has been an incredibly enriching experience for both my professional and personal development and I am very grateful for the opportunity to participate in it.