

SOUTHCOM, March-May 2024: Equator Divides Extreme Wet and Dry Conditions

While typical hot, dry El Niño conditions persist south of the equator, extreme precipitation forecast for north of the equator is atypical for a waning standard El Niño. For more on heavy rain, see page #2.

Farmers will continue to struggle with food insecurity as drought conditions persist in much of Peru.

Enduring drought in Bolivia may exacerbate ongoing political tension between rural Evo Morales supporters who are more heavily impacted by the drought and the more urban Arce government.

Below-average rainfall may negatively impact hydropower production in Brazil and Chile. While Chile's reservoirs are near normal, two thirds of Brazil's are below seasonal average (2000-2020). See graph below.

High temperatures and low rain may intensify fire conditions across the central Brazilian savannah and extend fire conditions from southern to northern Chile.

Brazil's Rio Grande do Sul's recent heavy rain is projected to continue through May, increasing cumulative damage to infrastructure and diminishing agricultural yield during the sensitive harvest season. The state is Brazil's largest producer of rice and second largest producer of soy, which are harvested from March through May.



Diseases like cholera, malaria, and dengue will increase because of heavy rains.

Mar-May 2024 Average Monthly Precipitation Anomaly Forecast:



Anti-government protests in Haiti and ongoing disputes with Dominican Republic over the shared Massacre River could impede humanitarian aid required if projected heavy rains cause flash floods.

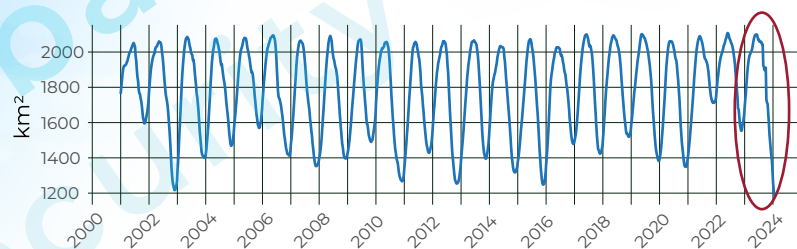
Daily transits through the Panama Canal will likely increase from 24 to 36 in May as rain reduces drought. Stringent water management practices are still required to prevent future issues.

Heavy rain may complicate Venezuelan troop movements along the heavily forested Guyana border.

Historically Low Tucuruí Hydropower Reservoir:

Hydropower makes up ~60% of electricity in Brazil. The Tucuruí Dam is Brazil's second largest hydropower project and makes up ~8% of the country's total installed hydropower capacity. Its reservoir is currently at its lowest point since 2003. Low power potential from this dam may increase reliance on fossil fuel plants and cause energy price fluctuations.

Reservoir Surface Area



SOUTHCOM, May 2024: Historically Heavy Rain Will Cause Destruction

Though months of heavier-than-normal rainfall will ease drought in Panama, Colombia, and Venezuela, rain will vastly increase the risk of damaging flash floods and landslides, particularly in recent forest fire burn scars.



This El Niño has been classified as a Modoki variation, which was last seen in 2009/2010. This variation **brings heavy rain across Central America, the Caribbean, and northern South American countries** and the potential for a rapid transition to La Niña.



Precipitation forecast for May resembles heavy rain in May 2010, which **affected hundreds of thousands** and led to **widespread damage** across Central America and Colombia.



Colombia, the region's largest rice producer, saw **significant drops in yield as rain damaged fields during harvest season** in May 2010. This contributed to staple crop price increases and food security issues across Central America. Similar damage is likely this harvest season.

