Dear Friends and Supporters,

You may have noticed something different this month, that our header photo of Codet has been temporarily replaced by a picture of a forest fire. The fires continue to burn across Indonesia and the lives of many orangutans are threatened. To help raise awareness about this issue, we have joined the movement to make the photo above go viral and get people's attention. If you like it and want to help, go to our Facebook page to download the original file, then post it as your profile picture on your social media pages.

This month our conservation article is a follow-up to September's about the causes of the fire. Read on to learn about the effects of this fire season,
especially on climate change. In the second article, my Ph.D. student, Amy Scott, shares her experiences from her first trip to Borneo this past summer. She conducted pilot research at the Cabang Panti Research Station and got her first views of wild orangutans after years of academic preparation. We've been lucky that the fires have not affected Cabang Panti and that all of our orangutans are safe. This has, in fact, been a very productive month for our research program. However, several other orangutan research sites are severely threatened by these fires. Hopefully next month we can bring you news that this scourge of fires across Borneo and Sumatra has stopped.

Sincerely,

Cheryl Knott, Executive Director

Gunung Palung Orangutan Conservation Program (GPOCP)

Peatlands, Carbon and the Climate

By Cassie Freund, GPOCP Program Director

"This is large-scale burning atop huge carbon stores that should not have ever happened." - Robert Field, Columbia University/NASA

Those of us keeping up with the news on the Indonesian forest fires have been inundated with information lately. And those of you who haven't heard much news shouldn't feel guilty - the Western media hasn't been covering this issue nearly as intensely as the situation merits. That in itself is disappointing, since this has been called “the biggest environmental crime of the 21st century,” and "a crime against humanity of epic proportions."

Meet our New Partner:
Bateek!

GPOCP at the ZACC Conference

From October 12th-16th, the GPOCP Executive and Program Directors participated in the ZACC (Zoos and Aquariums Committing to Conservation) Conference in Denver, CO. Program Director, Cassie Freund, presented GPOCP's Wildlife Crime Investigation work, and Executive Director, Dr. Cheryl Knott, was part of a panel discussion on conservation commerce. We also had a table in the conference's Conservation Marketplace, where we sold Non-Timber Forest Product crafts from our Sustainable Livelihoods program, earning over $600 for local artisans!
Orangutans along the Mengkutup River in Central Kalimantan search for a path amid thick, acrid smoke. Photo © Tim Laman.

Let's review: since mid-August, forest fires have been raging across Indonesia, with the majority of hotspots occurring on the islands of Borneo and Sumatra. The resulting thick, choking haze has affected 43 million people. An estimated 500,000 people have contracted respiratory infections, and this is based on the number of people who have gone to the hospitals for treatment. The actual number is likely far higher as it doesn't take into account people who live in remote locations without a nearby hospital, or those that are too poor to afford treatment. The official death toll is 19 people, many of them children. The smoke now blankets three-fourths of Indonesia and stretches as far as Thailand and the Philippines (over 1,000 kilometers away!) Approximately 1.7 million hectares of land have been or are currently on fire, most of it peat forest that under law should never have been developed. This peat soil, which is a thick bed of decaying organic material, is essentially a massive carbon storage system. When drained and set alight, it becomes a carbon bomb. Most Indonesian people, including government officials know the basics about peat. So, why did this happen? It's a confluence of multiple factors, including the political influence of large corporations, poor environmental planning and lack of government foresight, and this year's strong, El Niño-fueled dry season. But, to be clear, the severity of this fire season was entirely predictable, and in fact scientists raised concerns about it many months ago.

“When people think about climate, they only think about smokestacks and tailpipes, and this is obviously the biggest climate story on the planet right now.” - Rolf Skar, Greenpeace USA
The negative effects of these fires are going to last far beyond this dry season. According to an analysis by the World Resource Institute, since September 1st the daily emissions from the fires have surpassed daily emissions from the entire U.S. economy 60% of the time. The total greenhouse gas emissions from the past three weeks have surpassed the yearly emissions of the entire country of Japan and are creeping up on Brazil. In addition to carbon dioxide, forest fires also emit methane, and the amount of methane stored in peatland forest is estimated to be over 10 times that stored in other forests. This, combined with the fact that peatlands are so carbon rich, means that these fires in Indonesia could be up to 200 times more potent, in terms of climate change, than wildfires in other ecosystem types.

