



Another year of fire – Amazonia is burning

It's burning. In Siberia, on the west coast of North America, around the Mediterranean, in Amazonia – forests are burning across the globe. The fires are stoked by unprecedented heat waves: almost 50°C in western Canada and the Mediterranean, over 30°C in Siberia. The climate crisis is becoming a fire crisis – and perpetuating itself.

The current situation in Amazonia

As of 3 August 2021, 267 major fires were burning over 1,000 km² in Amazonia, three quarters of them in Brazil.¹ On 6 August 2021, the Brazilian space agency INPE² revealed that some 8,700 km² of rainforest had already been deforested in 2021. The Amazon research institute in Brazil reported on 20 August that 10,476 km² of rainforest had been destroyed between August 2020 and July 2021, significantly more than in the same period last year³. This makes Brazilian President Jair Bolsonaro first three years in office the three years with the highest levels of deforestation since 2008. Deforestation, degradation and fires reinforce one another: residual wood on cleared and degraded areas burns like tinder and the soils dry out faster since the closed forest cover that previously retained moisture and protected soils from both direct sunlight and wind is patchy or completely gone.

Nature study: From the sink to the source

On 14 July 2021, Luciana Gatti, a researcher at INPE, concluded in a widely acclaimed study published in Nature⁴ that Southeast Amazonia had mutated from a sink to a source of greenhouse gases. With a small plane, she and her team repeatedly flew over the same measuring points in the southeast, southwest, northeast and northwest of the Brazilian Amazon at various altitudes over a period of nine years. This allowed them to measure the levels of carbon dioxide and carbon monoxide in the air columns above these points. Their conclusion: Amazonia has changed from a sink to a source of greenhouse gases because of fires. Without the fires, Amazonia would have remained a carbon sink.

Further studies: From rainforest to savannah?

Gatti's study confirms earlier warnings by scientists about the interplay between the climate crisis and deforestation: In 2019, the renowned researchers Lovejoy and Nobre predicted that in 10 to 15 years the southern Amazon will become a savannah.⁵ In January 2020, P.M. Brando et.al spoke of the "gathering firestorm in



the southern Amazon". Their findings suggest that projected climatic changes will lead to a doubling of the area burned by forest fires, affecting up to 16% of the region's forests by 2050.⁶

IPCC: Fire weather conditions are increasing

In its latest report of 9 August 2021, the Intergovernmental Panel on Climate Change (IPCC) warned urgently against a further increase in "fire weather" in Amazonia⁷: temperatures are expected to rise by 0.2-0.3°C per decade, dry spells are already longer and will increase in length and geographical extent, and the likelihood of extreme droughts will double. Precipitation is decreasing, as is soil moisture. Unusually wet and dry periods will increase and river flows will fluctuate more drastically. While the west of Amazonia will remain humid, the number of hot and dry "fire weather situations" will increase, especially in the east and south. The IPCC writes that "the combination of deforestation, drought and increased fires may push the rainforest ecosystem past a tipping point where there is rapid degradation of the land surface, a sharp reduction in the hydrological cycle of evaporation and precipitation, greater precipitation runoff and a further shift towards a drier climate."⁸

The vicious circle of fire thus closes: fires increase emissions which further drive the climate crisis and these, in turn, cause rising temperatures, more drought – and thus more fires.

COICA: A humanitarian emergency

It is important, though, not to focus on carbon cycles and their climate relevance alone. The drama has many facets: people die in fires, are injured or lose their livelihoods, animals die painful deaths, plants wither or burst into flames. Biomass, biodiversity, emissions and human rights – everything is connected. In August 2019, COICA, the umbrella organisation of indigenous organisations in the Amazon basin and Climate Alliance's long-time partner, published an "Open Letter from Indigenous Peoples on the Ecological and Humanitarian Emergency" in view of the forest fires in Brazil and Bolivia.⁹ COICA sees its warnings confirmed by the IPCC report.

Climate Alliance: For the protection of indigenous territories

There is another way. In protected regions and especially in indigenous territories, the rainforest is doing best. This has been shown by a number of recent studies, which have already been discussed in an earlier Climate Alliance article.¹⁰ And by avoiding new clearings, the overall emissions from fires can be reduced and the spread of fires to protected areas and indigenous lands can be prevented. Trade agreements such as the Mercosur agreement, however, lead to further deforestation. Climate Alliance and its members thus denounce such agreements,



in support of the protection of indigenous territories and the rights of their inhabitants.

SOURCES

1. Finer M., Costa H., Villa L. (2021): Amazon Fire Tracker 2021: August Update. MAAP 2021, #3. URL: https://maaproject.org/2021/amazon_fires-august/ (Accessed on 4 October 2021).
2. Vargas A.P. (12 August 2021): Fires Rage Over the Amazon and the Entire World. But There Is Still Time to Act! URL: <https://amazonwatch.org/news/2021/0812-fires-rage-over-the-amazon-and-the-entire-world-but-there-is-still-time-to-act> (Accessed on 4 October 2021).
3. Imazon.org (19 August 2021): Deforestation in the Brazilian Amazon reaches 2,095 km² in July, and the last 12 months cumulative is the highest in 10 years. URL: <https://imazon.org.br/en/imprensa/deforestation-in-the-brazilian-amazon-reached-2-095-km%C2%B2-in-july-and-the-last-12-months-cumulative-is-the-highest-in-10-years/> (Accessed on 4 October 2021).
4. Gatti L.V., Basso L.S., Miller J.B. et al. (2021): Amazonia as a carbon source linked to deforestation and climate change. *Nature* 595, 388–393. URL: <https://doi.org/10.1038/s41586-021-03629-6> (Accessed on 4 October 2021).
5. Lovejoy, T., Nobre, C. (20 December 2019): Amazon tipping point: Last chance for action. *Science Advances*, 5(12), eaba 2949. URL: <https://www.science.org/doi/10.1126/sciadv.aba2949> (Accessed on 4 October 2021).
6. Brando, P.M. et.al. (10 January 2020): The gathering firestorm in southern Amazonia, 6(2). URL: <https://www.science.org/doi/10.1126/sciadv.aay1632> (Accessed on 4 October 2021).
7. IPCC (August 2021): Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, [Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. Cambridge University Press. In Press.
8. Ibid.
9. Climatealliance.org (2020): Forest Fires in Amazonia. URL: <https://www.climatealliance.org/indigenous-partners/forest-fires-in-amazonia.html> (Accessed on 4 October 2021).
10. Climatealliance.org (2021): Indigenous territories – where the rainforest is best protected. URL: <https://www.climatealliance.org/about-us/climate-action/examples/indigenous-territories.html> (Accessed on 4 October 2021).

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Luxembourg | September 2021*