



Gunung Palung Orangutan Conservation Program



April 2016

Issue: 40

Code RED

An e-newsletter from your friends in West Kalimantan

Dear Friends and Supporters,

Welcome to another month of *Code RED*. Those of you who were able to tune into our Nat Geo WILD episode of *Orangutans on the Edge*

have already heard this story, but for those of you who haven't seen it yet, we have some sad news to share about wild orangutan, Walimah, and her infant. Read the second story below to find out what happened. Although Walimah experienced this tragic event, we are happy to say that she is doing well now, and hopefully in the future we will be able to share more good news about her life with you.

This month we introduced a new project to our conservation staff: spatial analysis of data using GIS! We are very grateful to our GIS consultant, Dr. Amanda West, for her expertise and hard work this month in training GPOCP staff, National Park staff, and local village heads in basic GIS mapping. Amanda tells her story in the first article below. We are very excited about this new work and all of its potential applications to conservation management in the Gunung Palung landscape, and promise to keep you updated on future

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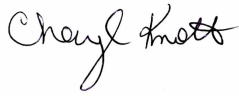
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Orangutans are More Like Us Than You Think

Celebrating Earth Day

developments.

Sincerely,



Cheryl Knott, Executive Director
[Gunung Palung Orangutan Conservation Program \(GPOCP\)](#)

Mapping for Orangutan Conservation

By Amanda West, Ph.D., GPOCP GIS Consultant

Last year, I was recruited by GPOCP to evaluate critical habitat for the Bornean orangutan in and around Gunung Palung National Park. Map results from this research will provide explicit geographic information that can be used to enhance monitoring efforts and conservation planning in the region. This month, I had the wonderful opportunity to visit the study area and share my knowledge and experience in geographic information systems through a series of workshops for staff from GPOCP, Gunung National Park, and local villages.



Amanda helps Pak Iskandar, head of Riam Berasap village, with his GIS map.

Maps are a form of communication that go beyond language barriers; that is one of the things I love most about making maps. It is also why I strive to share my knowledge and experience in map making with a broader audience outside academia. I have been teaching GIS to students who are new to geospatial analysis for almost five years and have developed a series of QGIS (an open-source GIS software) tutorials explicitly for this purpose. Over the past few years I've found that place-based tutorials provide more tangible and enduring curricula. Because most of my teaching experience has been in Ethiopia, to prepare for my visit to the field, I adjusted these

This year, GPOCP staff and volunteers celebrated Earth Day through three activities! First, our staff held a conservation campaign workshop with 30 high school students and teachers in the Kendawangan district of Ketapang. ReBONK, our Kayong Utara-based volunteer group held a tree planting event, along with an organic farming training. Then, Tajam youth group in Ketapang city created a mini library for children in a local park and put on a primate-themed puppet show to teach them and their parents about orangutan conservation. Thanks everyone for your hard work! To see photos from these activities, view [our album](#) on the Yayasan Palung blog.



Orangutans are More Like Us Than You Think

Want to learn more about orangutans and Nat Geo Wild's newest episode of Mission Critical? Go behind the scenes of *Orangutan on the Edge* with this [interview](#) by Tim Laman and GPOCP Executive Director, Dr. Cheryl Knott. Read on to find out how hormones affect orangutan behavior, why not all males look the same, and how our work

tutorials to focus on Indonesia, including data on Indonesian cities, provinces, and orangutan follow GPS points. Cassie (GPOCP Program Director) and I also translated the tutorials into Bahasa Indonesia so that they could be shared with a wide audience. Before I began the workshops I was a little bit concerned about the language barrier! However, with help from the English-speaking GPOCP staff, we were able to translate the instructions so that everyone could understand. There were a few funny moments, but it was a great learning experience for all.



The first order of business for Amanda's visit: a 5-day QGIS training for GPOCP staff! Everyone learned a lot and had a great time.

