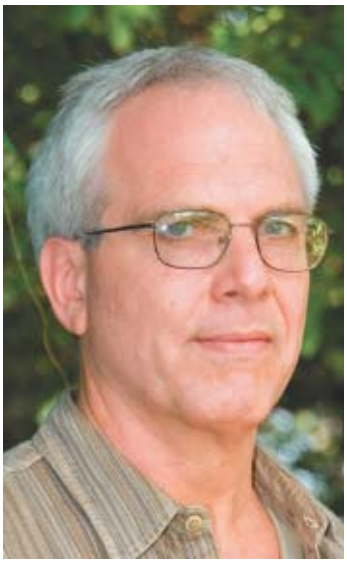
Q&A:

Expert says more ill-conceived infrastructure threatens Amazon

Tropical ecologist William Laurance, Distinguished Research Professor at James Cook University in Cairns, Australia, has been watching roads grow and multiply in the Amazon region for decades. His studies show that as roads drive deeper into intact forest, increased habitat fragmentation takes a toll on biodiversity, more forest edges mean more drying and damage from fire, and more animals meet their deaths on rural highways. The threat is global: An estimated 70% of the world's forests are now within 1 kilometer (0.6 miles) of a road–and road networks continue to expand, especially in developing countries. As director of Alert, an environmental research and advocacy group, Laurance has turned his attention to deforestation in places like Malaysia and Indonesia, and to the impact of Chinese development projects around the world. But he still keeps an eye on the Amazon, where he is concerned about continued road and dam construction, and about a Chinese proposal for a cross-continental railroad. He spoke by phone with EcoAméricas correspondent Barbara Fraser.



William Laurance

What threats do you see in the Amazon?

The biggest immediate threat I see to the Amazon is BR 319, a [Brazilian] highway that will go from Porto Velho to Manaus. It's going to chop the Amazon in half [with] a north-south cut all the way through the Amazon. [From] Manaus, you have BR 174, which goes north, and BR 319, which goes all the way south. They've put a big bridge over the river where the Rio Negro and the Solimões meet, so you can literally drive from Brasília all the way through the Amazon. It will be a magnet for colonization of large areas of the Amazon. That's going to be a disaster. Some of the land [along the route] will be protected, but it will be the classic opening up the frontier to squatting, legal colonization and land speculation. It will be the gamut—illegal gold mining, illegal logging, land settlement, poaching. Typically, the first road goes in, then the spider web of secondary and tertiary roads branching off of that, and then a much larger-scale footprint of deforestation. Deforestation behaves very much like cancer. It seeds, then it metastasizes, especially as you get additional roads coming along. And it spreads in a spatially contagious way, just as tumors would.

Are there proven ways to curb it?

There are not a lot of easy ways to mitigate that. Probably the best thing they can do is to try to put in protected areas, [although] even in protected areas, you get more fires and colonization activity. Indigenous lands sometimes [provide greater protection]. Certain groups, like the Kayapo, are reasonably effective at repelling illegal miners and loggers.

And development in tropical parts of Colombia, Peru and Bolivia?

It's incredibly dangerous. Infrastructure is the backbone of a lot of these projects. A common link among them [is that] there's a lot of Chinese investment in infrastructure and extractive industries. That's probably been the biggest trend. [Even] if [Chinese companies] are not directly involved, in many cases the minerals or timber or whatever they're producing would be feeding Chinese industries or markets. China was the main force behind the Interoceanic Highway [through the Brazilian and Peruvian Amazon]. I see China's fingerprints or footprints all over this.

Can the impact of dams in the Amazon be reduced?

Classically, you'd like to put a dam into a steep gorge where you wouldn't have an enormous footprint from the dam flooding. But that doesn't [eliminate] the issue of construction of roads and power-line roads—the transportation infrastructure that goes into building and maintaining the dam. Nobody has figured out a way to build a dam by "offshore" methods, so they put in roads, power lines and things like that. The other thing with dams, especially in the tropics, is methane emissions. [There is a] big flux in [water] levels between the wet season and the dry season. Not only do you have that huge biomass that gets flooded initially, but when water levels drop in the dry season, you tend to get rapid growth of pioneer vegetation along the edges of the [reservoir]. That re-floods in the wet season, and [produces more] methane. If you look at the methane emissions, [hydroelectric dams] are not green at all.

Would it be better to place dams higher up in the Andes?

There are enormous sediment [flows] and fluvial dynamics around [those] rivers. The reason they're so dynamic, with the rivers changing course all the time, is that they're so heavily loaded with sediments. The classic problem with dams is they tend to fill up with sediments. That limits their lifespan. But in systems [with] really steep slopes, geologically new areas, as you have in the Andes, with huge sediment flows, [dams will] affect flows of nutrient-bearing sediments, [and] migratory fish.

Are environmental impact assessments [EIAs] sufficient?

Strategic EIAs [which consider impacts over a wider area] would be a substantial advantage over a classical EIA, which is usually quick and dirty, especially in many developing nations. You need strategic land-use planning, [which] lets you look at how infrastructure is going to develop across a whole region.

What would positive development look like?

There's great scope for increasing investments in transportation infrastructure... If you can improve [farmers'] connectivity with cities, then you can feed these urban markets. So food is cheaper in the cities, farmers get the best prices for their crops, and that tends to attract more rural investment. Land prices tend to increase, which makes it more advantageous to invest in better farming technology, so productivity increases. You then tend to get more rural services, education and medical services in these areas. [My colleagues and I] argue for focusing on improving or building new roads in peri-urban areas and areas outside them, because we're seeing such dramatic growth of cities. There's enormous scope for feeding this [urban] populace and enormous profits to be made. So why are we punching roads into really remote areas? In a lot of cases, the arguments behind them, if you look, are crazy. A lot of extremely expensive, high-maintenance roads are going into places where there is really not a good cost-benefit rationale.