Most years, the forest fires are restricted to Kalimantan and Sumatra, but this year, Papua has also seen many hotspots.

All told, Indonesia’s carbon emissions this year will be the second-highest in the country’s history, second only to the emissions from 1997 (also an El Niño year). Notably, hotspots have recently appeared in Papua, where palm oil is slowly moving in and the government has already begun opening peatlands for a mega agriculture project, called the Merauke Integrated Food and Energy Estate, designed to increase domestic food production. In fact, 88% of the hotspots in Papua this month were in Merauke. This project is especially distressing in light of the utter failure of Indonesia’s first mega agriculture venture, Central Kalimantan’s ill-advised Mega Rice Project, where a million hectares of peat forests that were originally slated for conversion to rice fields now lay drained, degraded, and burned after it become clear that rice doesn’t grow on peat. If Indonesia is to cut its greenhouse gas emissions by 29% by 2030, as they have reportedly pledged to ahead of the U.N. Framework Convention on Climate Change’s upcoming COP-21 in Paris, they should seriously reconsider their intentions in Papua, in addition to committing to a thorough plan of canal blocking and peatland restoration, as well as to revoking all agricultural concessions in areas where the peat is deeper than three meters, in accordance with existing national laws. Taking these steps will mitigate future forest fire risk, and could prevent significant greenhouse gas emissions.

“[The fires this year are similar to 1997, but far more severe because the smoke negatively affects so many lives. The impact of the fires harms the health of the population, and the loss of forest land is catastrophic for the future of Indonesia’s environment.]"
In addition to greenhouse gases, the peatland fires are also emitting ozone, ammonia, formaldehyde and carbon monoxide, another serious issue. While measuring air quality last week in Palangkaraya, one of the hardest-hit cities in Kalimantan, CIFOR scientists found carbon monoxide levels of 30 ppm in a hotel five kilometers away from the nearest fire. Considering that normal, healthy CO levels are less than 1 ppm, that's pretty shocking! Although many people wear masks during the most polluted days, often normal surgical masks are insufficient to prevent negative health effects, and as of mid-October some more remote villages in Central Kalimantan hadn't even received those. The government is now discussing evacuating babies and children from the hardest-hit areas of Borneo, but thus far no concrete plans have been made.

View from an airplane flying over Pontianak on October 20th. The thick smoke and poor visibility have caused thousands of flights all over Indonesia, and in neighboring nations, to be canceled.

We don't yet know the effects that this will have on Indonesia's orangutan population, but it's not good. If people are suffering respiratory distress, wild
orangutans certainly are as well. In fact, BOS Nyaru Menteng, the largest orangutan rehabilitation center in Borneo, has not ruled out the possibility of evacuating all 470 of its animals. The research stations at Sabangau and Tuanan, two long-term orangutan research sites that mostly encompass peat forests, are currently threatened by fires that show no sign of stopping. And, the most recent estimates suggest that a full one-third of Indonesia's orangutans (20,000 individuals) are in danger as their habitats burn to the ground around them. As the forest is destroyed, orangutans and other species have been fleeing the forest to seek respite in local villages, where people are not always welcoming to wildlife. These animals, including proboscis monkeys and sun bears, are usually taken in as pets, and more often than not they die in captivity.

*There is no new solution to the issue as everyone understands what must be done. This is a matter of whether we are willing to resolve the issue*” - President Joko Widodo, November 2014

Those of us who do research and conservation in Indonesia expect - and until now have grudgingly accepted - a certain amount of haze every year. But this year has been far beyond the limits of normal. This fire disaster, fueled by haphazard issuing of permits to oil palm companies, illegal and large-scale drainage and degradation of peatlands, and weak law enforcement of existing burning laws, has been a long time coming. While it's not entirely the current administration's fault, scientists have been sounding the alarm since June that this year is an El Niño year, and there were numerous actions that could have been taken to limit the haze. That being said, President Jokowi has been far more responsive than past leaders to the crisis, even traveling to Central Kalimantan to observe the firefighting action in person, and cutting last week's scheduled visit to the U.S. short to personally oversee the crisis response. Hopefully now he takes advantage of this crisis and seizes the opportunity to prosecute rogue oil palm companies and strengthen environmental protection laws.

