

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

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Affiliation/Position	Primate Research Institute/D1
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1. Country/location of visit
Iriomote, Japan
2. Research project
Course on appreciation of fauna and flora of Iriomote and the use of drones for monitoring mangrove forests.
3. Date (departing from/returning to Japan)
2016. 10. 24 – 2016. 10. 28 (05 days)
4. Main host researcher and affiliation
Dr. Matsuzawa (PRI), Dr. Kohshima, Dr. Takizawa (WRC), Dr. Nishida and Dr. Watanabe (Ryukyu University)
5. Progress and results of your research/activity
<p>Iriomote island is a unique place that is 289.27 km² and it is located in the south western part of the Okinawa prefecture, about 200 km east of Taiwan. After an hour ferry trip from Uwahara port in Ishigaki island, we arrived at the station where we stayed next to the Ryukyu University field station. It was very impressive when we arrive to an island that is still 90% covered by dense forests and mangrove swamps, and very different from the rest of Japan. The island has no big factories or restaurant chains, and it was immediately refreshing to be in an extremely natural and clean environment free from the concrete world most of us are accustomed to. It has 67% of all mangroves in Japan in this island and 80% of it is protected by the government. The main industry is tourism and the local people were extremely welcoming from the moment we stepped out of the ferry until the last day when we had to leave, but it also has a great agricultural section and it can be seen by the many fields of pineapples, mangos and other fruits. The island has a lot to offer from pristine beaches with white sand, beautiful coral reefs that offers its visitors great opportunities for diving or snorkeling, mangrove forests along the Urauchi-gawa (the largest river in Okinawa) with beautiful views of waterfalls and unique mangrove plants, and impressive wildlife such as their big bats, fireflies and many bird species. Although we did not have the opportunity to see it ourselves, it also has the critically endangered Iriomote cat, which its population is reportedly of only 100 individuals, is only found in this island.</p> <p>As our main goal for this course, we wanted to learn and practice how innovative technology, such as drones, can be a useful tool to monitor local mangrove forests. Local scientists, such as one of our hosts, Dr. Watanabe, have used drones to obtain orthomosaic images, such as the ones seen in “google earth” to monitor growth, expansion and changes of the highly important mangrove swamps. With a combination of global navigation satellite systems, drones and imaging, it is possible to monitor the impacts of extreme weather, such as the 2008 typhoon that affected the area, and how the mangrove has naturally recovered now that it is protected. After a lecture on safety and use, all of us had the opportunity to learn how to use drones, obtain data and learn the potential uses to monitor local fauna and flora. It was very impressive to see the multiple uses and convenience of using drones or unmanned aerial vehicles, and I am extremely excited for the possibility of using it in my future research when I have the opportunity to study wildlife populations.</p> <p>When we were not learning how to use drones and gathering data, we had the opportunity to go kayaking along the river, then a hike to see the dense forests. We also went on a boat ride to see local wildlife and a hike to the Mariyudou waterfall. We saw many of the 10 endemic vascular plants and were guided by local researchers who have studied in the local forests extensively. At night, we went on night-time hikes to listen to the many birds, amphibians and on one occasion we went snorkeling where we saw the beautiful coral reef, where we saw white tipped sharks and sea snakes, among many other fish and wild life. We were guided by experienced locals and Dr. Nishida was very helpful in teaching us some of the local marine animals.</p> <p>It was definitely a great opportunity and I would recommend this excursion to all students and researchers that appreciate nature, good people and food, and the opportunity to get in touch with a pristine natural habitat. I am very grateful for learning about drones, the opportunity to take place in such a special trip with a great group of people, and the PWS program for their support. I would like to thank Dr. Matsuzawa, Dr. Sugiyama, Dr. Koshima, Dr. Nishida, Dr. Watanabe, and Dr. Takizawa for making this great journey happen. As well as all staff and colleagues from Kyoto University, WRC, and Ryukyu University for making this trip possible.</p>

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(Above) Views from our hikes along the rivers in Iriomote Island and Kampire no taki (waterfall), we hiked with scientists that have studied the island well.



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(Above) Learning and practicing how to use drones for mangrove surveys at Iriomote, Okinawa. We spent 3 days in 3 different locations (research field station, agricultural field and coastal range) learning how to use the drones.



(Above) We could have a taste of living the island lifestyle, eating fresh food (from catching to preparing), enjoying kayaking, snorkeling in beautiful beaches, and learning about local fauna and flora when we were no learning about drones and gathering data.