During my time here, I have led two different workshops for 35 people, including GPOCP staff, National Park staff, and village leaders. Participants learned how to organize and manage geospatial data, derive shapefiles, identify features and attributes, analyze common patterns in geographic space, work with datums and projections, and compose maps. All of the participants were highly motivated and eager to create maps using the data I shared with them. When I reflect on my five weeks in Ketapang and Kayong Utara, the first things that come to mind are excited faces of workshop participants after making their first map. Some of the participants even saved their maps as their new computer desktop background! On the last day of each workshop, I took time to work with individuals who had additional questions. Many participants had their own geospatial data, and wanted to learn how to analyze it with QGIS. Others wanted to learn how to acquire coordinate points using a GPS and visualize them on a map in QGIS. Throughout the workshops, the enthusiasm of participants and their willingness to help each other provided evidence to me that they not only felt accomplished in cartography, but also that they were confident

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"An investment in
knowledge pays the
best interest."

-Benjamin Franklin-

enough to continue this pursuit after the workshops ended.



Workshop participants, Uray (Natural Resources Conservation Agency - Kayong Utara) and Roni (Gunung Palung National Park) practice taking GPS points during the training.

Another important part of my visit was presenting the results of the research that I've been working on for GPOCP to National Park staff. I have created a map that shows potential suitable orangutan habitat for the entire GPNP landscape, and we printed a large version of the area surrounding the National Park to share these results with them. First, I met Pak Endro, who manages Cabang Panti Research Station for the Park. He was very enthusiastic about this work, and arranged for me to do a presentation for the rest of the staff. They were equally excited to discuss the map and incorporate this new information into their conservation management plan. Finally, I had the privilege of meeting Pak Dadang Wardhana, the head of Gunung Palung National Park. We had a great conversation about the potential utility of GIS-based analyses to conservation of the Park, which we hope to integrate into GPOCP's routine conservation work.

As an Ecologist, I like to envision that my research is making a real and lasting difference in the world. Too often, scientific research is bound in the realm of peer-reviewed journals and inaccessible to broader audiences, including individuals worldwide who can use methods and results from this research in conservation planning. During my visit here I am honored to have been able to work with local conservation and community leaders. Thanks to GPOCP, JICA for making my trip to Ketapang and Kayong Utara a success. Special thanks to Cassie who provided me with advice and direction throughout the trip. Thanks to Kat Scott for guiding me during an amazing visit to Gunung Palung National Park, where I had the privilege of accompanying a team on an orangutan follow. We are also grateful to International Animal Rescue for contributing data to our ongoing GIS analysis of suitable orangutan habitat, and the Phoenix Zoo for funding this project. Finally, thanks to all the workshop participants who truly made this trip fun and memorable. I look forward to continuing these collaborations, and wish everyone the best in their future conservation endeavors.

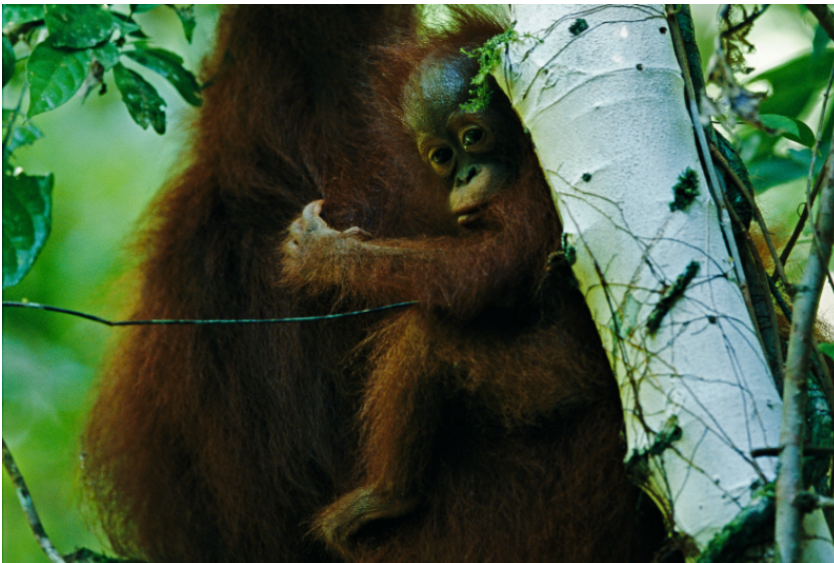
Amanda is a Post-doctoral fellow at the Natural Resource Ecology Laboratory at Colorado State University.

