

Christianity influencing biodiversity in the Amazon, scientists find

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Two Wapichan women maintaining traditional rock carvings at a spiritual site.
Credit: Jose Fragoso

(Phys.org)—Religious missionaries have been transforming the belief systems of indigenous peoples deep within the Amazon since the 1700s, but the outsiders might be influencing more than just prayer. Research

by Stanford biologists suggests that the introduction of Western religions is altering the biodiversity in the region.

In some cases, tribal members acting on newly adopted religious beliefs may benefit [animal populations](#) in ways similar to [conservation efforts](#). Other introduced behaviors, however, might be endangering [animals](#) once protected by indigenous practices.

The finding comes from Jose Fragoso, a scientist at Stanford, and Jeffrey Luzar, a post-doctoral collaborator in Fragoso's group. The pair has conducted several years of ecological and anthropological research of the Makushi and Wapishana tribes in the Guyanese [Amazon](#).

The researchers asked nearly 9,900 individuals ascribing to one of the three major religious influences in the area – evangelical, Sabbatarian and Roman Catholic/Anglican forms of Christianity – which animals they avoided eating, and compared the responses to the recommendations made by indigenous shamans.

For example, the Makushi and Wapishana believe that eating lowland tapir can make them sick because of potentially dangerous spiritual aspects associated with the animal and its meat. Yet, many people who follow these beliefs continue to eat tapir because they trust their shaman's ability to cure the illness.

However, the researchers found that people who converted to one of the Sabbatarian faiths – those that strictly observe the Christian Sabbath, such as Seventh-Day Adventists – that reject shamanism were less likely to eat tapir compared to those people who follow indigenous beliefs.

This change came because Sabbatarian missionaries introduced new taboos concerning pigs and their relatives. Based on the traditions of the [Hebrew Bible](#), the people consider tapirs, along with some other native

animals, such as peccaries, to fall under classes of animals prohibited for consumption.

And while the Anglican and Catholic churches place no restrictions on eating tapir and the converted people are generally free to visit shamans openly, the researchers found that many people were still more wary of killing traditionally tabooed species. This was true even in Evangelical and Sabbatarian communities where the shaman had been abolished.

"You can eliminate the shamans, but the spiritual belief system continues on for many generations," Fragoso said.

Ultimately, reluctance to eat commonly tabooed species such as tapir might serve as a resource management tool analogous to hunting bans, the scientists write in the paper, and could be beneficial for tapir numbers, as these endangered animals have low reproduction rates. Other species that have ties to shamanistic taboos – such as capybara, red-footed tortoises and two species of deer – are also subjected to fewer reported killings in converted communities.

This does not necessarily mean, however, that all animals thrive in converted communities. Shamans are also traditionally responsible for guarding special spiritual areas, large sections of off-limits land associated with powerful, and often dangerous, spiritual entities. With the dissolution of shamanism, particularly in the evangelical and Sabbatarian groups, some people now hunt in these areas.

When protected by shamans and the cautionary warnings they provide to hunters, these areas provide a safe space for many animals to mate, give birth and raise young. Hunting these animals could have negative effects on biodiversity throughout the region.

"Based on field observations, I think that the removal of shamans has

translated into more killing of animals," Fragoso said. "Our perception is that they are killing more animals that are not taboo, such as pigs, and also that they are making kills in the holy areas, which were previously off-limits."

Fragoso and his colleagues will soon return to the Amazon to catalog kills to determine whether certain animals are being killed in greater numbers in the converted communities, and also whether there has been any response bias in surveyed groups.

Provided by Stanford University

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