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## GPOCP October 2024 - Capacity Building in Sri Lanka & Genetics in the Jungle

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Dear Friends and Supporters,

It was a wonderful October for GPOCP, with lots of activity in the lab at Boston University as well as all of our programs in West Kalimantan. Dr. Caitlin O'Connell, our Deputy Director, is currently in Indonesia visiting our office in Ketapang, our conservation programs, and the research station inside Gunung Palung National Park. I am looking forward to updates upon her return.

For October's issue of *Code RED* we hear from Widiya, our Environmental Education Manager, about the group capacity building trip to Sri Lanka! We were so excited to be able to send our program managers to visit the Turtle Conservation Project (TCP), proposed and hosted by their director, Thushan Kapurusinghe. Endangered species face similar challenges around the world and learning about TCP's work with local

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communities and habitat protection provided great inspiration to our team and built new connections.

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Our second article is from Ziya Hoirh, our Microbiome Research Assistant, who has been integral to the success of BU graduate student, Zoe Albert's project. It is amazing that we can now sequence DNA at our remote research station and Ziya played a key role in making this dream a reality. Read about her adventures helping to get a genetics lab up and running deep in the tropical rainforest!

Wishing you a safe and healthy November.



Cheryl Knott, PhD  
Executive Director

[Gunung Palung Orangutan Conservation Program \(GPOCP\)](#)

## Crossing Oceans for Conservation: Yayasan Palung's Staff Exchange with Sri Lanka's Turtle Conservation Project

*By Widiya Octa Selfiany, Environmental Education Manager*

In September, I had the incredible opportunity of travelling from Indonesia to Sri Lanka with my colleagues from Yayasan Palung—Edi, Desi, Erik, Ranti, and Hendri—for an invaluable knowledge exchange with the Turtle Conservation Project (TCP). Our Goal? To deepen our understanding of sustainable natural resource management.



*Arriving at the airport in Colombo, Sri Lanka, welcomed by the Turtle Conservation Project Director, Thushan Kapurusinghe (center).*

### **Learning from Sri Lanka's Coastal Conservation Efforts**

When we arrived in Colombo, we were warmly welcomed by TCP's co-founder and project leader, Thushan Kapurusinghe, and his colleague Mayhisah. Although we were tired from the journey, Thushan's introduction to TCP's initiatives—especially their ambitious mangrove restoration project—quickly energized us. After a bus ride to Puttalam, we visited Puttalam Lagoon, Sri Lanka's largest lagoon system, famous for its diverse ecosystems and wildlife inhabitants, including crocodiles and waterbirds such as flamingos and storks. As we shared dinner later that night, we excitedly discussed the itinerary for the week ahead.



*Out on the water to observe the mangroves and TCP's mangrove restoration project.*

The following day, we travelled to Rekawa, a quiet coastal village in southern Sri Lanka renowned for its vital role as a nesting site for sea turtles. Each year, green turtles, hawksbill turtles, and leatherbacks return to lay their eggs—a truly remarkable natural phenomenon. We joined TCP's night-time turtle observation program, which not only allowed us to witness the nesting turtles up close, but also educated us on the importance of protecting these endangered species. Carefully keeping our distance, we watched as the turtles dug nests to lay their eggs—a moment that strengthened my own commitment to wildlife protection. Seeing these turtles under the moonlight was a profoundly moving experience.



*Learning about turtles and conservation at Rekawa Turtle Sanctuary.*

**A Glimpse into Nature-Based Tourism and Partnership Building**

Another unforgettable highlight was our visit to Yala National Park, where we set out on safari in open jeeps. Cruising through Yala's incredible landscapes of grasslands, swamps, lagoons, and forests, we were lucky to observe a leopard, a truly unforgettable experience. We also spotted Asian elephants roaming the grasslands, groups of deer foraging by the water's edge, crocodiles sunbathing on the edge of the lagoon, buffalo grazing in open areas, and majestic birds including sea eagles and peacocks. I was deeply inspired by the way Sri Lanka manages its national parks to conserve biodiversity while welcoming ecotourism. The dedicated guides not only helped us spot these incredible animals, but also shared insights into their behaviors and the delicate balance of the Yala ecosystem. For me, it was a perfect example of how conservation and education can go hand in hand.





