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.)

	U2015. 06, 06
Affiliation/Positio	Universiti Sains Malaysia
Name	Aini Hasanah Abd Mutalib

1. Country/location of visit

Yakushima Island, Japan

2. Research project

Study on the behavior and seed dispersal/ destroyer characteristic of Japanese macaques (*Macaca fuscata yakui*)

3. Date (departing from/returning to Japan)

23rd May 2015 until 29th May 2015

4. Main host researcher and affiliation

1) Dr Akiko Takahashi (Wildlife Research Center, Kyoto University)

2) Dr Mari Nishikawa (Laboratory of Human Evolution Study, Kyoto University)

3) Mr Suzumura Takafumi (Wildlife Research Center, Kyoto University)

4) Mr Yosuke Kurihara (Primate Research Institute, Kyoto University)

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.

Figure 1: Map of Yakushima Island. Source: homepage of Ministry of Environment, Japan,

(http://www.env.go.jp/nature/isan/worldheritage/en/yakushima/area/index.html)

We were privileged to have this opportunity to visit Yakushima Island for a week. During this visit, I was one of members of Monkey Team. We were divided into two teams; Yamamomo team and DNA team. I was in Yamamamo team, under the guidance of Dr Akiko Takahashi and Mr Yosuke Kurihara. Our first objective is (1) to determine if the Japanese macaques (*Macaca fuscata yakui*) is the seed dispersal or the seed destroyer. To fulfil the study, we have tracked the monkey groups along the Seibu road to collect their feces samples. Diameter of the feces can reflect the body size of the monkey, and we collected the sample to see the ratio content of destroyed Yamamomo seeds with intact seeds. We waited after the monkey has completely finished the defecation process to ensure minimal disturbance. The feces were inserted in a sample bag, and details of age groups and sex of the monkey, location, collection time and date were recorded. In the lab, average diameter of feces was measured by using Vernier caliper. Feces were washed down by using sieves to count the number of intact and destroyed numbers. We also measured the thickness of both intact and destroyed seed by using Vernier Caliper. The hardness of the seeds was measured by using Durometer. Details were recorded in the data sheet and statistically analyzed by using R-Software, by using Generalized Linear Model (GLM). Graph of the GLM was plotted as ratio of destroyed seeds against the diameter of the feces.

Figure 2: After the feces was collected, we put the samples in the plastic bag. We labelled the bag with the information such as the collection date and hour, location, series number, and information regarding the Japanese macaques (age group and gender).

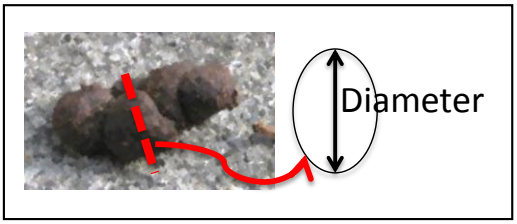

Figure 3: The diameter of the feces could reflect the body size of the macaque.

Figure 4: We used sieves to clean the feces and separate between the destroyed feces with intact feces.

Our second objective is to see the measurement of the fruit. We have collected the fruits by using tall scissors and climbing the trees. We have categorized the fruit according to Pattern 1 (Non Green/ Green), Pattern 2 (Green/ Green/Red) and Pattern 3 (Green Green, Green, Red, Green/ Red). We measured the fruit's diameter, thickness and hardness.

Our third objective is to determine the Japanese macaque's behavior in every 5 minutes time interval. We observed and categorized the behavior according to four categories; which were grooming, feeding, resting, and travelling.

Figure 5: Image showed the Japanese Macaques were grooming each other

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I used this opportunity to learn about Japanese Macaque. As it can be found only in Japan, I really appreciate seeing them in the wild. I also enjoy the biodiversity and forest structure of Yakushima Island. The forest has many different structures compared to Malaysia's forest.

Through this experience, I have developed a clear vision on how to cope with behavior of primate, specifically on *Macaca fuscata yakui*. I always believe that ecosystems and its elements are interconnected. Losing some would cause continuous effect towards others. In this case, it is interesting on how *Macaca fuscata yakui* contributed towards the food resource to Yaku shika deer. This is due to that, Yaku shika deer fed on the Japanese macaques' feces. Sometimes, Japanese macaques on the tree dropped the fruit down under, to facilitate the Yaku shika deer in finding food.

Understanding the behavior of Japanese macaques, especially in the wild would be a great help in the future conservation of habitat in Yakushima island. Endemic to Yakushima island, the population is considered as least concern by IUCN Red list. However, by knowing their behavior we could decide if the Japanese macaques are dispersal or destroyer of the fruit. In our study, we have managed to get a positive correlation between the size of feces with number of intact seeds, however there is no significant correlation. Perhaps with longer sampling period and more samples, these findings could be improved.

We are currently working on a paper based on these results for publication in an academic journal.

6. Others

First and foremost, thank you Kyoto University for having me here. It is such an honour to stand a chance working in the field of Yakushima Island, one of the UNESCO's World Heritage Site.

I would like to express my gratitude and deepest appreciation to the lecturers and student assistants. I would like to say thank you to my teammates : Aditi, Shintaro, Hiroko, Makiko, and Emi for their cooperation and hard work. I really had learnt a lot and hope that this knowledge can be used in my future research. Also, I had fun during the field and lab work.

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Figure 6: Group picture of Monkey Team