A Sad Day for Walimah

By Cheryl Knott, Executive Director

July 29, 2015 is a day I'll never forget. It was our first day back to the field station for summer vacation. We were searching for orangutans and Kat, the Research Manager, had just found 3 - all in the same tree! We quickly went over to see this unusual event and then my son, Russell, noticed something moving in a nearby tree. It turned out to be Walimah, the orangutan that we were most anxious to see.

Just a month earlier, we had been preparing to go back to Borneo for the summer and were particularly excited to see Walimah with her brand new baby. My husband, Tim Laman, had been able to make a quick trip out to Indonesia in March and took some amazing pictures and video of this newest baby orangutan. I've followed Walimah since she was born and watched her grow from a baby, to an awkward adolescent and finally into a new mother. However, right before our departure, we received some tragic news. Walimah, who hadn't been seen for some time, had been found again, but the discovery was grim. She no longer had her baby and was seriously injured - with a large chunk missing from her foot. This was devastating news to the research team. Walimah, the orangutan with her home range most closely matching our research area, the animal that we had followed since her birth, the one whom we had spent over 14,000 hours observing during her lifetime, had suffered a great tragedy. How could this have happened to her?



Walimah has been followed since she was born, making her a very important individual to GP researchers. Photo © Tim Laman.

Orangutan infant deaths are extremely rare. In fact, in the over 30-year history of the Cabang Panti Research Station we'd never documented even one infant death. Other orangutan research sites have similarly low rates of infant mortality. Compared to chimpanzees and gorillas, the survival rate of infant orangutans is remarkable. But, it also makes sense. Since orangutans only give

birth once every 6 to 9 years, high rates of infant loss wouldn't be very evolutionarily advantageous. Thus, the high infant mortality that is a regular part of life for many species, is not the case with orangutans, and was something that our research team had never faced before.

We'll never know for sure what happened to Walimah's baby and what caused her injury, but the juxtaposition of her severe injury with the loss of her infant points to a singular cause. What or who could have done this? We considered the options. The largest predator in Borneo is the medium-sized clouded leopard. But the evidence didn't match up. Walimah's foot injury was much too wide to have been delivered by a clouded leopard, who only have a three-centimeter gap between their canine teeth. It's also unclear if this cat would have the jaw strength to bite off a large part of her foot. Clouded leopards jump on their prey from above, delivering bites to the neck or shoulder. They don't attack the feet. There have been 3 known cases of suspected clouded leopard attacks on orangutans, but all have reportedly involved either juveniles, rehabilitants or marginalized females that were habitually traveling on the ground. Walimah, with her new infant, didn't fit this profile and as far as we were aware studiously avoided any ground travel with her new baby. Another possible animal to consider was a sun bear. These small bears can sometimes attack people when surprised or provoked, but have never been known to attack an orangutan. Sun bears can climb trees, but their arboreal skills are no match for an orangutan who could easily get away. Walimah also had no other wounds like the slashes that would accompany a cat or bear attack. We also considered the worst possibility of all: that this injury was human-induced. We found small comfort in the fact that her injury didn't match the slice that a *parang*, or other weapon, would deliver, and the knowledge that humans who intend to take baby orangutans always kill the mother to get them.



Walimah, now an adult, photographed with her baby in March 2015. Photo © Tim Laman.