*Exploring National Parks and incredible sights in Sri Lanka.*

Our journey continued into the cool highlands of Nuwara Eliya, a mountain town located 1,868 meters above sea level. The city is often referred to as “Little England” due to its cool climate and scenery reminiscent of the English countryside. Nuwara Eliya is famous for its rolling green tea plantations, beautiful gardens, and still-preserved British colonial architecture. We then visited Victoria Park, one of the largest parks in Sri Lanka, where park managers explained how they preserve the diversity of the park while managing it as a popular tourist destination.

Our journey then continued to Horton Plains National Park, a UNESCO World Heritage Site known for its unique ecosystems, including forests, grasslands, and swamps rich in biodiversity. We trekked to World’s End, a stunning cliff with a breathtaking 870-meter drop. Along the trails, I saw firsthand how well they managed visitor access to protect the environment while providing visitors with an unforgettable experience.

One evening, we had dinner with staff of the Indonesian and Malaysian Embassies in Panadura. It was a wonderful opportunity to share our initiatives, exchange ideas, and present Thushan with a token of appreciation for his hospitality. In return, he awarded us certificates marking the completion of our knowledge exchange—a meaningful memento of our time in Sri Lanka.



*It was an honor to meet and have dinner with the Indonesian ambassador to Sri Lanka, Ibu Dewi Gustina Tobing (left), seen here presenting a certificate to Village Forest Manager Hendri Gunawan.*

### **Reflecting on a Journey of Shared Commitment and Friendship**

Thinking back on this journey, I am filled with gratitude for the generosity and hospitality of Thushan, TCP, and all the people who welcomed us. This experience gave us fresh ideas, strengthened our understanding of conservation practices, and brought new friendships that will continue to inspire me. Above all, it reinforced that conservation is a global responsibility. While the specific challenges we deal with at Yayasan Palung may differ from those in Sri Lanka, our shared commitment to preserving the natural world connects us, no matter where we are.





