Amazon Gold Rush Continues to Decimate Peru's Rain Forest

Despite government efforts, mining has expanded into protected areas

By Emiliano Rodríguez Mega on November 17, 2017

In July 2015 Peru eliminated dozens of camps for illegal gold mining in La Pampa, within the Madre de Dios region, where hundreds of thousands of acres of rain forest have been destroyed. *Credit: Sebastian Castaneda Getty Images*

For decades gold miners have pillaged the lush Peruvian Amazon forest of Madre de Dios in search of the precious metal. Now a study reports that illicit mining is sharply on the rise despite local government efforts to curb it—and this is taking a heavy toll on the ecosystem.

In 2012 the Peruvian government announced a slew of legal decrees to defend Madre de Dios—considered the country's biodiversity capital—against miners. Authorities conducted raids, dismantled clandestine camps, and regulated fuel and supply traffic. Despite the crackdown, the total mining area had increased by about 40 percent (to around 170,000 acres) just four years later. According to the most comprehensive analysis to date, the practice—possibly enabled by poor control of the region and greater highway access—extended into at least one of the forest's two national reserves, protected areas where mining is prohibited.

Extracting gold from rock can contaminate the environment. Illegal mining activities often use liquid mercury, a toxic chemical that can drip into the soil or be burned off and released as toxic fumes. And the consequences of illicit mining go well beyond those of the extraction process. Miners often chop down thousands of acres of forest with heavy machinery that scars the landscape.

"You can see those dredging machines sucking silt from the river, hear their engines," says Raul Tupayachi, a Peruvian biologist at the Carnegie Institution for Science and a co-author of the study. "We hoped our data would show a drop in deforestation rates after the government actions tried to [curb mining] activities," he says. "But we saw that, in the long run, they haven't really made much of an impact."

The study, which analyzed satellite images taken between 1999 and 2016 and was published in August in Environmental Research Letters, found an initial decline in deforestation after the government's action in 2012. By 2013, however, forest loss rates had ballooned. New mines started to appear in the following years. They invaded protected areas such as the Tambopata National Reserve—home to the indigenous Ese Ejja, Quechua and Aymara peoples, as well as brightly colored macaws, giant river otters and jaguars. By 2016 mining operations had felled at least 1,287 acres of forest within the reserve.

William Llactayo, a geographical engineer at Peru's Ministry of Environment, who did not take part in the work, says the study comes at a critical time. If the mining trend continues, Llactayo says, "a lot of these areas will be [irreversibly] degraded in the years to come."

A New Threat to the Amazon: Gold

Gold-hungry prospectors are tearing down the Amazon in Peru

By Tiffany Stecker, ClimateWire on April 20, 20111
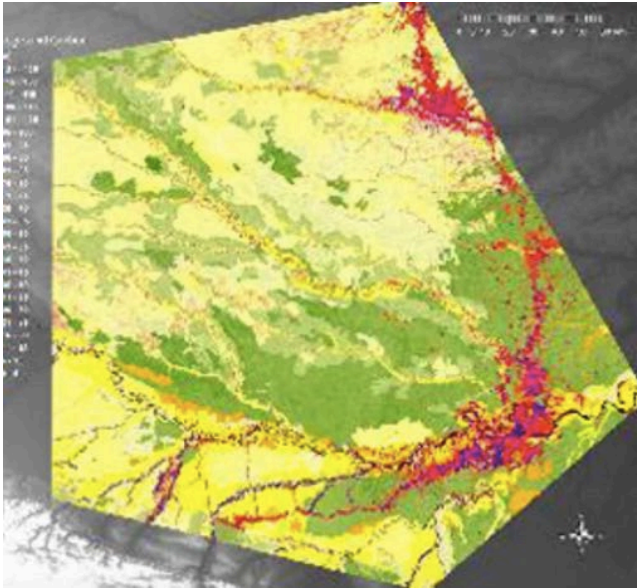
Credit: Carnegie Airborne Observatory

Gold-hungry Peruvian miners are eroding the country's portion of the Amazon rainforest at an alarming rate, according to a new study.

