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

(This report must be submitted within two weeks of the end of your PWS-sponsored trip.)

	2025/10/13
Affiliation/Position	Wildlife Research Center/L1
Name	Isa Walker

1. **Country/location of visit**

Chubu University, Gifu, Japan

2. **Research project**

We learned about the application of drones in various areas of fieldwork, and had the opportunity to fly them as well.

3. **Date (departing from/returning to Japan)**

2025/10/8 - 2025/10/10

4. Main host researcher and affiliation

Ikki Matsuda (Kyoto University, WRC), Satoru Sugita (Chubu University); Keiko Ioki (Musashino 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.

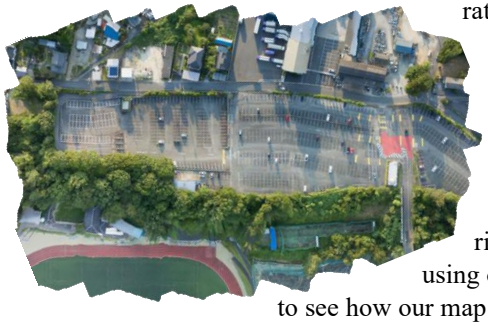
During this visit, I learned about the many applications of drone-based research and the various devices that are currently utilized for fieldwork. The course spanned 3 days, taking place at the Ena campus of Chubu University in Gifu, Japan. On the first day, we attended a lecture given by Sugita-sensei, who discussed his research background and the applications of drones in his own work, as well as provided an overview of how to operate drones and the various laws and regulations regarding their use. This lecture is shown in the photo to the left.

The next day, we discussed manual drone operation in more detail, learned how to carry out a simulated drone flight, and had the opportunity to fly small "practice" drones around the classroom. This was a fun way to get used to the controller and the movement of the drone! There were four students in total for the course, so we paired up in teams of two. After lunch, we went outside to fly the larger drones! I have flown a drone a couple of times, back home in the U.S., but the flight did not last long. My partner, Alexander Hendry, had never flown one, so it was fun to learn together. The picture to the right shows one of our first flights, where we flew the drone over 400 meters away!

This is one of the photos that we took with the drone that afternoon. With the controller, we were also able to watch the camera's view during the entire flight, which was very interesting! While looking through these images, I was thinking about the process of measuring the visibility of the drone at various heights. I did some research and found a project that has proposed a camera-based visibility estimation method using multiple Deep Learning models!

Later in the afternoon, we went back to the classroom to learn about setting up an automatic flight using a computer software. After each team created both a linear route and a survey route, we returned to the soccer field outside to perform our automated flights. This was an interesting process because we did not use the controller to direct the drone; rather, it was following a predetermined path. The photo to the right shows us setting up the drone.

On the final day, we focused on processing images taken by drones using the Agisoft Metashape software. Since the images can take a long time to load, we used photos previously taken rather than our own from the day before. This process utilized all of the photos taken by the drone during an automated survey flight, ultimately creating a map of the surveyed area. Our homework was to follow the same process, this time using our own photos.



The image on the left is the map we generated using the previously taken photos. The map to the right is what I generated at home using our own images. It's interesting to see how our map turned out, because Alexander and I created the automated path in the shape of a heart. However, due to the orientation of the photos, the map doesn't really resemble that shape. ☺

Before departing, we were also given a lecture by Ioki-sensei from Musashino University, who discussed the use of drones in her own work in Malaysia. I really enjoyed learning from Ioki-sensei, as her work is primarily focused on forest restoration, which I am very passionate about. The application of drones in her study is also really inspiring.

Overall, I found this training course very eye-opening, engaging, and fun! It was really nice to connect with my peers and Matsuda-sensei, as well as to meet and learn from other sensei, each carrying out very unique research. I am looking forward to implementing drones in my own research plan, and am excited for similar opportunities in the future.

Thank you to everyone, especially Matsuda-sensei, for a wonderful training course! The final photo is all of us at the entrance of Chubu University before heading back to Kyoto. ☺

6. Others