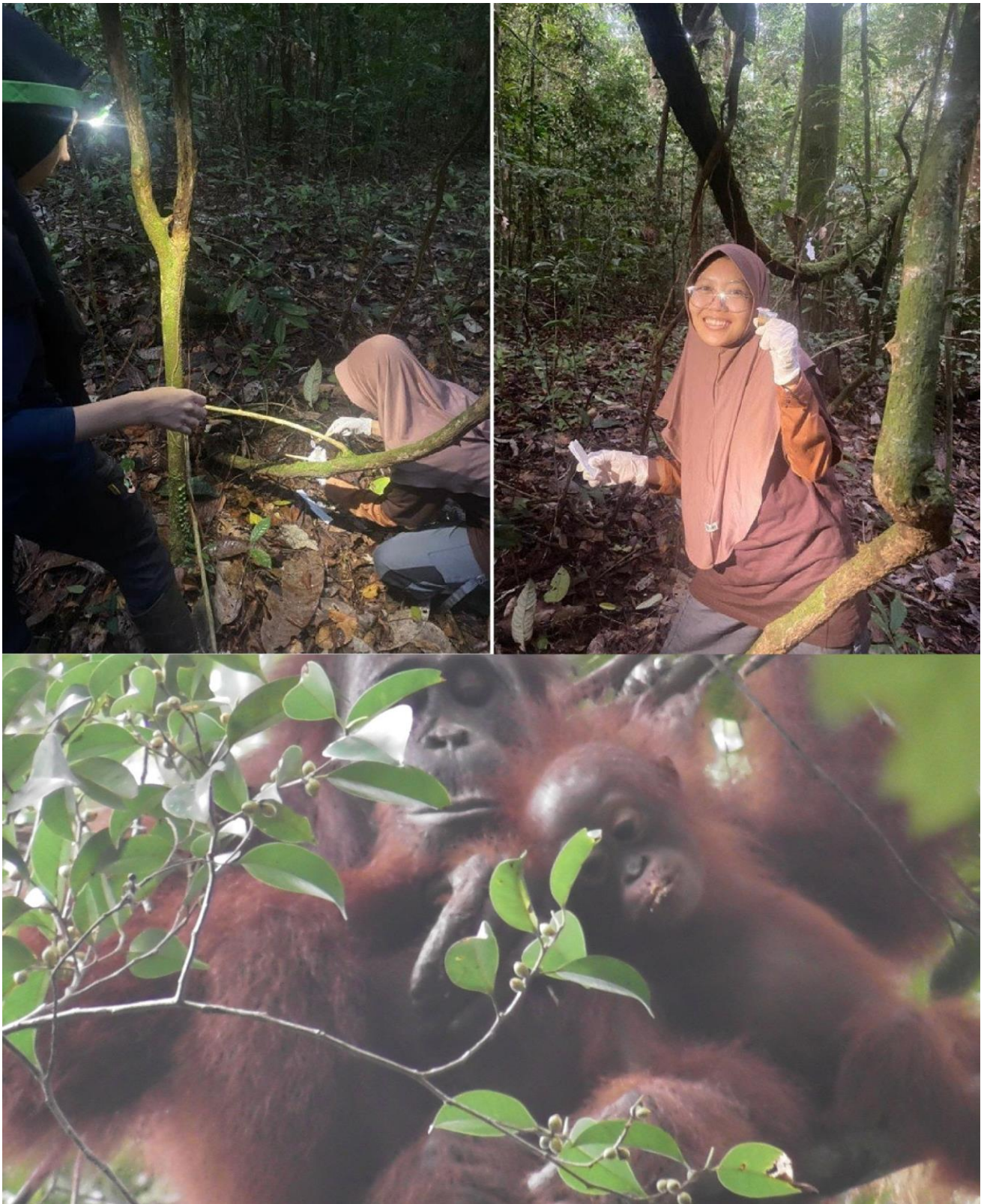
*Learning and exchanging ideas about livelihoods for community members (top), and having a farewell breakfast at Thushan's house (bottom).*

## Crazy and Ambitious: Establishing a Genetics Laboratory in a Tropical Rainforest

*By Ziyadatul Hoiroh, Research Assistant, GPOCP/Yayasan Palung Microbiome Lab, CPRS*

“Hotel in the jungle” is what one of my friends called Cabang Panti Research Station (CPRS) after visiting. For me, CPRS is the first orangutan research site I’ve ever visited, and it’s quite far from my home on Madura Island, just off the coast of Java. At first, I wasn’t sure what they meant, but now I understand—it’s a comfortable place with cozy housing, good facilities, and a unique “crazy” attraction that drew me here: a microbiome genetics lab, right in the heart of the rainforest! As a recent biology graduate from the National University (UNAS) in Jakarta, I’d heard a lot about orangutans through my campus primate study group, but I’d never actually seen one. That all changed with my role here.

The first time I saw orangutans (a mother and juvenile named Bibi and Bayas), I was collecting fecal samples for our microbiome work. Although they were high up in the canopy, too far to see clearly, I was thrilled! Then, during my first official “search” day with one of the senior assistants, Herman, we had an incredible experience: we spotted four orangutans—two mothers (Tari and Kabar) and their infants (Tara and King). While resting and scanning the surroundings, we heard branches rustling and turned to see both pairs nearby. Deciding to follow Tari and Tara because it had been so long since they had last been observed, I got a clear view of both orangutans, observing their unique interactions. Watching Tari care for her offspring, carrying, playing, and even ‘kiss-squeaking’ to protect her from us humans was breathtaking. We followed them until around 4 pm, when they built their nest for the night, then returned to camp, tired but exhilarated.



