



Dear Friends and Supporters,

Welcome to our 100<sup>th</sup> Issue of [Code Red](#)! Since our very first newsletter in [August 2010](#), we've hit many milestones towards wild orangutan research and conservation. Among these achievements, we have:

- Received the very first customary forest decree in West Kalimantan, and have now secured a total of 7,962 ha of [protected land](#)
- Established two volunteer conservation youth groups and one kids club
- Sent [43 students](#) to university as part of the West Bornean Orangutan Caring Scholarship

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***IN OTHER NEWS***

- [Held a total of more than 1,190 in-school lectures and puppet shows](#), and 160 field trips, reaching more than 54,100 students
- [Spent more than 1,060 days in the field conducting wildlife crime investigations](#), and reported more than 160 cases of illegally-held animals
- Broadcasted more than 870 radio shows for audiences of over 400,000 people
- [Published more than 1,080 Indonesian language news articles](#)
- [Supported artisans](#) in the production and sale of Non-Timber Forest Products, earning a cumulative income of more than \$26,000
- Conducted over 32,130 [hours of observation](#) of wild orangutans in Gunung Palung National Park

And this wouldn't have been possible without all your support along the way!

April has been a busy month, both in the US and Indonesia. The fasting month of Ramadan, which many members of our staff observe, began. We also celebrated Earth Day (more on that in our first article) and a [GPOP wedding](#). Our work was also featured in [The Atlantic](#), in an article called *The Pandemic is Undoing Field Researchers' Oldest Assumption*, written by Wudan Yan. The article highlights our involvement of Indonesian collaborators, students and staff, at all levels of our program, for the past 27 years, focusing on how this has been critical to our organization's continued success throughout the COVID-19 pandemic.

In our first article, Communications Officer, Petrus Kanisius, writes about the many activities that took place for Earth Day last week, as well as some of the history behind this special day.

Our second article comes from Dr. Amy Scott, who just defended her PhD dissertation last month! Dr. Scott writes about some very exciting findings from her research on wild orangutan genetics.

I wish you all a happy May!

Sincerely,



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



A new article from The Atlantic features the stories of GPOCP's Dr. Cheryl Knott, Sahril Ramadani, Sabta Pelari and Wahyu Susanto. Read it [here!](#)

***"While the pandemic derailed [Dr. Knott's] plans, it built confidence and independence in her Indonesian counterparts who stepped in. Their newfound self-sufficiency is a boon not only for the research, but also for each other."***

- Wudan Yan, The Atlantic

## Earth Day 2021

By Petrus Kanisius, Environmental Education and Communications Officer

Each year on April 22<sup>nd</sup>, people from all around the world celebrate Earth Day. This year, on the 51<sup>st</sup> annual Earth Day, the theme was "Restore our Earth." Earth Day was first started by an American politician and environmentalist named Gaylord Nelson. In 1969 Nelson saw the detrimental environmental damage caused by a massive oil spill in Santa Barbara, California. In 1970 the first Earth Day raised awareness about the anti-pollution movement, and helped to spread information about

environmental problems. On April 22, 1970, 20 million Americans took to the streets for a massive coast-to-coast demonstration, fighting for a healthy and sustainable environment.

Now, in 2021, we continue to celebrate this important day because it serves as a reminder for us to take action to help the future of our earth. It is a time for us to take real action, even in simple ways, so that the earth will continue to be sustainable forever. A healthy earth gives breath and life to all.

As a conservation organization, GPOCP always celebrates Earth Day. This year, we held a variety of activities that took place throughout the week. At our Bentangor Environmental Education Center, in Pampang Harapan Village, Sukadana, there was an event to break the Ramadan fast together on April 27<sup>th</sup>. Members of the Bentangor Kids Club also stayed and watched environmental films together.

REBONK volunteer youth group members also created a special [video for Earth Day](#).



*This poster created for Earth Day 2021 shares ideas about how to have a “Green Ramadhan”. It shares tips to reduce food waste during the breaking of the fast, reduce the use of disposable items, use electronics only as needed, make your surroundings green [with trees], and use water only as needed.*

In Ketapang, RK-TAJAM youth group members also held an event to break the fast and held an interactive dialogue on the topic of “Becoming an Environmental Influencer”. This event was livestreamed on Instagram on April 24<sup>th</sup>, with informative guest speakers M. Mukhlis Saputra, Founder of Suara Konservasi Kalbar, and Candra Kurniawan, Founder of Impact Circles School.

