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Mongabay Series: Amazon Infrastructure

Trans-Purus: Brazil's last intact Amazon forest at immediate risk (commentary)

Commentary by Philip M. Fearnside; Lucas Ferrante; Aurora M. Yanai; and Marcos Antonio Isaac Júnior on 24 November 2020

- *Brazil's remaining Amazon forest is roughly divided in half by the Purus River, just west of the notorious BR-319 (Manaus-Porto Velho) highway. To the west of the river lies the vast "Trans-Purus" region — intact rainforest stretching to the Peruvian border. To the east, the forest is already heavily deforested, degraded and fragmented.*
- *Multiple threats are now closing in on the Trans-Purus region, and expected to increase greatly with the impending "reconstruction" of the BR-319. Planned roads linked to the BR-319 would open the Trans-Purus region to land grabbers (grileiros), organized landless farmers (sem-terras) and other actors from Brazil's "arc of deforestation."*
- *A massive planned gas and oil project would also likely lead to new road connections to the other planned highways in the Trans-Purus area, opening even more of the region to invasion. Asian oil palm and logging companies are among those with a historical interest in the area.*

- *This last large block of intact Brazilian Amazon forest is essential for ecosystem services — maintaining biodiversity, carbon stocks, and the forest water cycling functions essential for rainfall in other parts of Brazil and neighboring countries. This post is a commentary. The views expressed are those of the authors, not necessarily Mongabay.*

The text of this commentary is updated from an earlier Portuguese-language version of the first author's column at Amazônia Real.

Why is the Trans-Purus region important?

The Brazilian Amazon is divided between its eastern side, where the forest is heavily deforested and fragmented, and the western side (west of the Purus River, in Amazonas state), where the forest is largely intact due to the lack of accessibility by road.

But this situation in the western part of the Amazon is about to change radically due to a series of roadbuilding threats. The impacts would be enormous if a new frontier in this "Trans-Purus" region is opened to the migration of actors and processes already at work in the "Amazon arc of deforestation" (the area along the southern and eastern edges of the Amazon rainforest where deforestation has historically been concentrated).

The Trans-Purus region is key to maintaining Amazon biodiversity, as shown by a 2018 study published in the journal *Nature Climate Change* by Vitor Gomes and collaborators. This much-needed analysis of the combined effect of projected deforestation and climate change on Amazonian biodiversity arrived at a bleak conclusion: 49.6% of the 6,394 tree species with reliable data would be threatened by 2050, according to Criteria A4, B1 and D2 of the International Union for the Conservation of Nature and Natural Resources (IUCN).

New threats to the Trans-Purus region make this Amazon outlook even more dire than that shown by the Gomes study. The discovery that (only) half of the tree species would be threatened by 2050 depends heavily on the large block of forest west of the Purus River remaining intact. Importantly, this block of forest remains intact in the deforestation scenario used by Gomes and collaborators because it is based on the projection of the model by Soares-Filho and collaborators (Figure 1). This deforestation simulation *did not* consider the roads planned in the Trans-Purus region that would open this vast block of forest for the entry of deforesters.

