

New research shows Western Amazon under threat from oil pollution

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Solimões, the section of the upper Amazon River. Image: Wikipedia.

A new study of pollution records indicates that the Western Amazon, an area of unparalleled biological and cultural diversity, may have been contaminated by widespread oil pollution over a 30-year period. This work will be presented at the Goldschmidt conference in Sacramento, California

Most of the world's [tropical rainforests](#) contain oil and [gas reserves](#). Oil production started in the Western Amazon in the 1920s and peaked in the 1970s, but current growing [global demand](#) is stimulating a renewed growth in oil and [gas extraction](#). Nearly 70% of the Peruvian Amazon was tapped for oil and between 1970 and 2009.

Now for the first time, a group of Spanish researchers have compiled a

database of chemical analyses taken from the western Amazon area, over the 1983 to 2013 period. These analyses come from a variety of sources, including Peruvian public agencies and oil companies. Though the results need to be reinforced by further study, they raise some significant concerns.

Researcher Raúl Yusta Garcia described the findings:

"We looked at measurement in 18 wastewater dumping sites from 10 different Amazon tributaries. We were able to pull together records over a 30 year period, from 1983 to 2013, allowing us to measure variations in 9 different pollutants, such as lead, mercury and cadmium. We found that 68% of the samples were above the current* permitted Peruvian limits for lead concentrations, and 20% of the samples above permitted cadmium levels.

We were also able to compare pollution upstream and downstream of some of the dumping sites. With some samples, we found chlorine levels averaged 11 times higher downstream of the wastewater dumping site than it had been upstream. Pollution from oil extraction declined from around 2008, but the danger is that increased demand causes increased pollution".

Lead researcher Antoni Rosell-Mele added

"There are no published studies to date that report the pollution impact of oil extraction activities in remote pristine rainforests. Our results show that contamination is widespread in these [areas](#). This increase in pollutant levels is not just due to oil spills, but to the drilling and extraction process. These processes have not been effectively monitored in remote areas until now. Some of this pollution may feed its way into the human food chain and certain of the areas affected by oil spills on land are feeding grounds for large wildlife, including endangered

species".

The Amazon River has its ultimate source in the 5597m Nevado Mismi peak in the Peruvian Andes. From there it flows down into Peru's Loreto and Datem del Marañón provinces, which is where these samples were taken. The Western Amazon has large reserves of hydrocarbons in rainforests that host unparalleled biological and [cultural diversity](#).

More information: Note: *Many of these samples may have been within the legal limits when originally taken, however limits have changed over time. The 68% and 20% figures refer to current standards.

The Goldschmidt Conference is the world's leading annual conference on geochemistry. It takes place in Sacramento, California from 8-13 June 2014. goldschmidt.info/2014/.

Provided by European Association of Geochemistry

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