Our Environmental Education team also hosted a webinar on climate change on April 26<sup>th</sup>. This Zoom event featured three special guests: Annisa Dian Ndari, from Greenpeace Indonesia; Maria Theresia, from World Wildlife Fund, West Kalimantan; and Yudo Sudarto, who serves on the Yayasan Palung Advisory Board.





Posters created for the RK-TAJAM live stream (left) and Earth Day Webinar (right).

And together, REBONK and the GPOCP Environmental Education team broadcast an interactive radio show on April 22<sup>nd</sup>, focusing on the theme “Green Ramadan.” The radio show was hosted by Mba Ifha from the Kayong Utara Radio, and two members of the REBONK youth group, Selvi and Siska.



The ad for the "Green Ramadhan" radio show (left) and a photo taken during the broadcast (right).

Despite some last-minute changes to our plans due to new COVID-19 restrictions in the Ketapang Regency, we were able to safely hold many events throughout the week surrounding Earth Day. We engaged many members from throughout the community and had another successful Earth Day!

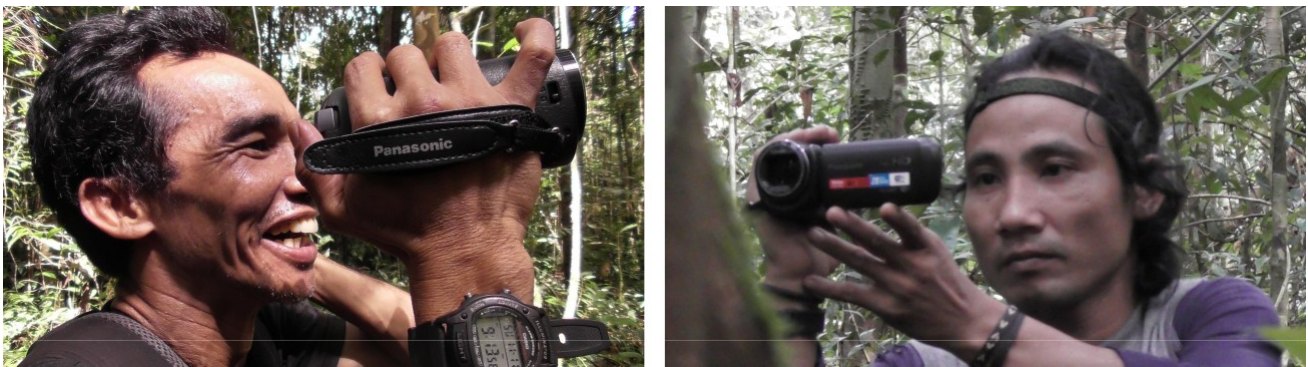
## Guess Who? Orangutan Genetic Identities Tell Us New Stories

By Amy Scott, PhD

The identity of individual orangutans is important to our long-term research as it enables us to track the major milestones of each animal's life. In particular, it allows us to answer questions about each individual's developmental trajectory and reproductive history. For instance, because we can identify individuals, we know that Walimah was born on October 30, 1998, and had her first baby in February 2015. But orangutans are notoriously difficult to identify in the field. First, they are primarily arboreal, so we need to use binoculars to learn their faces and other distinctive features, but they are often obstructed by leaves in the canopy. Second, we may only see an individual every few months because

orangutans are semi-solitary and have very large home ranges. Third, the easiest way to tell non-human primates apart is by comparing them to others, but we rarely see individuals together in order to compare them.

