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GC009-0015 - TransPurus: Amazonia's biogeochemical cycles depend on the fate of the region's largest block of intact forest

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Abstract

Brazil's Amazon deforestation is one of the world's great environmental problems, and the fate of the "TransPurus" region -- the vast block of intact forest to the west of the Purus River in Brazil's state of Amazonas -- will be the deciding factor in maintaining Amazonia's biogeochemical cycles and associated ecosystem services, including carbon storage and water cycling and biodiversity. The Purus River effectively divides Brazilian Amazonia between its eastern side (where the forest has been heavily affected by deforestation, fragmentation and degradation), and the western side (where the forest is largely intact due to lack of accessibility by road). This situation in western Amazonia is likely to change radically if the proposed AM-366 and associated roads are built, opening this block of forest with a connection to Highway BR-319 (Manaus-Porto Velho). The AM-366 would cross the Purus River at Tapauá and link BR-319 to Tefé, Coarí and Juruá. BR-319 is a highway that was abandoned in 1988 but that has been "maintained" since 2015 while awaiting approval of a federal environmental impact assessment (EIA) before being "reconstructed." Another threat comes from the "Solimões Sedimentary Basin" project that would open a substantial part of the TransPurus area to oil and gas drilling, potentially totaling thousands of wells. This would greatly increase the probability of roads being built to reduce the costs of servicing these wells. Roads are the primary drivers of deforestation in Brazil. The TransPurus area would be subject to invasion by actors ranging from landless farmers to large "land grabbers" (*grileiros*), and would be likely to attract oil palm and logging interests. Logging can potentially provoke large-scale forest degradation in conjunction with its increasing the vulnerability of forest to fire. Should the huge area of intact forest in this region be lost, potential release of greenhouse gases would be of a scale that could be a key factor in pushing global temperatures beyond a "tipping point" leading to global warming escaping from human control to begin a "runaway greenhouse" ending in a "hothouse Earth." It would also threaten the source of water vapor for the "flying rivers" -- winds that carry water vapor recycled through Amazonian trees to São Paulo and other parts of Brazil and neighboring countries.

Plain Language Summary

The fate of the vast block of intact forest in the "TransPurus" region will be the deciding factor in maintaining Amazonia's biogeochemical cycles and associated ecosystem services, including carbon storage and water cycling and biodiversity.

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