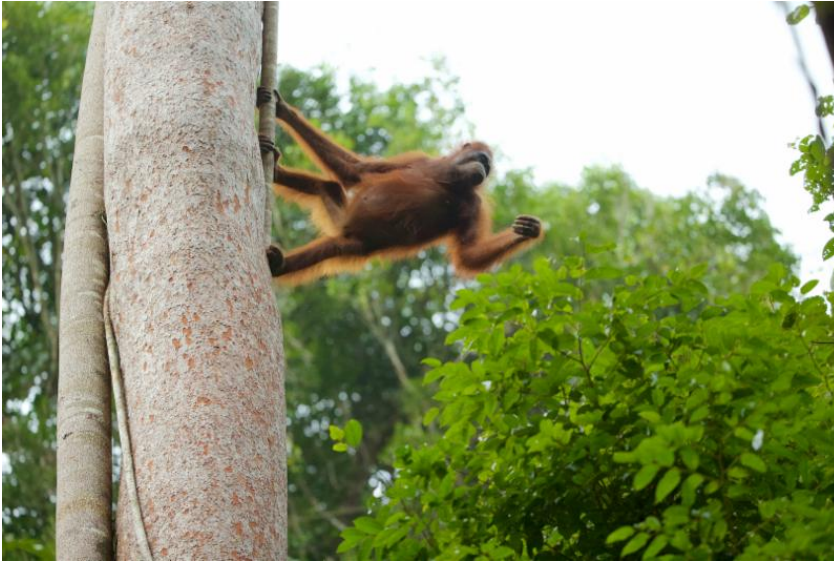
Who, then, is the only animal known to frequently injure orangutans? The answer is other orangutans. Thus, this may be the first documented case of a likely infanticide in wild orangutans. Infanticide, the intentional killing of an infant, is relatively rare, but does occur with some frequency in many primate species. My undergraduate advisor, Dr. Sarah Blaffer Hardy, was the first scientist to explain the mystery of infanticide in primates. She documented this in langurs from India, discovering that infanticide occurred only in specific situations - when an incoming male took over a rival male's group of females. After the takeover, these males would often kill any lactating offspring. Sarah explained, how, although abhorrent by human standards, this represented a male reproductive strategy. Because of the suppressive effect of lactation on female reproductive functioning, killing a female's infant means that she will start cycling again sooner, and thus the new male will be able to father his own offspring much sooner than he would otherwise. In addition, this act decreases the reproductive success of his competitor. Since this discovery, infanticide has been found in at least 62 species of primates and in many other species.



Walimah has adjusted well to her tragic injury and is still able to travel through the trees with little problem.

Orangutans exhibit certain features that would seemingly select for infanticide, including long inter-birth intervals with long periods of lactation, and a semi-solitary existence that increases their vulnerability to predators. However, up until now, no infanticidal attack has been documented in the wild. I don't think this is particularly surprising, given that these are rare events and, because orangutans are solitary, the number of hours spent watching them is much lower than in other apes, where many individuals are typically monitored at once. Our research program has also documented that females seem to engage in behaviors that indicate that infanticide is a potential risk. One example of this is that newly pregnant females seek out matings with multiple males. When such "post-conceptive" matings occur, as they do sometimes in other species, they are interpreted as a strategy by the female to try and confuse paternity. Without the benefit of paternity tests, most male animals seem to assume that they could be the father of the offspring of females with whom they have mated. Additionally, one of my graduate students, Amy Scott, has recently analyzed some of our behavioral data and found that females become more protective of their infants when adult males are close by.

So, what happened to Walimah? We can't say for sure, but our best guess is that she was attacked by a male orangutan, who killed her infant and, in the process of her fighting him off, bit and severed part of her foot. I can't help but imagine the struggle that occurred and the terror that she faced. Could this have been a male reproductive strategy? Within weeks of her injury she was seen consorting and eventually mating with a male. Thus, this is certainly a possibility.



Walimah makes her way up a large tree in Cabang Panti Research Station. Photo © Tim Laman.

This latest and very sad chapter in Walimah's life shows us that, yet again, there is so much about the lives of wild orangutans that we are only beginning to understand. Her wound has fully healed and she now gets along amazingly well as evidenced by the acrobatic display shown above. We can only hope that the next chapter will be a happier one.

Gunung Palung Orangutan Conservation Program (GPOCP)

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