Small-scale gold panners in the Andean nation have responded to soaring gold prices by revving up the pace of gold mining, stripping the region of its forests. Since 2003, deforestation linked to gold mining in Madre de Dios, Peru, has increased sixfold in conjunction with the annual increase in gold prices -- far outpacing the deforestation due to human settlement and development in the surrounding areas.

Jennifer Swenson, assistant professor of the practice of geospatial analysis at Duke University and lead author of the report, said that placer mining -- a method of open-pit mining -- is clearing vast swaths of forests, with little chance of regeneration. About 15,200 acres of forest and wetlands was cleared at two mining sites in the region between 2003 and 2009.

"Things are not growing and probably won't be growing," said Swenson. "It probably will stay bare like this for years to come."

The fact that gold panning is eroding the natural landscape is not a secret. For years, both the Peruvian national media and the international press have covered the devastation, mostly fueled on a small, illegal scale. This study, said Swenson, is the first to directly link the price of gold and amount of imported mercury to the destruction.

With the weakening of the U.S. dollar in past years, gold has been touted as a less volatile investment. Since the conclusion of the study, its value has yet to subside. Yesterday, the price of gold topped $1,500 per ounce for the first time in history.

More mercury contamination comes with the higher price

In her calculations, Swenson tied the price of gold to imports of mercury, which is used in primitive jungle mining operations to collect and refine the gold. Increasing imports of the element, easily accessible to poor Peruvian miners, led to contamination of water supplies and adversely affected air quality.

Globally, small-scale artisanal gold mining is responsible for about one-third of the mercury released into the environment, where it bioaccumulates, collecting in the tissues of fish and predatory animals. Mercury, a poison, can damage the human nervous system when ingested. Swenson estimates that mercury imports will more than double by the end of the year.

Using satellite imagery from NASA's Landsat 5 Thematic Mapper satellite, Swenson and her co-researchers mapped deforestation due to mining. The distinct color from placer mines on the images allowed Swenson to differentiate mining areas from settlement deforestation. Swenson then analyzed the images with the annual increase in gold prices -- averaged at 18 percent annually -- and mercury imports.

The Interoceanic Highway, a massive infrastructure project that, when completed, will stretch across the continent through Brazil, has made travel to the gold mines easier.

The Peruvian section of the Amazon is one of the largest remaining forest fragments in the Amazon Basin. On the ground, the rate of deforestation is apparent, but official government figures are scarce, said Vince McElhinny, program director for Building Informed Civic Engagement for Conservation in the Andes-Amazon (BICECA), an initiative under the Bank Information Center to promote conservation in the Andean Amazon.

"Official figures for deforestation in that area are low," said Vince McElhinny, program director for BICECA, an initiative under the Bank Information Center to promote conservation in the Andean Amazon. But "you can track the activity indirectly in a number of ways; people know how much activity is going on."

Intent on slowing the environmental degradation in the region, the Peruvian government launched a campaign to curb illegal gold mining. Last month, security forces decided to stop the campaign, as violent protests resulted in the deaths of at least two miners, according to media sources.

Gold for politicians, too

Economic interests tied to mining are also entrenched in the political culture.

"Mining controls at least 50 percent of the regional government,"said McElhinny. "It's extremely difficult to do anything that doesn't touch any political figure."

And for the miners themselves, they are simply defending their livelihood in a region where the payback for illegal activity is high and income alternatives are almost nonexistent. Swenson is skeptical of the possibility of mining on a sustainable scale.

"I can't really imagine it," she said. "There are so many miners and not many economic alternatives."

"Perhaps the mining will decrease once they get out to easier deposits, once they've mined out easily accessible areas," she added. "I don't see that happening in the near future."

When discussing with colleagues in other development and conservation organizations, said McElhinny, "they admit half-jokingly that they should be out there panning for gold, as well."