The Global Importance of Amazon Freshwaters

Amazon freshwaters are incredibly diverse and dynamic, consisting of rivers, floodplain wetlands, lakes, groundwater, glaciers, and atmospheric moisture. The Amazon's distinct freshwater rhythms give life to an integrated socio-ecological system that spans from the high Andes mountains, to lowland Amazon rainforest, to the Atlantic estuary. The importance of Amazon freshwaters also goes beyond the basin's boundaries and extends to the entire world. This singular nature of Amazon freshwaters is showcased by three core aspects.

By WCS FIU Florida International University Mississippi State University Amazon Waters Citizen Science
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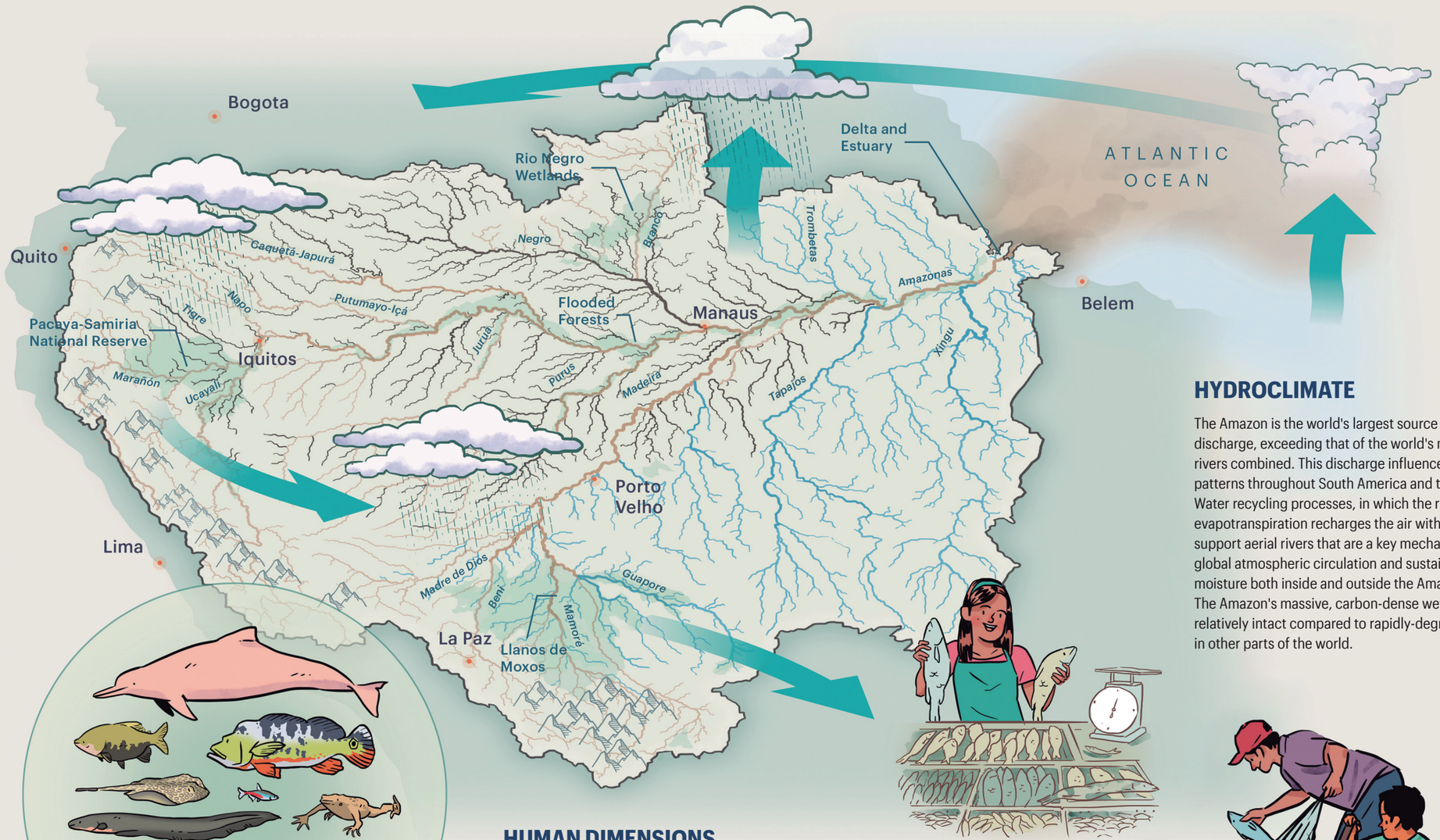
KEY

- Whitewater river
- Clearwater river
- Blackwater river
- Wetlands
- Andes mountains
- Urban Areas



BIODIVERSITY

The Amazon is the world's largest and most biodiverse river basin. The Amazon hosts over 3,000 freshwater fish species, surpassing the fish diversity of the Congo and Mekong basins combined. Amazon fish species have various forms and functions, with many being migratory fish that connect distant Amazon ecosystems and sustain floodplain forests through seed dispersal and support people with food.

HYDROCLIMATE

The Amazon is the world's largest source of freshwater discharge, exceeding that of the world's next seven largest rivers combined. This discharge influences climate patterns throughout South America and the world. Water recycling processes, in which the rainforest evapotranspiration recharges the air with moisture, support aerial rivers that are a key mechanism of the global atmospheric circulation and sustain rainfall and moisture both inside and outside the Amazon Basin. The Amazon's massive, carbon-dense wetlands remain relatively intact compared to rapidly-degrading wetlands in other parts of the world.

HUMAN DIMENSIONS

Approximately 47 million people live in the Amazon today*. However, human groups have inhabited the basin and co-evolved with its freshwater systems for at least 12,000 years, shaping the rich biocultural heritage present across the region, including diverse knowledge systems, languages, and livelihood practices such as fishing and agriculture. Indigenous and local knowledge systems (ILK) of Amazon freshwaters are critical to sustaining freshwater systems, forests, biodiversity, and local livelihoods. Improved transboundary governance and integration of ILK into conservation may enhance sustainability of human livelihoods and biodiversity from local to global scales.



* RAISG - Amazonian Network of Georeferenced Socio-environmental Information, 2020. Amazonia Under Pressure.
Technical Report. RAISG: São Paulo and Belém, Brazil; Lima, Perú; Santa Cruz de la Sierra, Bolivia; Bogotá, Colombia; Quito, Ecuador; Caracas, Venezuela

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