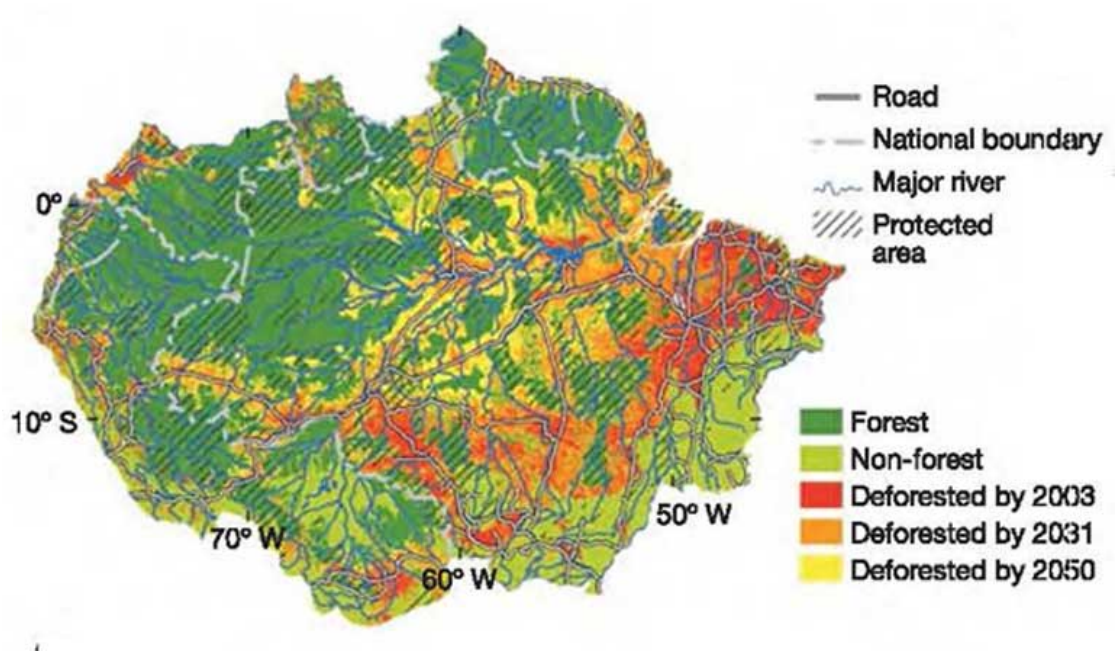

Figure 1. The simulation of deforestation in the Amazon by 2050 by Soares-Filho and collaborators used in the calculations by Gomes and collaborators. The large block of forest west of the Purus River remains completely intact because the model does not include the roads planned in this area, such as AM-366. Image courtesy of Nature.

In addition to biodiversity, the Trans-Purus region is critical to maintaining the forest carbon stock to prevent further global warming. Carbon stocks in this area are huge, due to both the region's vast extent and the high biomass of each hectare of undisturbed forest. Carbon in the trees and in the soil below would be released into the atmosphere if this forest is lost, either through deliberate deforestation or through forest fires induced by the fragility of the forest brought on by logging and the presence of sources of ignition to maintain neighboring pastures and to prepare recently deforested land for planting. Projected climate change also makes fires more likely. The Amazon is one of the places in the world that is expected to be most strongly impacted by global warming. The emissions that would result from a Trans-Purus forest loss scenario would make the Amazon an even greater source of greenhouse gas emissions and their impacts.

Also, the Trans-Purus region is key to maintaining the rainfall regime in the western Amazon itself, in other parts of Brazil and in neighboring countries like Argentina. The city of São Paulo, the largest in the country, depends on this region for the precipitation and the water that the population drinks. Even with the Trans-Purus region still intact, in dry years São Paulo has already been forced to resort to the "dead volume" of its reservoirs, with only a few days of margin before the water runs out completely. The rainy season in São Paulo, when the reservoirs fill, coincides with the maximum transport of water vapor by the "flying rivers" — the moisture-laden winds that pass from east to west over the Trans-Purus region, make a curve because they cannot pass over the Andes, and head toward São Paulo. These winds

supply 70% of the rain in the São Paulo region during its rainy season from December to February.

Much of Brazil's hydropower also depends on this water. The continuation of this great ecosystem service depends on keeping the Trans-Purus forest standing because the trees there recycle vast amounts of moisture, returning about half of the water that falls as rain to the atmosphere, and thus supplying the flying rivers.

Finally, the impact of opening the Trans-Purus region to deforestation would have serious impacts on the traditional populations that inhabit the area. Traditional riverside dwellers (*ribeirinhos*) and "extractivists" (collectors of Brazil nuts and other non-timber forest products) are often expelled with the arrival of large land grabbers and ranchers, as has been happening on other deforestation frontiers. Indigenous peoples would be severely impacted.

The threat of the Tapauá access road

An illegal access road (*ramal*) is currently being built to connect Tapauá, on the Purus River, with the BR-319 highway. This road threatens not only the two Indigenous Lands and a national park that are located between Tapauá and the BR-319, but it would also provide a gateway to the Trans-Purus region.

The illegal access road has so far been built from Tapauá towards the BR-319, almost exactly following the route of the planned AM-366 highway (Figures 2-4). The access road threatens the Apurinã do Igarapé São Jõao and Apurinã do Igarapé Tauamirim Indigenous Lands, in addition to the Nascentes do Lago Jari National Park. According to Indigenous leader Waldemiro Farias da Silva Apurinã, the access road is being built by local ranchers with the encouragement of the Tapauá prefecture, using machinery from the prefecture. We have heard several reports in Tapauá about an agreement made with farmers along the BR-319 for them to build an access road in the opposite direction to meet the illegal road that is being built from Tapauá. The threat is immediate.

