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Road projects threaten Sumatra's last great rainforests

by Hans Nicholas Jong on 7 August 2017

- *Local officials currently have plans to build roads in Mount Leuser, Bukit Barisan Selatan and Kerinci Seblat National Parks in Indonesia's Sumatra Island.*
- *Conservationists fear these plans could accelerate habitat loss and degradation in this highly biodiverse forest complex, which is home to many endangered species.*
- *Proponents of road development cite the need for increased economic opportunities for local people and evacuation routes in case of natural disasters.*

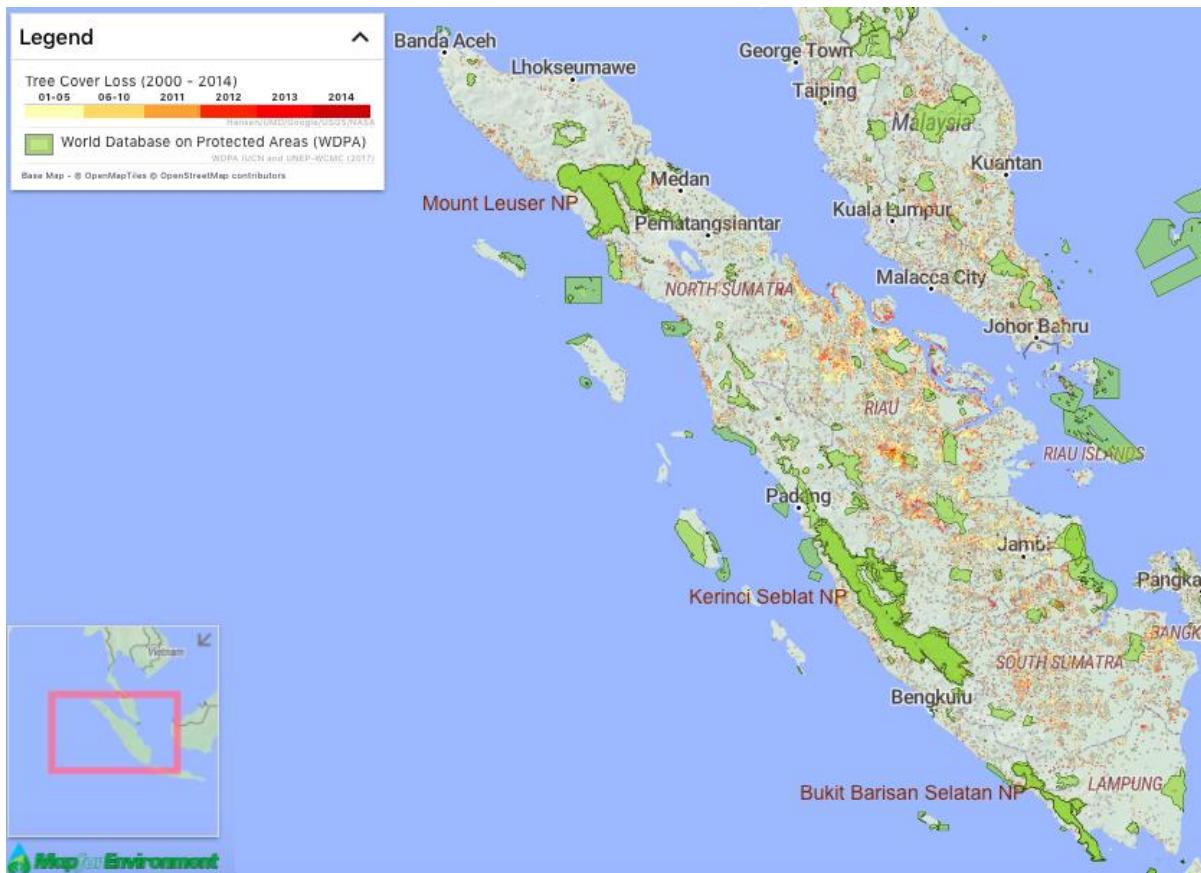
One of the last and largest remnants of tropical rainforest in Asia is under threat from multiple road development plans.

This forest complex, a UNESCO World Heritage Site known as the Tropical Rainforest Heritage of Sumatra (TRHS), is located on the spine of the Bukit Barisan Mountain Range in Indonesia's main western island, Sumatra.

