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For World's Rarest Great Ape, COVID-19 Is Latest in a Litany of Threats

By Ayat S. Karokaro and Hans Nicholas Jong
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The Tapanuli orangutan is the most recently described great ape but already the most threatened, having suffered an estimated 83% population decline in just three generations. Today, there are only around 800 of the apes left on Earth, in a habitat being carved up by road projects, oil palm plantations, and the construction of a controversial hydropower project. Amid this kind of pressure, a COVID-19 outbreak among the population could push them even closer toward extinction, scientists warn.

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Call to halt all projects

There have been no reported cases of orangutans or other great apes contracting the coronavirus, but an estimated 40% of pathogens that afflict humans and apes are known to be transmissible between the two. Across Africa, national parks that are home to gorillas and chimpanzees have shut down to prevent possible transmission. In a letter to the journal *Nature*, scientists called on "governments, conservation practitioners, researchers, tourism professionals and funding agencies to reduce the risk of introducing the virus into these endangered apes," including by suspending great ape tourism.

While great ape tourism is an important source of revenue for countries in Central and East Africa, the main form of human interaction with orangutans comes through industrial activity such as logging and cultivating oil palms. In the case of the Tapanuli orangutan, there's also the Batang Toru hydropower plant, a $1.6 billion project financed by Chinese loans and being built by a Chinese state-owned company with a history of faulty construction.

Wich, who is also co-vice chair of the IUCN primate specialists' section on great apes, said all infrastructure projects in the orangutan habitat, including the hydropower plant, should be halted to reduce the likelihood of exposing the apes to humans and other wildlife that might carry the virus.

> "I would indeed think that it would be wise to suspend projects in the Tapanuli orangutan habitat that would disturb orangutans and push them into areas where they can get in contact with people," Wich said. "So, it is both people going into the area to develop projects and increase human-wildlife interactions and also wildlife being pushed into areas where humans occur."

The project has already had an impact on the apes in the area. In 2018, Indonesia's Ministry of Environment and Forestry reported that preconstruction activity for the dam and power plant had driven a group of Tapanuli orangutans out of their habitat and into nearby plantations. Last September, a severely injured and malnourished Tapanuli orangutan was found in an oil palm plantation just 2.5 kilometers (1.6 miles) from the project site.

Work on the project has been suspended since January because of the coronavirus outbreak, though not as a public health measure; instead, the project developer found it was left short-staffed after a travel ban imposed by Indonesia prevented its Chinese workers — about a tenth of its workforce — from coming back to Indonesia after they'd gone home for the Lunar New Year. Wich called for the suspension to remain beyond the pandemic response period and until there's a vaccine for the coronavirus, "so that people working in such areas can be vaccinated first for their own safety and that of great apes."

The project developer, PT North Sumatra Hydro Energy (NHSE), has said it doesn't know when work will be allowed to resume. Indonesia's president has said the COVID-19 outbreak could decline by June for a return to "business as usual" by July.

The Batang Toru River, the proposed power source for a Chinese-funded hydroelectric dam. Image by Ayat S. Karokaro/Mongabay-Indonesia.

Lower population density

Despite the hiatus in activity, the project may already be driving the species out of its habitat. A recent study by the Center for Sustainable Energy and Resources Management (CSERM) at Jakarta's National University shows that the project developers cleared an area greater than New York City's Central Park between 2017 and 2019, in preparation for construction activity. It also shows lower orangutan population density within the project's "area of influence" (AOI) than previous surveys, suggesting the apes are being driven out by the deforestation.

The CSERM study showed 372 hectares (918 acres) was cleared during this period, of which nearly a quarter — 86.5 hectares, or 214 acres — constituted permanent forest loss. PT NSHE has said it will offset this deforestation by planting trees in other areas. The remaining cleared area, categorized as temporary loss, will be restored, the company says.

Crucially, the CSERM study estimated there were just six orangutans within the project's 1,812-hectare (4,478-acre) AOI, or a population density of just 0.32 individuals per square kilometer.

That's lower than previous figures calculated by the environment ministry's Aek Nauli research institute of 0.41 orangutans/km2 during the rainy season in 2017 and 0.35 orangutans/km2 during the dry season in 2018.

A 2003 survey by Wich indicated a density of 0.5 individuals/km2 in the area where the hydropower project is located. Another study by Wich and fellow researchers in 2016

estimated that there were 42 orangutans in the project's area of influence.