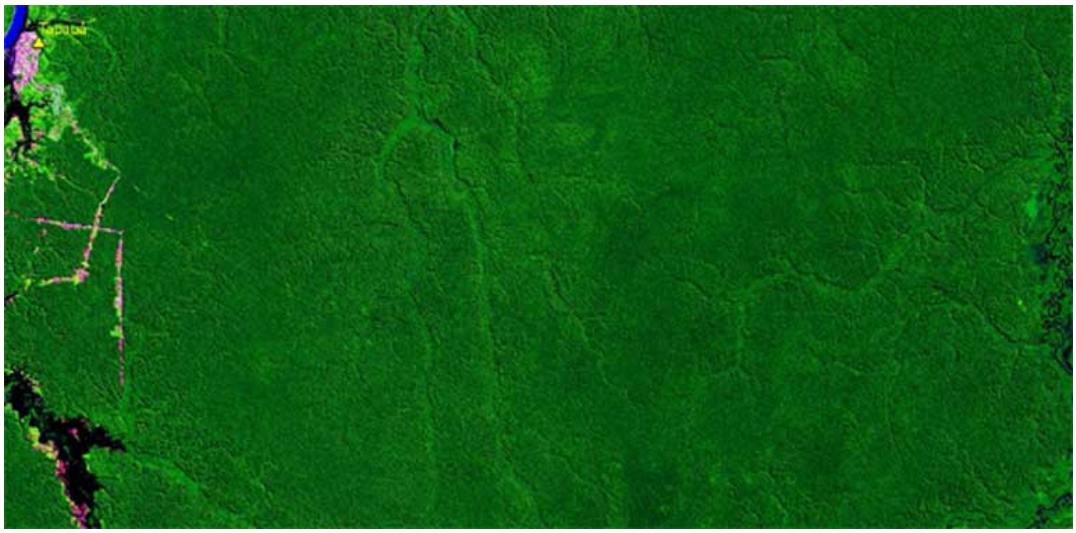

Figure 2. A 2018 satellite image showing an illegal access road (ramal) beginning in Tapauá and progressing toward the BR-319 highway. The access road is the thin line descending diagonally from Tapauá, in the upper left corner, towards the center of the image. Image courtesy of LANDSAT.

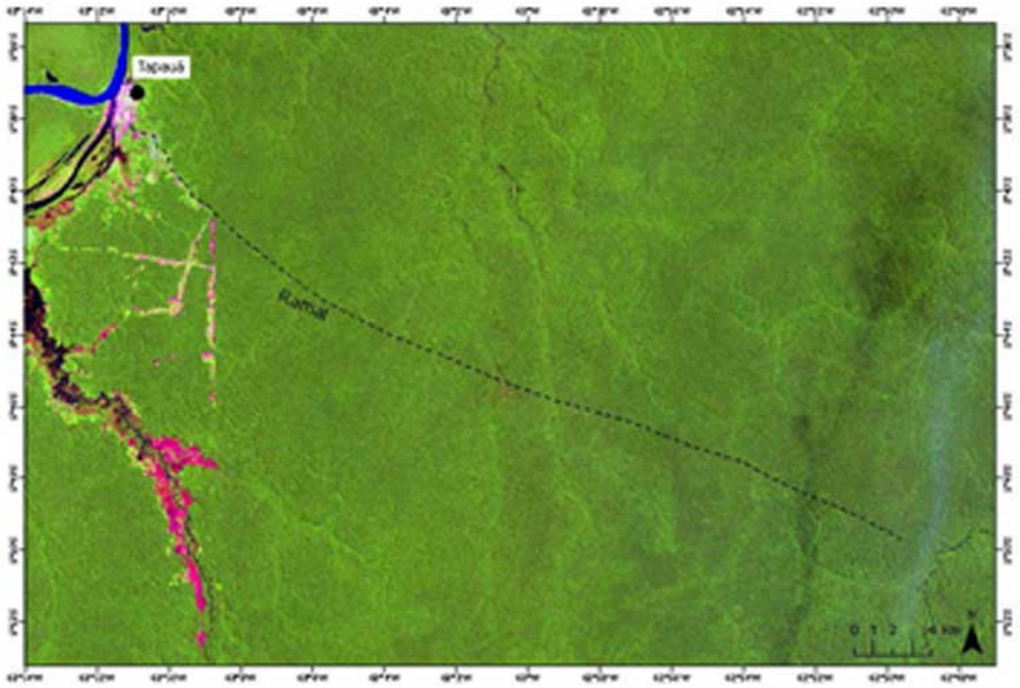

Figure 3. Tracing of the illegal access road using LANDSAT images from 2007, 2018 and 2019. Image: LANDSAT.