*Ziyadatul's first fecal sample collection (top), and adult female orangutan Tari with her infant Tara (bottom)*

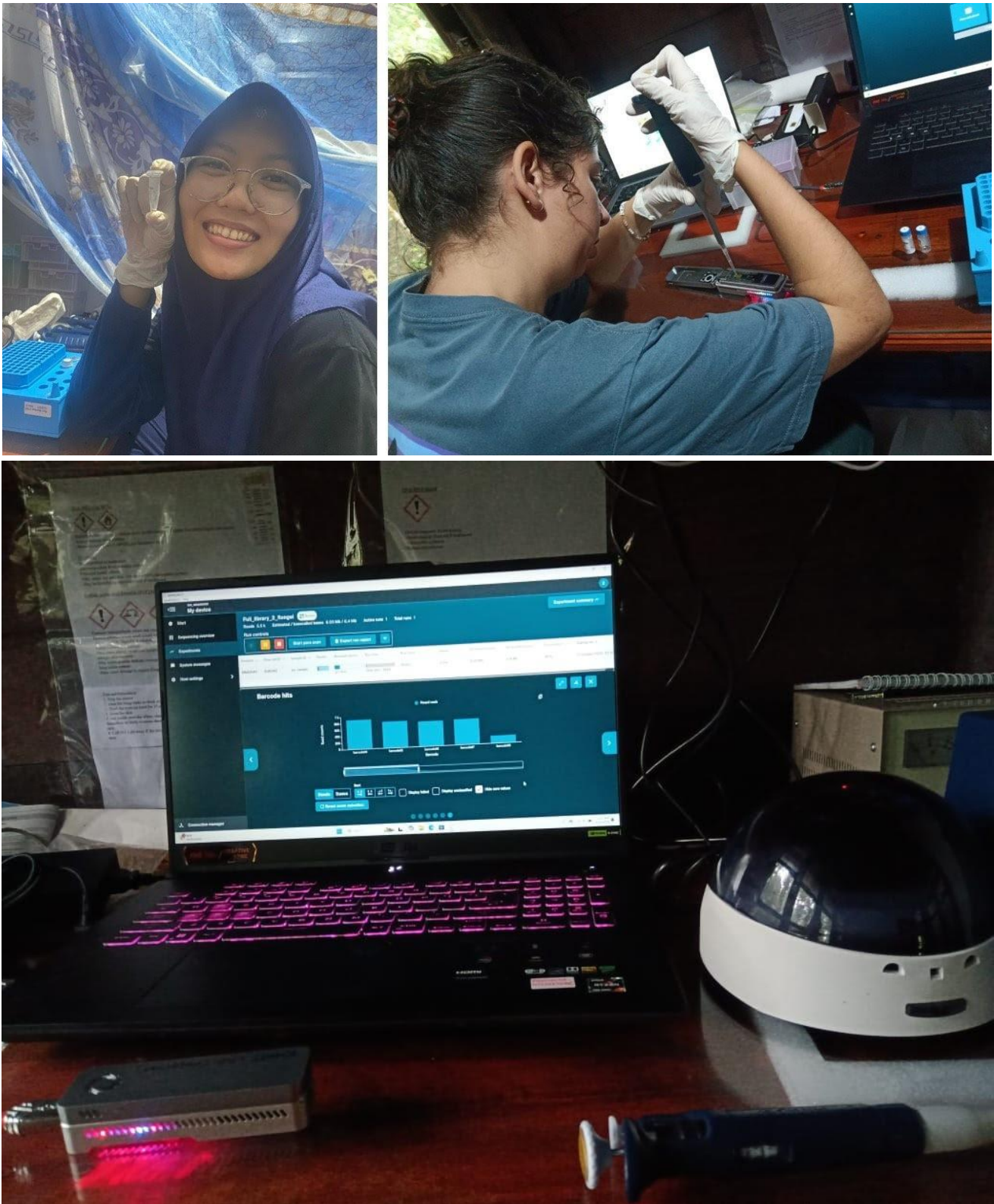
My role here is as a project research assistant and counterpart to Zoe Albert, a PhD student from Boston University who is studying the gut microbiome of orangutans. She is the “crazy person” who established this genetics lab in the middle of the rainforest, with the support of the national park (BTN) and guidance from her advisors at Boston University and elsewhere! Our Microbiome Lab team consists of Zoe and her two assistants, me and Eli Miller. I call us a small, crazy, but cool team. Before coming, I was nervous about communication because my English skills aren't the best. I tried refreshing what I'd learned in a course five years ago, watching YouTube conversations, and listening to English, hoping I'd manage. Thankfully, Ishma Fatiha, a fellow assistant fluent in English, helped, and Zoe was incredibly patient, speaking in Indonesian

