

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.)

	2015. 10. 27
Affiliation/Position	Network Centre of the Research in Anthropology, Lisbon, Portugal
Name	Raquel Costa

1. Country/location of visit	Yakushima, Kagoshima, Japan
2. Research project	Training course in Yakushima Field Site: understanding the relationship between body size, age and fecal pellet in Sika deers (<i>Cervus nippon yakushimae</i>)
3. Date (departing from/returning to Japan)	18. 10. 2015 – 2015. 10. 24 (6 days)
4. Main host researcher and affiliation	Dr. Hanya, Dr. Yumoto and Mr. Kurihara, University of Kyoto
5. Progress and results of your research/activity (You can attach extra pages if needed)	<p>Please insert one or more pictures (to be publicly released). Below each picture, please provide a brief description.</p> <p>The main focus of this training course was to understand the relationship between body size, age and fecal pellet in Sika deers (<i>Cervus nippon yakushimae</i>) in Yakushima Island. Current populations of Sika deer are increasing continuously since 1950, leading to some researchers to believe that damage to the vegetation caused by bark stripping, grazing and browsing by these animals, will soon raise to a serious ecological problem in the island. In order to contribute to the control and management to this species, our research aimed to prove the correlation between pellet size, age and sex in Sika deer, using a non-invasive method of data collection. In fact, the last official census of the Sika deers in Yakushima dates from 2011 and currently pellet counting methods have become a vital tool for wildlife population census, granting additional knowledge of sex and age structure, growth, mortality and reproductive status of the population. Our data collection consisted in tracking the deers (from 7:45 to 15:00, day 19, 20 and 21) on the western shore of Yakushima Island, in Seibu Rindo, between road and low-land (secondary and primary forests). After encountering one deer (or a group), the researchers followed and wait for the animal to defecate. The feces were then swabbed for DNA analysis and collected in marked plastic bags. A camera was used to record a video of the animal and a video of the researcher holding a measure, to latter estimate the animal high. In the lab, pellets from each sample were counted and measured (longer and shorter axis) as well as conducted the video analysis to calculate the deer’s body size. Concerning the statistical analysis, we found no correlation between the body size and the size of</p>

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the pellet but we did find a significant relationship between adults and juveniles for both long and short axis, suggesting that pellet size is affected by age. However, our study faced some limitations: small sample size (biased to females), inaccurate method of the animals’ body size estimation, possible contamination and group inter-reliability. To overcome these limitations, we suggest that future research should use more age classes, should compare several sites and between low-land and high-land populations. In conclusion we suggest that the pellet method can indeed be used to census Sika deers populations. Our results were presented to Professors and other team in the day before leaving the site.

Personally, I used this opportunity to observe wildlife (Japanese macaques (*Macaca fuscata*), deers and their inter-specific interaction). I’ve learned how to integrate methods (observation data collection, physical data collection and their consequent analysis), analyzing and discussing results critically. Through this experience, I have developed the notion of how to work in team, overcome problems and obstacles related to research. Finally, this course granted me the basic information of some methods that I’ll use in the future.



Fig. 1. Japanese macaques grooming in the road in Yakushima Island (Seibu Rindo).



Fig. 2. Japanese macaque in Yakushima Island (Seibu Rindo).

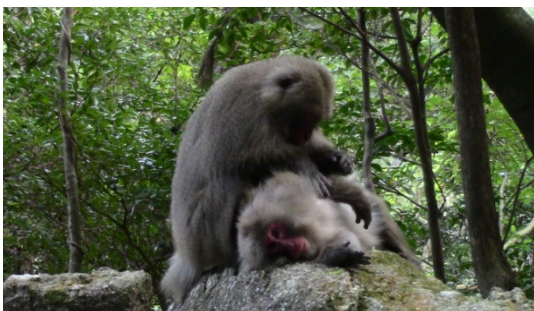


Fig. 3. Japanese macaques grooming of Seibu Rindo, Yakushima Island.



Fig. 4. An infant Yaku deer in Seibu Rindo, Yakushima Island.

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Fig. 5. Adult and infant Japanese macaques in the road of Seibu Rindo, Yakushima Island.



Fig. 6. A group of Japanese macaques in the road of Seibu Rindo, Yakushima Island.

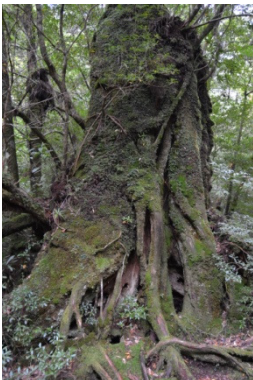


Fig. 7. A Yaku cedar in Shiratani Unsuiiko Park, Yakushima Island.



Fig. 8. Sempironotaki Waterfall view in Shiratani Unsuiiko Park, Yakushima Island.



Fig. 9. A group of Japanese monkeys in the road of Seibu Rindo, Yakushima Island.



Fig. 10. A small waterfall in the forest of Shiratani Unsuiiko Park, Yakushima Island.



Fig. 11. Boardwalk trail through the forest of Shiratani Unsuiiko Park, Yakushima Island.

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Fig. 12. Okonotaki Waterfall, Yakushima Island.



Fig. 14. A male Japanese macaque feeding in Seibu Rindo, Yakushima Island.



Fig. 13. Seibu Rindu forest, Yakushima Island.



Fig. 15. An infant Yaku deer in Seibu Rindo, Yakushima Island.



Fig. 16. Seibu Rindu forest, Yakushima Island.

6. Others

I wish to express my gratitude to Prof. Goro Hanya for his guidance and patience; to Prof. Yumoto, my colleagues and staff at ISSO Field station for their support and suggestions. I'm also thankful to the Yakushima local community for their hospitality.