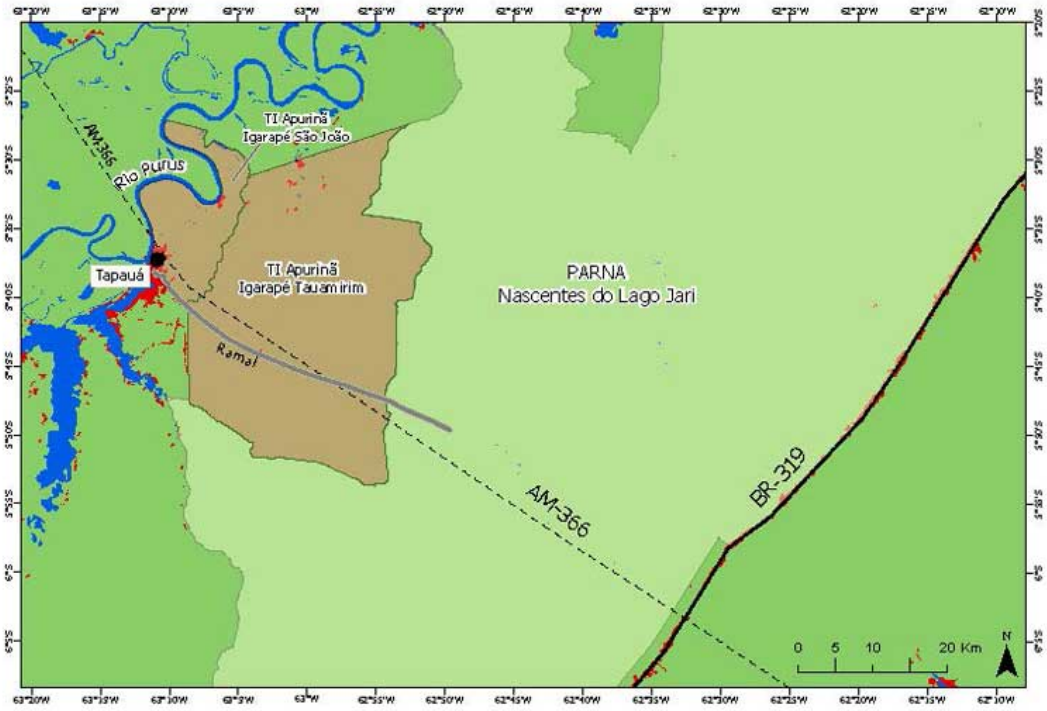

Figure 4. Location of the access road in relation to the route (as planned by DNIT) of AM-366. The Nascentes do Lago Jari National Park and the Apurinã do Igarapé São João and Apurinã do Igarapé Tauamirim Indigenous Lands are shown with deforestation (in red) up to 2019 according to the PRODES satellite monitoring project of INPE, Brazil's space agency. Image: INPE.

Indigenous leader Waldemiro Apurinã confirmed on August 20, 2020 that the access road is advancing rapidly and that invaders are deforesting in the Apurinã do Igarapé São João Indigenous Land, as shown by his photos (Figures 5-7). The chief reported that the invaders are not Indigenous and that the Apurinã are very afraid to go to these areas because the cutting of trees is massive even inside the Indigenous Land, putting all villages at risk. According to the leader, the Indigenous people are being threatened.

Figure 5. Illegal access road bordering the Apurinã do Igarapé São João Indigenous Land. Image: Chief Waldemiro Apurinã.

Figure 6. Deforestation and a sign marking the Apurinã do Igarapé São João Indigenous Land. Image: Chief Waldemiro Apurinã.

Figure 7. Deforestation by non-Indigenous invaders in the Apurinã do Igarapé São João Indigenous Land. Image: Chief Waldemiro Apurinã.

On August 25, 2020, the Indigenous leader filed a letter of complaint with the Federal Public Ministry and asked for the letter to be disclosed to the public (Figure 8). The Federal Public Ministry is the public prosecutors' office created by Brazil's 1988 constitution to defend the rights of the people.

Letter of complaint to the Federal Public Ministry

I Waldomiro Farias da Silva Apurinã, Chief of the Apurinã people of the Municipality of Tapauá, in the interfluve between the Purus and Madeira Rivers, I come to denounce the announced genocide of Apurinã people due to the work carried out by the federal government to re-pave the BR-319. We of the Apurinã people were not consulted as established by ILO Convention 169 and Decree 5051/2004 which establishes that indigenous peoples who are impacted by construction projects are consulted in a free, prior and informed manner and may even veto or participate in the design of the project. DNIT has failed to comply with Convention 169 of the ILO to which Brazil is a signatory and Presidential Decree 5051/2004 when not consulting indigenous peoples about this project.