The forest fires are pushing many animals, such as this baby sun bear, into human territory, where they are in danger of becoming pets. Since the
I don't know what will happen in the coming weeks and months, how long this will last, or what it will mean for the future of Kalimantan's rainforests and orangutans. What I do know is that dozens of our colleagues (and some of my closest friends) have been fighting fires, 24 hours a day, for weeks now, to defend some of this country's last remaining orangutan habitat. I know that we've been living inside of a smoke blanket for months now, and blue sky is a distant memory. And I know that we cannot let this happen again. Within the next couple of months the rains will come and the fires will stop, but that won't mean that the problem is over. We must work to fix the underlying issues, or this year's disaster will be repeated in the future. For us at GPOCP this means increased lobbying of the local government for sustainable environmental management practices. Those of you at home can help by purchasing only products which use sustainably sourced palm oil. Additionally, you can help save orangutans in the most at-risk areas by donating to the ongoing firefighting operations in Kalimantan and Sumatra at redapes.org/firefund. Although this year has been devastating for Indonesia's orangutans and their forest habitat, the silver lining is that the resulting public outcry will hopefully drive political change and positively impact conservation in the future.

**Tales of a Cabang Panti Summer**

_By Amy Scott, Boston University Ph.D. student_

The trek to Gunung Palung entails a 13 km hike after a bumpy 1.5 hour bus ride, but my trip to the forest started long before that. I began preparing for the field long before I left the US, before island-hopping in Indonesia to collect permits and getting permission to enter Gunung Palung National Park and even before the 30-hour flight from the US to Jakarta. Getting a research permit in Indonesia is a very complicated process, so I began applying for governmental permission to conduct research in GP seven months before I entered Indonesia. It was disheartening to be confronted by delays in the long permit process, but while waiting I kept reminding myself that it would all be worth it when I finally got to see the orangutans.
Amy, who is currently a second-year Ph.D. student in the Department of Anthropology at Boston University, working under Dr. Cheryl Knott, observes Cabang Panti’s wild orangutans.

As a graduate student, it is easy to get caught up in the day-to-day deadlines and details of taking classes, and lose sight of your big picture goals. The year before I went to the field, I spent most of my weekends reading academic literature on orangutan behavior. While I enjoy learning and reading about orangutan behavioral ecology, it can get tedious, especially when you aren’t in the field to observe the animals directly. Through it all I had to remind myself that all the hours of study would be worth it when I finally got to collect data toward my own research project! Finally, in early July, I received my research visa, and after completing the permitting process in Jakarta, then Pontianak, then Ketapang, I hopped on that 1.5-hour bus ride and made the 13-kilometer hike up to Gunung Palung.
My first full day at the Cabang Panti Research Site was spent searching, unsuccessfully, for orangutans, and on the second day I woke up at 3 AM to go out on a follow with the field assistants. Waking up that early can be rough, but my first encounter with a wild orangutan was well worth it. At first, all I could see were leaves moving, and then I saw a hairy, dark blob in the canopy above me. It wasn't until the mother and juvenile pair, Beth and Benny, settled in to eat that I got my first good look at them. It was amazing. One of the things that amazed me the most that day was the way that orangutans move through the forest, pulling a tree toward them, clambering on to it, and riding the momentum from the bent tree to reach the next. While everything I saw that day was new and exciting for me, a few orangutan behaviors stood out as particularly fascinating: Beth eating termites, Benny watching his mother eat cambium that he was not yet capable of foraging, Beth using her body as a bridge to allow Benny to cross a gap between two trees, and Beth bending the branches of trees to make a night nest. It was an exhausting day, but very rewarding.
My next month at the research station was filled with other fascinating orangutan follows. I watched a male and female traveling together for a few days. I observed another male-female interaction that amounted to a high speed game of chase through the treetops, with the male and female alternating between chasing and being chased. I saw a mother with a very young infant (only a few weeks old) enter a fig tree and feed just 20 meters from a male. Figs are a popular forest food, and I was lucky to see hornbills, squirrels, gibbons, and macques all eating out of the same fig tree at different times while pigs simultaneously foraged on the fallen fruit.

My month at Cabang Panti was so rewarding. It was amazing to wake up to the sound of gibbons singing and walk through primary rainforest every day. The species diversity that I saw in such a short time was astonishing. All of the paperwork and long waiting period for the permitting process was absolutely worth it when I finally got to see the orangutans navigating the rainforest as they went about their ordinary day, turning mine into an extraordinary day.