Occupying 2.5 million hectares (9,652 square miles), the site comprises three national parks: Mount Leuser, Kerinci Seblat and Bukit Barisan Selatan National Parks.

Due to its size and location, the site is hailed as one of the largest conservation areas in Southeast Asia and the last habitat for many endangered animals. It is home to an estimated 10,000 plant species and more than 200 mammal species, including the Critically Endangered Sumatran orangutan, tiger, rhinoceros and elephant.

There are currently plans to develop roads in all three national parks, with a particular focus on Kerinci Seblat. The officials backing these projects cite increased economic opportunities for local people, as well as the need for evacuation routes in case of natural disasters.



Mount Leuser, Kerinci Seblat and Bukit Barisan Selatan National Parks extend from north to south along the western coast of Sumatra. Red and yellow shading shows areas that lost tree cover between 2000 and 2014, according to data from the Global Land Analysis & Discovery lab.

Kerinci Seblat National Park

At 1.4 million hectares, Kerinci Seblat is larger than the U.S. state of Connecticut and roughly twice the size of Indonesia's Bali island. It is the second largest terrestrial protected area in Indonesia, stretching for 350 kilometers (217 miles) from northwest to southeast along the Bukit Barisan Mountains.

According to a [2014 paper](#) by geographer Keith Bettinger, decentralization reforms that began in the late 1990s led to an increase in proposals to build roads in the districts around Kerinci Seblat.

"[T]he districts, now relatively independent from the central government, increasingly began to question the contribution of the park to district coffers and local livelihoods," Bettinger wrote.

A recent strategic environmental assessment report ([pdf](#)) coordinated by UNESCO shows that there are currently 12 road corridor plans in the park. These proposals call for a combined total of more than 1,360 kilometers of road development — either the construction of completely new roads or the expansion and paving of existing dirt roads.

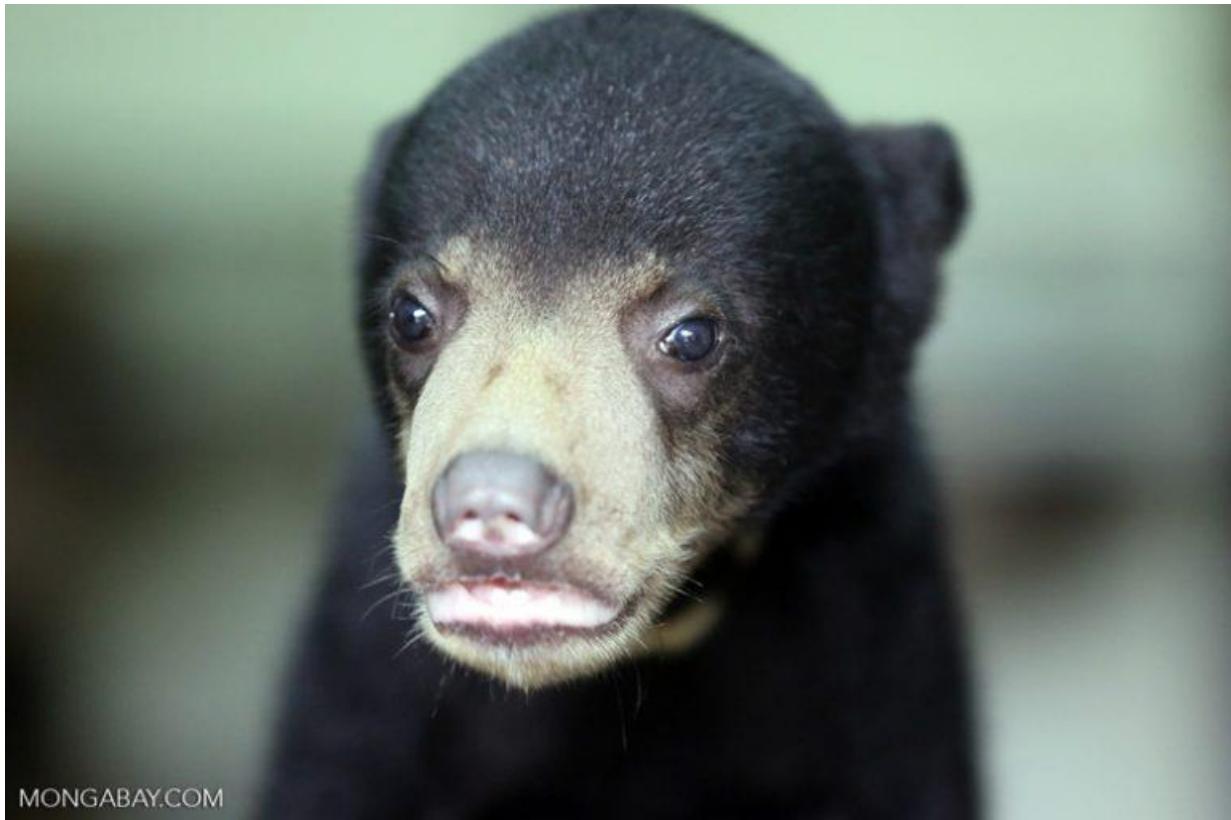
The 12 road corridor plans are divided into four zones. These proposed roads are said to be for economic purposes, to connect isolated areas or to provide evacuation routes.