Just the maintenance of the highway has already caused great deforestation, land grabbing illegal lands and branches that have invaded the indigenous lands of Tapauá and other indigenous lands of the BR-319. DNIT has removed preconditions that could guarantee the protection of the forest, such as the inspection posts that were previously considered as a mandatory precondition but that have lost their obligatory status. Federal Judge Jaiza Maria Pinto Fraxe authorized the paving of lot "C" of the middle

section, saying that DNIT had been complying with its obligations, which is not true, as DNIT has refused to carry out the free, prior and informed consultation of the indigenous peoples, in addition to lot “C” of the “middle stretch” not having its environmental studies. The lack of environmental studies for this stretch is a major concern because the impact of the project without environmental studies can affect the water supply and hunting of indigenous communities in the vicinity and may culminate in the extinction of these peoples. Both the consultation of indigenous peoples and the need for environmental studies has already been pointed out by specialists at the BR-319 Sustainability Forum organized by the Federal Public Ministry. This need was also pointed out technically by scientists in a study recently published in the renowned scientific journal Science.

BR-319 is providing access to. Apurinã lands for invaders, which has threatened and intimidated indigenous people as well as spreading the hitch-hiking virus in communities. Thus, the Apurinã people understand that the attempt to speed up the construction of the BR-319 highway during the pandemic by DNIT and the Civil House [Casa Civil] without consulting the Apurinã people and other indigenous peoples, which is a major violation of human rights and a genocide are being affected by BR-319 of the indigenous peoples of the Purus and Madeira Rivers interflow for not complying with Convention 169 ILO and Decree 5051/2004, exposing various indigenous territories to invaders, loggers and land grabbers and accelerating the contagion of indigenous populations by the hitch-hiking virus.

We of the Apurinã people urgently ask for the attention of the Federal Public Ministry, mainly from attorneys Rafael Rocha and Fernando Merloto Soave, as well as from federal judges who have an obligation to enforce Brazilian law as the decree 5051/2004. In this way, we ask not only to cancel any bidding for the paving of the BR-319 highway as well as the suspension of highway maintenance, until all indigenous peoples that may be impacted are consulted as established ILO Convention 169 and Presidential Decree 5051/2004. Indigenous peoples are under attack, our territories are being invaded and the federal government has undertaken construction projects that threaten our lands and our people, this genocide is already underway and the existence of indigenous peoples in the Amazon depends on the law being enforced.

Tapauá, August 25, 2020

Waldomiro Farias da Silva Apurinã
Chief of the Apurinã

Figure 8. English translation of the letter of complaint to the Federal Public Ministry by Chief Waldemiro Apurinã.

The threat of the AM-366 highway

The proposed AM-366 highway and associated roads would provide access from the BR-319 (Manaus-Porto Velho) highway to the huge block of forest in the Trans-Purus region. AM-366 would cross the Purus River at Tapauá and connect the BR-319 to Tefé, Coari and Juruá (Figure 9).