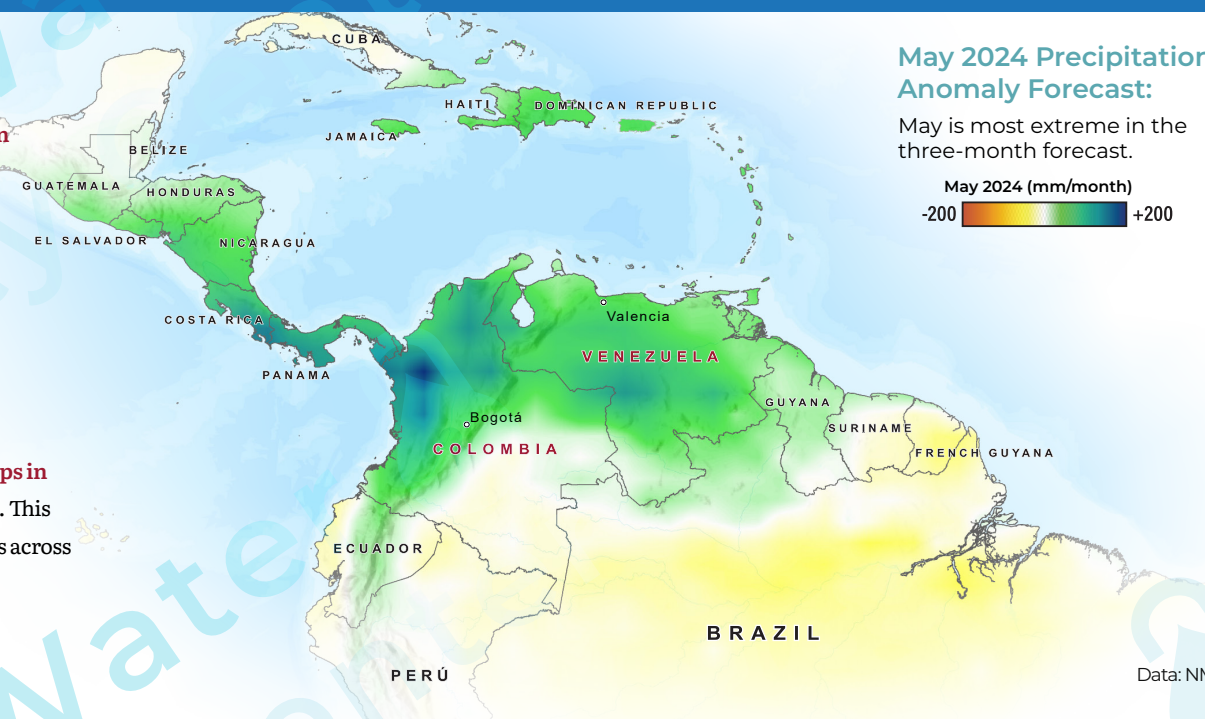


Heavy rain will cool fire hotspots in Colombia and Venezuela but **vastly increase the chance of deadly debris flows in burn scars**. Bogotá, Colombia, and Valencia, Venezuela, which experienced recent wildfires, are at particularly high risk.

Outlook Beyond May

Every forecast model shows extreme precipitation in May. Though later months come with lower confidence, those same models show wetter-than-normal conditions for Central America through October. Precipitation forecast conditions resemble 2010 in Colombia, the nation's wettest year on record and the worst disaster in its history.

Saturated soils will reduce resilience to strong storms. Landslide risk will only increase when hurricane season and rainy season peak August through October. Early hurricane forecasts project an active season.



May 2024 Precipitation Anomaly Forecast:

May is most extreme in the three-month forecast.



Data: NMME

Cascading Disaster: Rain after fires can lead to debris flow

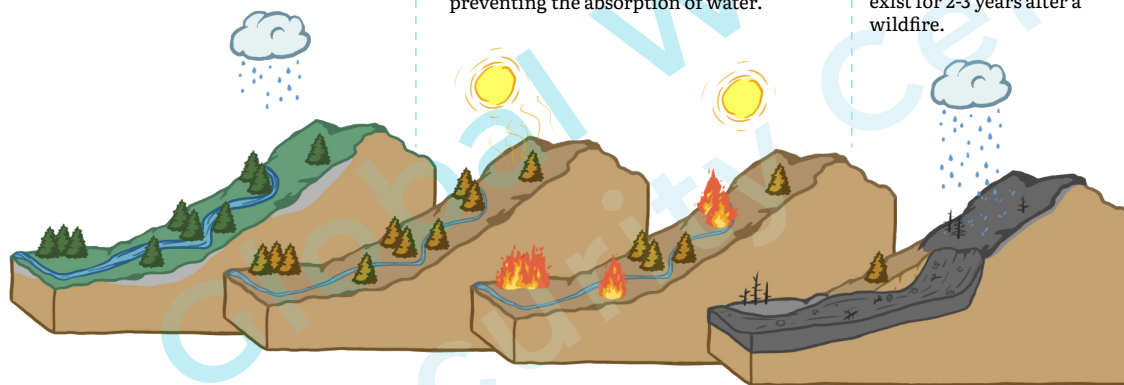
During normal conditions, vegetation helps absorb rainfall.

Drought and dry, hot weather conditions dry vegetation that can lead to wildfires.

The fires create a water repellent layer preventing the absorption of water.

Burn scars can be as water repellent as pavement, leading to potentially deadly debris flows.

The potential for flash flooding, mudslides, and debris flows can exist for 2-3 years after a wildfire.



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