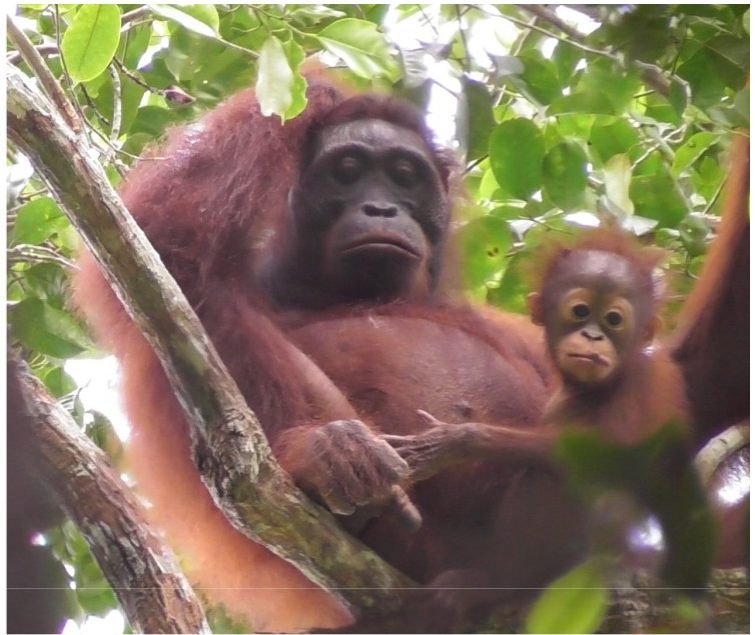
When I worked as a field assistant studying capuchin monkeys in Costa Rica, I could identify 215 monkeys in nine different groups based on body size and facial features. The hardest monkeys to identify were individuals I found alone because I lacked the context for identifying them. It is similar to when you see someone you know from the gym at the grocery store and it takes a few minutes to figure out who they are and where you know them from. At Gunung Palung, when I'd first find an orangutan in the forest, I often had that familiar feeling — that I'd seen this orangutan before, but I couldn't quite place them. In order to correctly identify orangutans, our research team always makes use of cameras and handycams to photograph and record videos of the orangutans we follow. When we are unsure of an orangutan's identity, we use these photos to compare against photos of known individuals. In the evening, after a follow, we sometimes spend hours poring over photos to try to identify an orangutan. Now, thanks to the fastidious collection of fecal samples for genetic identification and funding from the Leakey Foundation and the US Fish and Wildlife Service to perform the genetic lab work, we have some exciting results on the genetic identities of orangutans in Gunung Palung!



*Field assistants Hassan (left) and Toto (right) use handycams to record photos and videos of orangutans.*

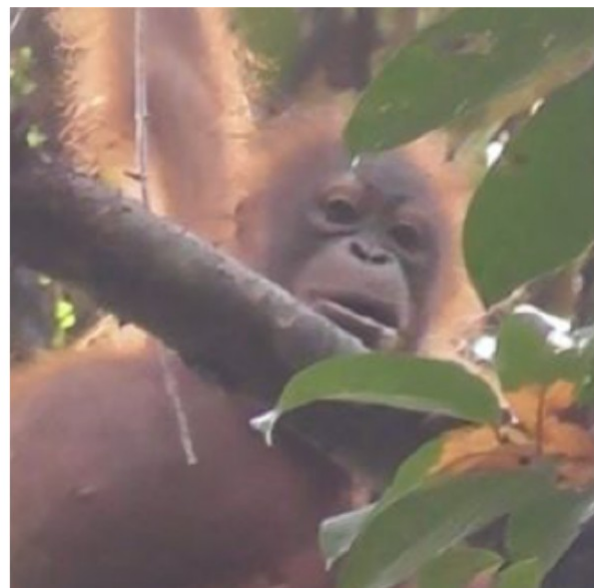
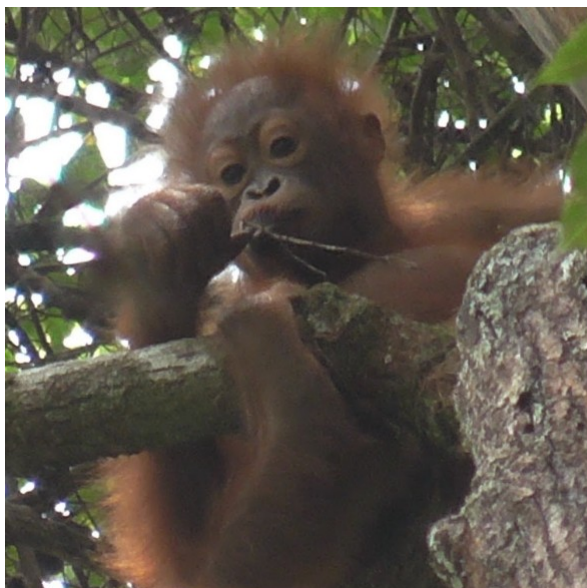
One reason that photographic comparison for identification of orangutans is difficult is that we may not see an orangutan for months or years at a time. It can sometimes feel like the popular baby shower game where guests attempt to identify each other from baby pictures. In November 2018, we found a fairly habituated mother with a very young infant. We knew that the mother must have been previously followed because she was not bothered by our presence. After comparing photographs, we decided she looked a lot like another female named Kabar (last followed in 2015), but this did not make sense because Kabar's offspring would have been about 5 years old, so Kabar would not be expected to have a new baby for another 2-3 years (because orangutans have 7-8 year interbirth intervals). We were stumped by her identity. Genetic analysis revealed that this new mom was Ijal, a juvenile who had not been followed since 2009. No wonder we didn't recognize her — in the 10 years since we had last seen her, she had grown up from a juvenile to a young mother!