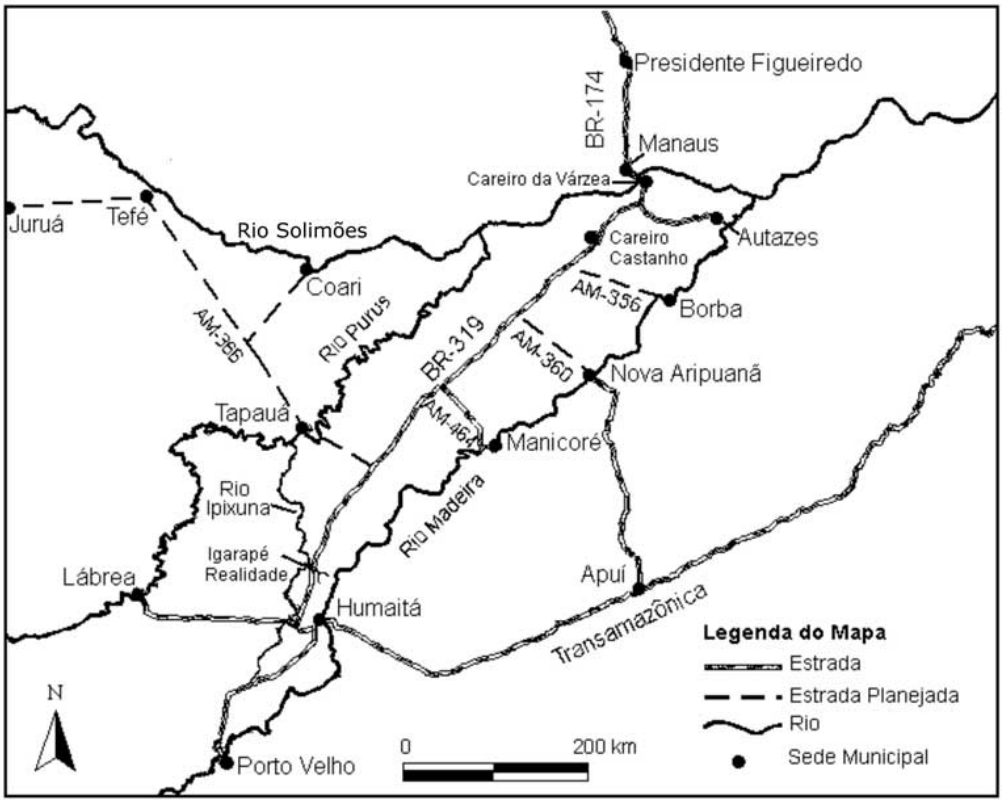

Figure 9. Side roads planned from the BR-319 highway, including AM-366, which would open the Trans-Purus region to deforestation. Source: Fearnside & Graça.

AM-366 would pass through the Nascentes do Lago Jari National Park and the Apurinã Igarapé Tauamirim and Apurinã Igarapé São João Indigenous Lands, to reach Tapauá from the BR-319, a federal highway that was abandoned in 1988, but which has been undergoing "maintenance" since 2016, pending approval of a federal Environmental Impact Study (EIA) before being "reconstructed". The decree creating the national park contains a clause that excludes a strip of land bisecting the park specifically to allow the passage of AM-366.

Once opened, AM-366 will provide access to an intact forest, and most of the events that follow will be outside of the government's control. The announcement of plans for "governance" along roads does not change this picture, as shown by the history of other highways such as the BR-364 (Cuiabá-Porto Velho) and BR-163 (Santarém-Cuiabá).

In the case of the BR-319, events are already going in the opposite direction from the planned governance, as shown by the appearance of an illegal access road in February 2020 branching off of the BR-319 and entering a protected area (the Lago do Grande Capanã Extractive Reserve).

In the case of AM-366, large land grabbers (*grileiros*), individual squatters (*posseiros*), organized landless farmers (*sem-terras*), and loggers are among the actors expected to take advantage of the opportunity offered by road access to unclaimed land.

The large area of "undesignated land" (*terras devolutas)* in this area makes it especially attractive to land grabbers, and this danger is increased by a succession of "land-grabbers' laws," the third of which is currently advancing in Brazil's House of Deputies. The possibility of the arrival of biofuel companies represents another risk. There are also international groups with an interest in the area, such as Malaysian oil palm plantation companies that tried to buy areas in the area of Tefé in 2008, and Malaysian and Chinese logging companies that tried to buy areas along the Purus River in 1997.

The threat of the BR-230 highway

An old plan from Brazil's 1964-1985 military dictatorship for an extension of the BR-230 highway from Lábrea to Brazil's border with Peru still exists. This road appears as planned on the maps of the National Department of Transport Infrastructure (DNIT) (Figure 10). The road continues to appear in publications (e.g., Figure 11), although it does not appear in Brazil's multiannual plans. However, this type of infrastructure construction project can suddenly surge forth without warning, even in cases where the existence of plans is denied by authorities, as has happened several times in the region's recent history. A current example is the emergence of the plan for a large dam on the Trombetas River as part of the Barão do Rio Branco Project announced by the Bolsonaro government.