In the first zone, in the northeast of the park, plans call for an existing 2-meter wide dirt road to be developed into a 6.5-meter wide paved road stretching 60 kilometers.

Three separate road expansion projects are planned for Zone 2, which lies to the east of Zone 1. Each will convert an existing dirt road into a four-meter-wide paved road, creating over 90-kilometers of newly surfaced routes.

Proposals for Zone 3, in the middle of the park, call for three existing dirt roads ranging from 28.9 to 60 kilometers to be paved and widened. Also planned are two completely new paved roads, 153 kilometers and 744.3 kilometers long and four meters wide.

The fourth zone, in the southern part of the park, has three planned projects. One new road is to be built while two existing roads will be developed into seven-meter-wide paved roads.



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A baby Malayan sun bear (pictured here in Borneo), one of the many highly endangered species found in Kerinci Seblat National Park. Photo by Rhett A. Butler/Mongabay.

Bukit Barisan Selatan National Park

Located at the southwestern tip of Sumatra, Bukit Barisan Selatan National Park stretches over 324,000 hectares (1,250 square miles).

The UNESCO report highlights two road improvement plans there, both located in Lampung district.

"The improvement plans are meant to build paved roads with four to eight meters in width and eight to 11.5 kilometers in length. The functions of the roads are to improve connectivity and economic activities. These routes have obtained permits from the Ministry of Forestry in 1987 and 1993," the report explained.

In addition, a completely new road is proposed to link the Sumberejo subdistrict of Lampung with the villages of Way Heni and Way Haru on the west coast of Lampung.

"Accessibility and economy are the main reasons to build this road. Another function given to justify this road is to patrol the national park. The road will have width of four to eight meters and length of 10 kilometers. Legally, the proposal has been approved by the Ministry of Forestry in 2010," said the report.



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Rainforest in Mount Leuser National Park, which is facing multiple threats including road projects, a geothermal plant, hydropower development and agricultural encroachment. Photo by Rhett A. Butler/Mongabay.

Mount Leuser National Park

Hundreds of kilometers of roads are planned for Aceh Province's Mount Leuser National Park and the broader Leuser Ecosystem it is part of. The area is famed as the last place on Earth where tigers, orangutans, elephants and rhinoceros still coexist in the wild. However, many local officials see more and faster roads as a way to connect isolated villages and bring economic growth to the province, which was hard-hit by both the 2004 Tsunami and decades of conflict.

Dating back to 2002, a 400-kilometer road network called the Ladia Galaska has been cited as one of the most damaging projects worldwide by William Laurance, a research professor at Australia's James Cook University. The current Aceh land-use plan contains an expansion of the Ladia Galaska plan, slated to slice through highly sensitive areas of the Leuser Ecosystem and connect the east and west coasts of Aceh.

Acehnese conservationist Rudi Putra, who was awarded Goldman Environmental Prize in 2014 for his work in protecting the Leuser ecosystem, said that the Ladia Galaska project is still going strong, with at least 70 percent of the project already completed.

"It's been ongoing since 2002. In the past, it was temporarily halted due to the escalating conflict in Aceh. But after the peace deal was signed [in 2005], the project proceeded," he told Mongabay. "Now the name of the project is no longer Ladia Galaska because they [the government] have divided the project into small segments and every year the local governments allocate big budgets for the project."