*Pictured above is Ijal. The photo on the left is from 2009 when she is a juvenile, approximately 6 years old. The photo on the right is from 2019 when she is a first-time mother, approximately age 16.*

The semi-solitary nature of orangutans can make identification very difficult. In March 2017, we followed a new mother-offspring pair for the first time. The mother, then given the name *Rossa*, was not habituated — she moved quickly, hid from observers, and made kiss squeak vocalizations at observers. *Rossa* appeared quite young because she had large patches of pink skin around her eyes and mouth, but the juvenile, *Ronnie*, was estimated to be five years old. We all wondered whether it was possible that *Rossa* was old enough to be the mother of *Ronnie*, but the pair acted like they were mother and offspring. Like all mother-offspring pairs, *Ronnie* often clung to *Rossa*'s body during travel and they shared a sleeping nest at night. But the genetic identity results showed that *Ronnie* was actually an orangutan previously identified as *Vanna*, who was last followed with her mother *Veli* in August 2016! Based on genetics, *Veli* is a match as the mother of *both* *Rossa* and *Vanna/Ronnie*. Thus, it seems most likely that at some point between August 2016 and March 2017, *Veli* died and her youngest daughter, *Vanna/Ronnie*, began traveling with *Veli*'s older daughter, *Rossa*. So *Rossa* and *Vanna/Ronnie* are actually sisters who travel together! This is something we had never seen before. Because orangutans are semi-solitary, we had never observed *Rossa* with her mother *Veli*, and we needed genetic identification to figure out this puzzle.



*Pictured above is Vanna/Ronnie. The picture on the left is Vanna in 2016 and the picture on the right is Ronnie in 2018. Now when we look at these pictures side-by-side, it seems so clear that Ronnie is actually Vanna, but in the field, we typically make identifications based on the mother, since juveniles' appearances change as they grow.*



*Veli, the mother of both Rossa and Vanna/Ronnie is pictured on the left. Rossa is pictured on the right. As you can see Veli and Rossa look very different. Because we had never seen Rossa with her mother Veli, we just assumed Rossa and Vanna/Ronnie were a mother-offspring pair that we had never followed before.*

Additionally, the fact that male orangutans have very large home ranges and develop cheek flanges makes adult males especially difficult to identify over time. Males have an estimated home range of over 2500 hectares. This means that there are some males who we only see every few years. Males with permanent injuries, like missing fingers, are easier to identify after long periods without seeing them. But if a male has developed cheek flanges since the last time he was seen, he can be difficult to identify because his face and body look so different. Thanks to genetic samples, we were able to track one male, Bilbo (pictured below), over the course of a year as he grew his cheek flanges.





November 8, 2017:  
Before flange development



June 29, 2018:  
Small flanges are growing



August 2, 2018



November 3, 2018



December 13, 2018

The genetic analysis provided some very unexpected results! Based on their genetic profile, we were able to match orangutans who had not been followed for up to 10 years. And we discovered the heartwarming story of an older sister adopting her little sister after her mother presumably died. We also were able to document, for the first time at our site, the process of a male developing cheek flanges. This genetic data can also be used to determine paternity of orangutans born in Cabang Panti, to measure relatedness between adults, to see if closely related orangutans spend more time together, and to learn more about male development and bi-maturism. Stay tuned for more of our findings!

*"The ultimate test of man's conscience may be his willingness to sacrifice something today for future generations whose words of thanks will not be heard.*

*- Gaylord Nelson*



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