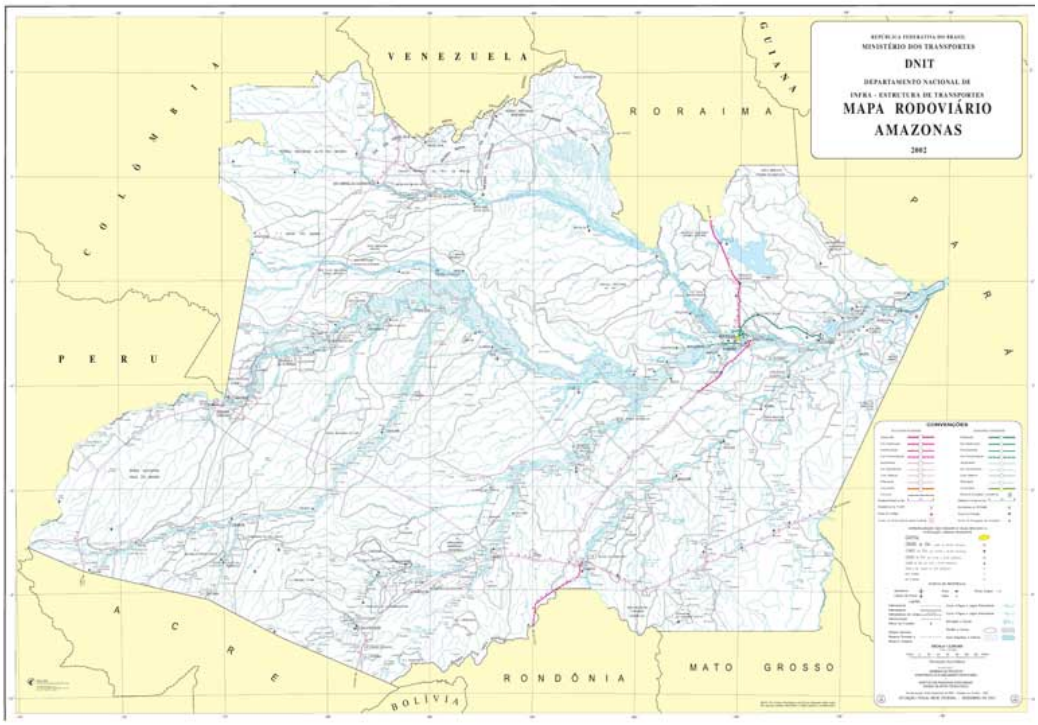

Figure 10. DNIT map showing the extension of BR-230 across the Trans-Purus region. (Source: DNIT (2002).

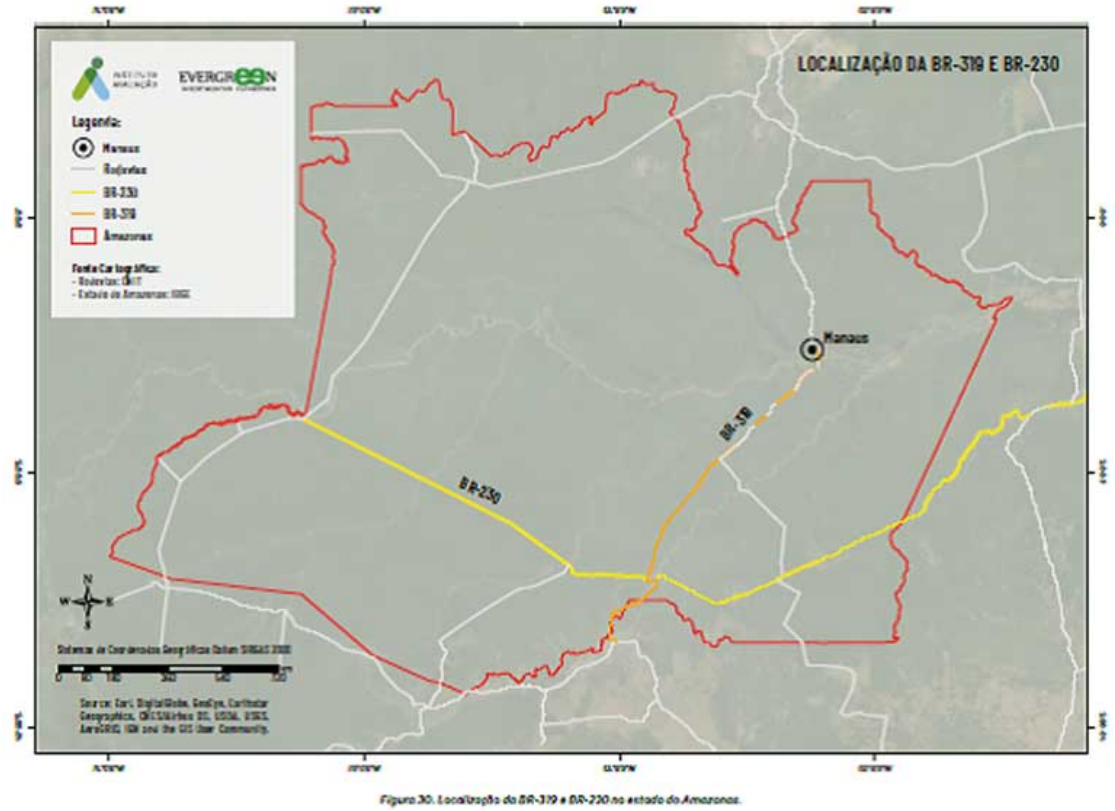

Figure 11. Map showing a planned extension of the BR-230 highway from Lábrea to the Peruvian border. The area between the Upper Amazon (Solimões) River and the BR-364 highway in Acre would be cut in half, thus giving access to the entire Trans-Purus region. Source: Brasil & Gonçalves (2019).

