

# THE TIME IS NOW

## PRESERVING THE ECOSYSTEMS, FISHERIES, AND CULTURAL HERITAGE OF THE AMAZONIAN RIVERS

The Amazon rainforest, including its river network, is rapidly approaching a critical point at which more than half of its ecosystems will be permanently and drastically altered.<sup>1</sup> Preventing or slowing this process requires action to preserve the rainforest and ecosystems that exist today, especially those that have been less altered by development.

The Tapajós and Negro rivers are among the more pristine river ecosystems—the Tapajós is one of the Amazon’s last major clearwater rivers not impeded by a hydroelectric dam along its main course.<sup>2</sup> Damming the Tapajós and other tributaries of the Amazon would further threaten these fragile ecosystems, as well as the health, economic welfare, and cultural heritage of rural and indigenous riverine communities.

### THE AMAZON RAINFOREST IS AN ESSENTIAL GLOBAL RESOURCE

The Amazon rainforest plays a key role in the global ecosystem. Its trees and vegetation comprise one of the world’s largest and most important resources for removing carbon dioxide from the air. Alterations to the Amazon’s ecosystems affect weather and climate around the world. If the Amazon rainforest crosses the tipping point due to changes to the ecosystems within it, it could release years’ worth of greenhouse gas emissions into the atmosphere, accelerating climate change.<sup>1</sup> Preserving the Amazonian ecosystems through evidence-based policy and development is a global concern and must be a global effort.

<sup>1</sup> Sarah Kaplan, “Satellite Images Show the Amazon Rainforest Is Hurling Toward a ‘Tipping Point,’” *The Washington Post*, March 7, 2022, <https://www.washingtonpost.com/climate-environment/2022/03/07/amazon-rainforest-tipping-point-climate/>.



## DAMS HARM RIVER ECOSYSTEMS

The environment, plants, and animals in a river basin have evolved over millennia as an interconnected system. Alterations to one stretch of a river, as with a hydroelectric dam, impact the ecosystem along the entire course of the river, affecting flooding cycles, the flow of nutrients and sediment, and the migration patterns of fish, turtles, and aquatic mammals. Many Amazonian fish rely on these flooding and migration patterns to reproduce. A dam would change the river's flow, causing declines in the abundance of fish.

Environmental impact assessments (EIAs) are required by the Brazilian government before approving any major construction, including hydroelectric dams. Yet researchers agree that the EIAs, generally carried out by developers, routinely fail to accurately assess environmental impacts.<sup>3</sup> In part, this failure is because EIAs are required for only a small area surrounding proposed construction sites. For hydroelectric dams, EIAs are not required to assess the full course of a river.

Research from around the world has shown for decades that river dams frequently alter fish populations, affecting both the quantity of fish and the composition of species. These effects are also found in Brazil where, for example, the dams on the Tocantins and Madeira rivers have likely caused sharp declines in migratory fish species downriver.<sup>4</sup> Such changes have cascading effects on small-scale fisheries, impacting the health and well-being of riverine communities.<sup>5</sup>

## DAMS THREATEN THE WELL-BEING OF INDIGENOUS PEOPLE AND LOCAL COMMUNITIES

Throughout the lower Amazon region, fish commonly provide up to 75% of the animal protein in people's diets.<sup>6</sup> The same is also true in the Indigenous people and local communities (IPLC) of the Tapajós and Negro rivers, who rely on fish for economic livelihood and as an important food source.<sup>7</sup> The small-scale fisheries in these local and remote communities support food security and well-being while producing less waste than large-scale commercial fisheries in Brazil.<sup>8</sup>

More than half of the primary fish caught along the Tapajós River include species that depend on the river's flood cycles or migrate along its course.<sup>9</sup> Damming these free-flowing rivers would affect the fish population throughout each river's course, threatening food security for communities along the river. Simultaneously, fishers who rely on their daily catch for income could be forced to turn to other economic activities, such as agriculture or mining, which can increase deforestation and further destabilize ecosystems throughout the Amazon rainforest.<sup>10</sup>

## DAMS ENDANGER THE CULTURAL HERITAGE OF BRAZILIAN RIVERINE COMMUNITIES

The riverine IPLC of the Amazon carry the cultural heritage of thousands of years of living near and relying on the river networks, including traditional fishing techniques, locally based management rules, detailed knowledge of fish ecology, and strategies to guarantee fishing yields year-round. Along with harming a vital source of food and economic activity, decreases in the fish population and changes to the river's flow would spur a loss of cultural heritage, a change in identity, and an increase in stress for riverine communities.<sup>11</sup>

# GLOBAL AND NATIONAL PARTNERS MUST ACT TO PRESERVE AMAZONIAN RIVERS

Many rivers throughout the Amazon River Basin have already been severely impacted by hydroelectric dams. As EIAs fail to assess entire rivers and their ecosystems, the costs and consequences of these dams are inherently underestimated. The window of opportunity to preserve the remaining free-flowing rivers, and all that they sustain, is right now.



## PRESERVING THE TAPAJÓS RIVER

The Tapajós River is one of the last free-flowing clearwater rivers in the Amazon River basin. Several segments of the lower Tapajós are already protected areas that restrict activities on the land and river. These protections are helping to sustain local fisheries by reducing fishing pressure.<sup>1</sup> Damming the Tapajós will not only negatively impact its ecosystem and the rural IPLC who live nearby, but may hasten progress toward a tipping point for the Amazon rainforest, leading to irreversible ecological change on a global scale.

<sup>1</sup> Friedrich Wolfgang Keppeler, Gustavo Hallwass, and Renato Silvano, "Influence of Protected Areas on Fish Assemblages and Fisheries in a Large Tropical River," *Oryx* 51, no. 2 (2017): 268-79, <https://doi.org/10.1017/S0030605316000247>.



**Multilateral and global organizations** active in Brazil must exert greater pressure on the Brazilian government to fully assess and account for the environmental impacts of infrastructure projects in the Amazon rainforest, including mining and hydropower development.

**Donors and international nongovernmental organizations (NGOs)** can act to protect more areas, including the Tapajós and Negro rivers and other tributaries of the Amazon, to safeguard the global good that is the Amazon rainforest and the planet's ecosystems and climate patterns.

**Brazilian NGOs and government agencies** can proactively partner with IPLC to preserve Amazonian ecosystems. The cultural heritage of these communities includes local ecological knowledge that can guide policies to protect the environment and promote sustainable small-scale fisheries.

**The Brazilian Ministry of the Environment** should adopt approaches that:

- Evaluate the impact of each dam on the entire river, the cumulative impacts of each proposed new dam, and the combined impacts of other factors, such as deforestation and mining.
- Compare the costs and benefits of hydropower with other clean energy sources, such as wind and solar power.

Through collective action and partnership, decision-makers can preserve and protect the Amazon rainforest, safeguarding the health and livelihood of local communities and mitigating the negative impacts of climate change worldwide.

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