

# Planned dams in Amazon may have largely negative ecosystem impact

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The Andean Amazon is becoming a major frontier for new hydroelectric dams, but an analysis of the potential impacts of these planned projects suggests that there may be serious ecological concerns to take into account. The full report is published Apr. 18 in the open access journal *PloS ONE*.

The study, led by Matt Finer of the Center for International Environmental Law in Washington, D.C., analyzes the full portfolio of 150 planned dams across all six major [river basins](#) connecting the Andes to the Amazon, a geographic scope spanning Bolivia, Brazil, Colombia, Ecuador, and Peru.

These projects represent a potential 300% increase over the number of existing dams in the region. Over half would be [large dams](#) over 100 megawatts, and 40% are already in advanced planning stages.

Most notably, 60% of the dams would cause the first major break in river connectivity between protected Andean headwaters and the lowland Amazon, threatening the current free-flowing nature of many Andean-Amazon rivers.

"These results are quite troubling given the critical link between the [Andes Mountains](#) and the Amazonian floodplain," Finer said. "There appears to be no strategic planning regarding possible consequences to the disruption of an ecological connection that has existed for millions of years."

The Andes supply the vast majority of the sediment, nutrients, and organic matter to the Amazon floodplain, one of the most productive ecosystems on Earth. In addition, many important Amazonian [fish species](#) spawn only in Andean-fed rivers, including a number of long-distance migrants that must travel from the lowlands to the foothills.

The authors also found that more than 80% of proposed dams would contribute to [forest loss](#) due to new roads, transmission lines, or inundation. Including the potential new road and transmission line infrastructure needed for dams provides a much broader assessment of the full ecological impacts of proposed dams and their secondary effects.

In combining the river connectivity and infrastructure analysis, the authors produced an overall ecological impact score for each proposed dam. Nearly half were classified as high impact, while just 19% as low impact.

"We conclude that there is an urgent need for strategic basin scale evaluation of new dams and a plan to maintain Andes-Amazon connectivity," said study co-author Dr. Clinton Jenkins of North Carolina State University. "We also call for a reconsideration of the notion that hydropower is a widespread low-impact energy source in the Neotropics."

**More information:** Finer M, Jenkins CN (2012) Proliferation of Hydroelectric Dams in the Andean Amazon and Implications for Andes-Amazon Connectivity. *PLoS ONE* 7(4): e35126.

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