The threat of gas and oil

Another threat to the Trans-Purus region is the massive "Solimões Sedimentary Basin" oil and gas project, which provides for a network of wells spread over a vast area covering approximately one third of the State of Amazonas (Figure 12). Even though road construction is not part of the announced plan (see here, here, here and here), for economic reasons, oil companies may pressure the government to increase land access in this area. Roads for this purpose would probably branch off the planned AM-366 highway, thus connecting the well area to BR-319 and to the existing gas terminal in Coari (see here, here and here).

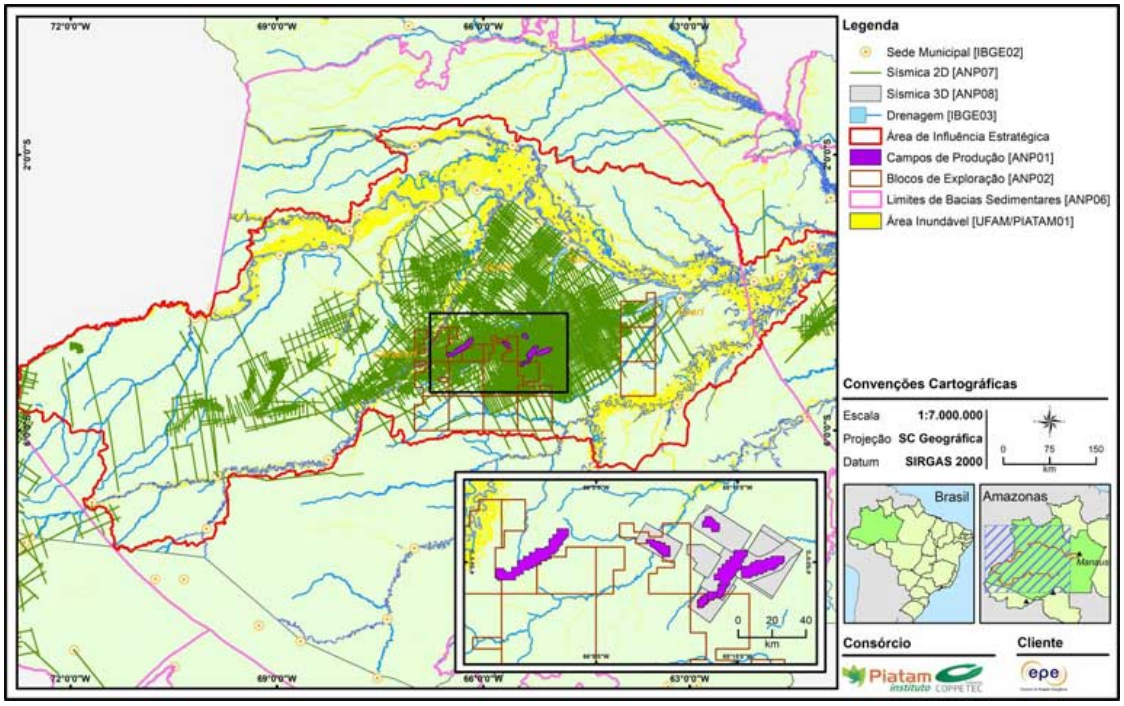

Figure 12. Map of gas and oil blocks (EPE, p. 65). The purple areas have wells currently in production. The thin green lines represent the locations for future drilling where seismic surveys have already been carried out. The project's "Strategic Influence Area," delimited by the red line, covers 47 million hectares (larger than the US state of California). Image: EPE.

Brazil's existing environmental licensing system is being rapidly dismantled through administrative changes and the acceleration of approvals for laws and constitutional amendments that would remove any impediments to the BR-319 and other highways, including legal impediments posed by Indigenous lands (see here and here).

These access routes would facilitate the opening of the vast forest block in the western part of the state of Amazonas. The area to be opened by the AM-366 and associated roads is extremely vulnerable, since most of it is public land (undesignated land, or "*terras devolutas*") that is most attractive for invasion by landless farmers (*sem-terras*) and land grabbers (*grileiros*).

To conclude: this Trans-Purus block of intact forest is what currently secures the environmental wellbeing of the country, since this is the area on which the Amazon's and Brazil's ecosystem services are most dependent. These services include maintaining biodiversity, the carbon storage that prevents escalating global warming, and the water cycling that provides rain not only for the Amazon, but also for São Paulo and other parts of the Southeast, South and Center-West regions of Brazil.