PT NSHE's own environmental, social and health impact assessment (ESHIA), published in 2017, recorded average orangutan density of 0.7 individuals/km2 in the project's area of influence, but only along the west bank of the Batang Toru River. It recorded the highest density in the southern survey area, at 0.95 individuals/km2, which it said was almost three times the estimate for the entire Batang Toru forest area.

Wich said that while density figures are hard to compare — CSERM did not publish its data, making it impossible to assess whether its scientists used the same parameters, such as nest decay — the overall trend still indicated a drop in population density.

> "In any case, the 0.32 individuals per km2 is lower than it was in the past so it seems the density is decreasing because of the project," Wich said. "I am not sure how they explained this decline.
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> "This comes to no surprise as individuals will try to move away from the project area and shift their home range to areas that are not being affected as much as they can," he added.

Wanda Kuswanda, the lead researcher at the Aek Nauli institute, said his team also found the orangutans moving away from the project site because of the deforestation of what used to be their habitat.

An injured Tapanuli orangutan being rescued from a local's plantation in Batang Toru, North Sumatra, Indonesia. Image courtesy of Orangutan Information Center (OIC).

Promise of restoration

Swiss-based NGO PanEco Foundation, for a long time a leading voice sounding the alarm over the danger posed to the Tapanuli orangutan by the hydropower project, said the deforestation wouldn't have a big impact because much of the area would be reforested. PanEco last year signed a memorandum of understanding with PT NHSE to jointly protect

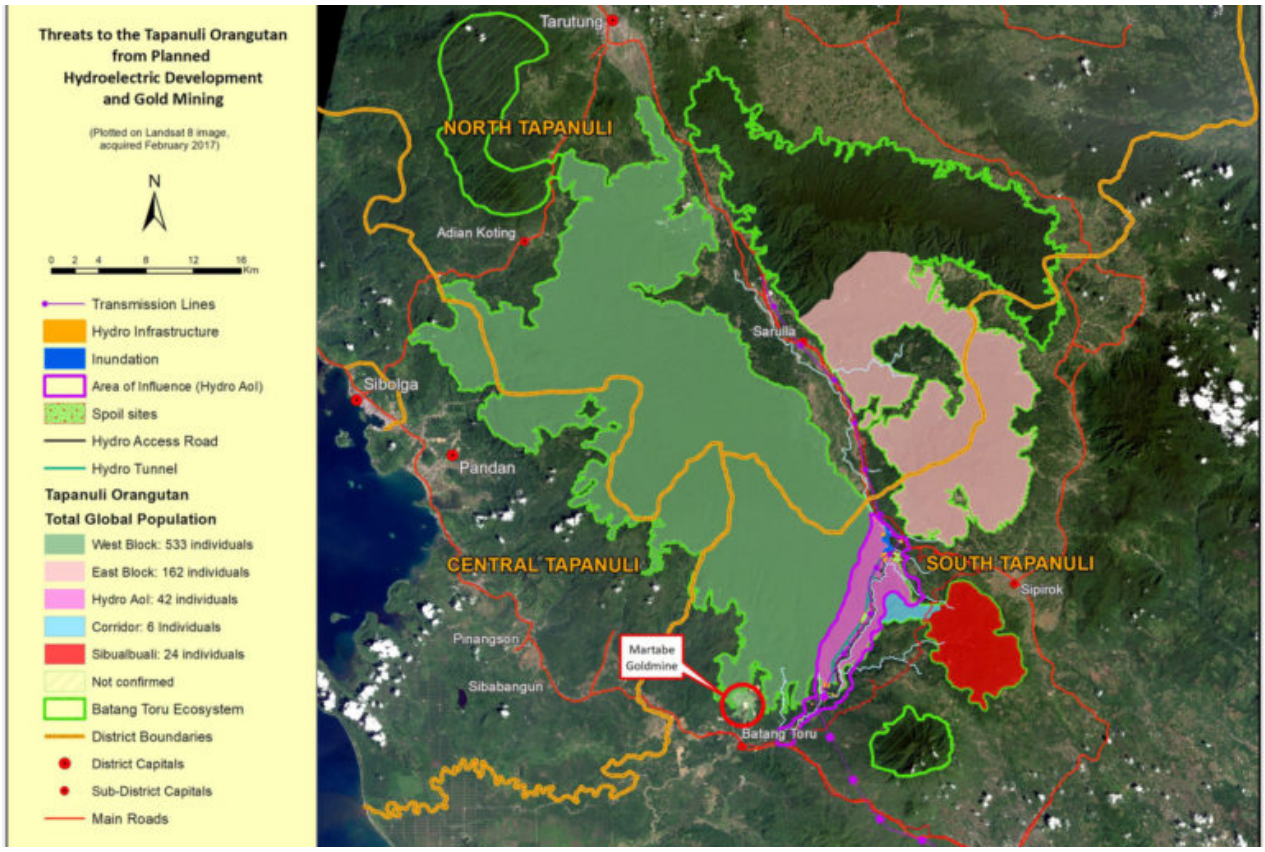
the species, following an apparent threat to revoke its permission to work in Indonesia.