With hundreds of kilometers of paved road having been built, encroachment and habitat loss are inevitable.

"Last year, a road to reach a village called Lesten [in Gayo Lues district] was built with a budget of 15 billion rupiah [\$1.1 million]. Even before the construction of the road was finished, encroachment already ate up forests on both sides of the road," Rudi said. "There's no road built in the Leuser ecosystem that isn't followed by encroachment."

The new governor of Aceh, Irwandi Yusuf, who was sworn in the office in July, vowed during his campaign to protect the Leuser Ecosystem, saying he would revoke a proposal to drill for geothermal energy in the park.

"From his statement, it was clear that he would cancel the geothermal project. But I haven't heard a single statement from him on whether he would cancel the road development projects or not. Hopefully, he'd think of it," Rudi said.



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Fragmented forest in Indonesia. Research shows that more highly fragmented habitats increase the likelihood species will go extinct. Photo by Rhett A. Butler/Mongabay.

Arguments for road development

John Abernethy, a doctoral student in conservation biology at Liverpool John Moores University, studied how changes in forest structure influence Sumatran orangutans at Sikundur research site in the eastern lowland forest of the Leuser Ecosystem.

His work had him going back and forth from cities to villages located in the Leuser Ecosystem.

"Just going from Medan, the capital of North Sumatra province, to the village where I conduct my field study took four hours in the bumpiest road," Abernethy told Mongabay on the sideline of the 28th International Congress for Conservation Biology (ICCB) conference in Cartagena, Colombia.

Even moving around within the forests posed a tremendous challenge.

"I try to get between these two villages which are just 10 kilometers in a straight line, but to get there I had to travel like two hours on a motorbike all the way around. It should be easier to get to," said Abernethy.

This lack of connectivity is prevalent throughout the TRHS.

In his 2014 paper, Bettinger cited the example of Kerinci district in Jambi province, a densely populated enclave completely surrounded by Kerinci Seblat National Park.

The district is only accessible via three roads, adding to travel times and increasing the cost of consumer goods.

People from Kerinci district have to travel for at least 12 hours by road just to reach the provincial capital, Jambi City, and seven hours to reach the nearest port, Padang.

Therefore, many stakeholders, including local communities, argue that roads lead to an economic advantage by providing shorter routes to existing markets and additional routes to new markets. For farmers in the mostly agricultural communities surrounding the park, new, shorter, and better roads decrease transportation time and costs.

"Most of the districts around the park argue that it is an obstacle to development. Not only can they not benefit from the timber, ore, and land sequestered within the park, but the ban on existing roads serves as an enforced isolation that puts them at an unfair disadvantage in relation to other districts," said Bettinger.

Furthermore, local stakeholders also presented other arguments to push for the road developments.

"Another main reason is to ensure evacuation routes if there are tsunamis along the west coast of Sumatra or if active volcanoes [like Mount Kerinci] erupt," the UNESCO report explained.



Arguments against road development

The main argument against the road development plans is that their construction would have enormous ecological consequences.

A 2016 ecological study undertaken by consulting firm Remark Asia concluded that the planned road construction in Kerinci Seblat would deforest 14,595.27 hectares of rainforest.

The report noted that such massive deforestation would lead to forest fragmentation and decrease the habitats of key species such as elephants, tigers, tapirs, rhinoceros, orangutans and rafflesia, the world's largest flower.

According to the study, the park's tapirs would suffer the greatest amount of habitat loss, followed by rafflesia, tiger and elephant.

Abernethy, meanwhile, voiced his concern over the threat that the road development posed for the Sumatran rhino, which currently competes with the Javan rhino for the unenviable title of the world's most endangered rhino species.

With an estimated total population of fewer than 100, the Sumatran rhino has been pushed to the edge of extinction by forest conversion for agriculture and human settlements.

Once roaming in many parts of Southeast Asia, they can now only be found in small populations in Indonesia, which are in some cases too small to sustain breeding. These scattered populations are mainly confined to Sumatra's national parks, with a few still living in Indonesia's part of Borneo Island as well.