and helping me practice English. Another challenge was my lack of experience with microbiome analysis using Oxford Nanopore Technologies' MinION for DNA sequencing (Next Generation Sequencing). Here, I've learned invaluable DNA sequencing skills—thanks to Zoe and Eli, who welcomed me into the team, patiently taught me, and trusted me to be part of the research.



*The Microbiome Lab Team: Zoe and Ziyadatul in the Lab (left); Ziyadatul, Eli, and Zoe in the Field (right).*

Being the first to do something is never easy, and that's something we, the Microbiome Team, have felt here—especially since our lab is in the middle of a remote rainforest, far from the city. We had to carefully prepare all the equipment and materials we might need for the research, adjusting to power limitations that sometimes required shutting down parts of the camp to keep our instruments running. Over the past five months, we've faced plenty of challenges, like equipment breaking due to voltage issues, redoing sample extractions because we needed positive controls, dealing with a malfunctioning gel electrophoresis machine (BlueGel), running out of supplies for the miniPCR machine, and sometimes needing to repeat PCR runs because the positive control bands weren't clear enough on the gel. At one point, our MinION flowcell didn't have enough nanopores, so we had to replace it with a new one. These obstacles haven't stopped us; instead, they've increased our understanding and taught us valuable new skills. Our motto, *"It's okay to mess up, but it's not okay to give up,"* has been our reminder to persevere through every lab challenge we've encountered. Some people might find microbiome lab work tiring because of the long series of intricate steps required to get DNA sequencing results. Yet, for me, each step has been enjoyable and challenging. Over these five months, I've learned so much—DNA extraction, Quantus, PCR, gel electrophoresis, and MinION analysis—and now, in our final month, we're getting the results. It's incredibly rewarding; all the hard work over these long months is finally paying off as we obtain the DNA sequences and identify the types of bacteria found in the guts of wild orangutans!



*Five months of hard work (14  $\mu$ L Final Library Prep!) (top left); Loading sample into MinION (top right); Final Step! running samples using the MinION Flowcell and MinKNOW application (bottom).*

In addition to learning about DNA sequencing with MinION analysis, I've gained so much valuable experience here. I've learned about orangutan behavior, fecal sample processing, parasites, urine analysis, and dietary habits. Living in a pristine natural environment, I have encountered species I had never seen before and met dedicated individuals working tirelessly to preserve orangutans and their habitat. My English skills have improved from practicing directly with native English speakers, including Zoe Albert, Eli Miller, Jay Cogan, Tia Mottram and Ritika Sibal. I even learned to make *rasam* rings and discovered a new hobby—cooking!

Living in the heart of the rainforest isn't always easy. I've faced some challenges, like dealing with leeches, bees, constant rain that makes it hard to dry clothes, and listening to ghost stories from assistants—leading me to share a room with my friend Ari Marlina! And, of course, there aren't snacks like in the city, but we get creative with what's available. Despite these difficulties, the good far outweighs the hard moments here at SRCP. I am deeply grateful to Tri Wahyu Susanto and Dr. Cheryl Knott for this precious opportunity to learn and gain experience at CPRS, and to all the incredible assistants and new friends who welcomed me so warmly. I hope this project we've started continues, yielding valuable results and advancing into the future.



*Fun times with the CPRS crew!!!*

Thank you, CPRS, for the knowledge and unforgettable experience!

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*Management of Cabang Panti Research Station is conducted by the Gunung Palung National Park Office (BTN-GP) in collaboration with GPOCP/YP. Scientific research is carried out in conjunction with the Faculty of Biology at Universitas Nasional (UNAS) and Boston University.*

"In the end, we conserve only what we love. We will love only what we understand.  
We will understand only what we are taught."

~ **Baba Dioum, Senegalese poet**



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