“Compared to other hydro dams, [the deforestation by PT NSHE] is very small,” said Ian Singleton, the PanEco conservation director and head of the Sumatran Orangutan Conservation Programme (SOCP). “My challenge to PT NSHE is to have all areas that have been cleared and which they say they will restore, to be restored and returned to their original condition.”

Singleton said there were ways to mitigate the impact of the project, such as a no-disturbance policy for orangutans living across the dam; planting vegetation by the sides of the roads; and designing the project’s overhead power lines to allow the orangutans to travel safely beneath them.

As long as PT NSHE carries out these measures, the impact of the dam can be minimized, Singleton said. “And I’m always more concerned on what’s happening and what will happen outside [the dam area],” he said.

The Tapanuli orangutans are fragmented into several separate population groups. According to Singleton, the group of highest concern is the one that lives across from the project site in the Dolok Sibuali-buali reserve. Singleton said there are around 40 individuals left in the reserve; the 2016 study by Wich estimated the group’s population at 24.



A map of the Tapanuli orangutan habitat in the Batang Toru ecosystem in Sumatra, Indonesia. Image courtesy of the paper “The Tapanuli orangutan: Status, threats, and steps for improved conservation”.

Singleton previously said that to stand a chance to survive in the long run, there should be at least 250 orangutans in a single population group.

“If they don’t have genetic contact, then they won’t be able to breed with the

> ones living in the western block, which houses 500 individuals," Singleton said. "They will go extinct in the long run and [there will be] inbreeding. [The ones that won't make it] aren't the individuals who live today, but the population, so their children and grandchildren won't make it."

The reserve still remains connected to the larger western block of the habitat, and the orangutans can move between the two areas by crossing the Batang Toru River. But that corridor is under threat from the expansion of oil palm plantations, putting the orangutans at risk of conflict with humans when they try to cross to the western block, Singleton said.

> "If the orangutans can travel through the forest, then they won't be disturbed," he said. "But if they ended up in oil palm and locals' plantations, then there will be conflict and there's a risk of them being shot."

That makes it crucial that PT NSHE fulfill its promise of mitigating the impact of the dam, Singleton said.

> "If PT NSHE is diligent in implementing mitigation action, then I assume that the orangutans [in the Dolok Sibual-buali reserve] can still cross the river [to the western block]," he said. "But if outside [the dam project's area], all [forests] are turned into oil palm [plantations] and abandoned lands, then the orangutans won't be able to do so even though the quality of habitat in the project's area of influence is still good. It's the whole corridor that needs to be protected."

Wich said there are still too many uncertainties and questions that haven't been answered regarding the potential impact of the dam on the Tapanuli orangutan, such as how the apes will react to the disturbance. And the solutions proposed by PT NSHE, such as building bridges to facilitate orangutan connectivity, haven't been scientifically proven to be effective, he added.

That's why an independent scientific study is needed on the potential impact of the dam, Wich said.

> "PanEco has an MoU with the company so are not perceived as being independent. Same goes for other researchers who are spokespeople for the company," he said. "Again if the company is so sure that they can mitigate their impact on connectivity and habitat loss, then why not let independent scientists do the work and halt the operations? The fact that they do not do this is of concern to the conservation community and not only the IUCN."

The IUCN has since last year been calling for a halt to all projects that threaten the Tapanuli orangutan, in particular the hydroelectric plant. PT NSHE has said the company will not agree to a moratorium unless the government gives the order, arguing the power plant is a priority infrastructure project under the administration of President Joko Widodo, and hence the government is the only one that can determine whether it should stop.

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Featured image: A Tapanuli orangutan in the Batang Toru forest, North Sumatra, Indonesia. Image by Matt Senior.

Articles by: **Ayat S. Karokaro** and **Hans Nicholas Jong**