"Just by the location, I'm going to say Sumatran rhinos are going to be the first one [to be affected] because Kerinci is the last big habitat," said Abernathy. He explained that the Kerinci Seblat National Park has a very small corridor that allows rhinos to move from one side of the park to the other. "If that gets cut off, then they're not going to move there. Compared to other species, they seem to be the most affected since they're the shyest."

Abernathy also voiced concerns over the fate of orangutans in the site.

"Orangutans are going to be pretty affected as well, just because they don't really cross the roads. If you got a gap that is more than four meters, they don't really want to come to the ground. Even if they cross the road, they got extra danger in the form of cars and traffic," he said.

Besides increasing fragmented habitats, conservationists and park officials also point to the secondary effects of road construction. Roads create easy access to previously unexploited forest, leading to a sharp increase in forest conversion, illegal logging, hunting and trade in wildlife and forest products.

"There's a problem as a conservationist where you'd want to help the locals but you know that when the development comes, so does exploitation. Once you got a road going through national park, then people would start coming in and people going to utilize it. You can't really control what's going to happen and who's coming in. It's difficult," said Abernathy.



A baby orangutan in North Sumatra, Indonesia. Along with habitat loss due to mining, orangutans in both Sumatra and Borneo are threatened by fires and deforestation for oil palm and pulp plantations. Photo by Rhett Butler/Mongabay.

Government responses

The Indonesian government has addressed the concerns of existing and new road development plans through its routine reports submitted to the UNESCO'S World Heritage Committee.

"The State Party would like to reiterate that there are currently no new road developments nor any requests for the development inside the property," the latest report said.

The report details the progress of the government's five-year action plan to remove the TRHS from UNESCO's List of World Heritage in Danger, which the site has been inscribed on since 2011.

That said, the Ministry of Environment and Forestry's director of conservation areas, Suyatno Sukandar, believes that completely abandoning any road development in the site would hamper the nation's effort to improve the livelihoods of people living in the area.

"We have explained that if we build the roads, it is for the interest of local people. We have to open up their isolation ... The point is the road development should proceed if possible," he told Mongabay. "The solution is by negotiating. We will strengthen [our negotiation] by asking for support from the World Heritage Committee's members in the form of intervention."

Sukandar also said the government might focus on lobbying the committee to allow the development of roads that are deemed to be urgent — the UNESCO report indicated some routes could still be developed as long as they were done carefully, such as those designed to serve as evacuation routes during natural disasters.

"From the 12 road channels [proposed in Kerinci Seblat], there are indeed some that are urgent to be developed, while others are not really necessary. So Indonesia has to keep developing. The roads are still needed, but which roads we will build? We will keep going on, focusing on the routes which we deem to be safe," he explained. "We will look for a middle ground where everyone benefits and none is harmed."

Meanwhile, Kerinci Seblat National Park head Muslim Arief Tongkagie said the government could focus on improving existing roads in the three national parks, instead of building new ones.

"It's a win-win solution because improving existing roads is necessary to shorten traveling time, opening up access to local people. So the solution is to widen, improve and fix existing roads," he told Mongabay.

Shahbaz Khan, the director of the UNESCO Regional Science Bureau for Asia and the Pacific, declined to comment on the ministry's responses. "It's a very sensitive matter. Every road has its own special [characteristics]. The best is to read the report because it's not a blanket kind of statement," he told Mongabay."



Red and pink ginger flower in Mount Leuser National Park. Photo by Rhett A. Butler/Mongabay.

Critiques from civil society

A coalition of NGOs including the Sumatran Orangutan Society and green group Forest, Nature and Environment of Aceh (Haka) has criticized the Indonesian government's response to UNESCO.

"We urge the World Heritage Center to directly question the State Party on the extensive infrastructure development plans in the TRHS," the coalition said in a March 2017 policy paper.

The Indonesian Forum for the Environment (Walhi), the country's largest environmental pressure group, meanwhile, asked the government to follow the recommendations made by UNESCO'S environmental assessment on the road development plans.

The director of Walhi Bengkulu chapter, Beni Ardiansyah, said that the government should move from the road development plans to solving conflicts in the site so that local people could be empowered.

"The social forestry program with the partnership scheme could be done by the government to resolve the conflicts and empower local people to improve their livelihoods," he said.

Banner image: a hornbill in the Leuser Ecosystem. Photo by Rhett A. Butler/Mongabay.