Researchers question evaluation methods for protected areas in the Amazon

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

(Phys.org) —The indicators currently being used to guide policy and investments into protected areas in the Amazon may not be having the desired effect.

This is according to a new study published today in IOP Publishing's journal *Environmental Research Letters*, which has analysed 66 protected areas in the Brazilian Amazon and performed a critical analysis of the tool – the Rapid Assessment and Prioritisation of Protected Area Management (RAPPAM) – that is used to manage, prioritise and assess the effectiveness of conservation efforts in these areas.

The researchers, from the Amazon Institute of People and the Environment (IMAZON) and the University of Michigan, found no

strong associations between the successful avoidance of deforestation and RAPPAM scores that indicate an increased conservation effort, such as budget, staff, equipment and management plans.

"There are two possible explanations for our results: either the RAPPAM does not measure things correctly and the scores do not adequately reflect the status of these management aspects or the RAPPAM is measuring things that are not important for successfully conserving protected areas," said co-author of the study Christoph Nolte.

The RAPPAM, developed by the World Wide Fund for Nature (WWF), aims, among other things, to "help develop and prioritize appropriate policy interventions and follow-up steps to improve protected area management" and has been deployed in more than 2000 protected areas in more than 50 countries on five continents.

The RAPPAM issues questionnaires to managers of protected areas who are asked to rank 90 qualitative statements on a four-point scale based on how well the statement applies to their protected area site.

In their study, the researchers considered 152 protected areas in the Brazilian Amazon. For each protected area, they selected forest parcels outside the protected area that were similar to forest parcels inside the protected area and used satellite imagery to calculate the deforestation rate that was occurring on them.

They used this deforestation rate to estimate how much deforestation would have occurred in each protected area had it not been protected. Protected areas were then grouped according to the success rate of countering the deforestation pressure they faced. The RAPPAM scores for each group were then compared to each other.

The researchers did find one indicator from the RAPPAM that did have

a strong association with avoiding deforestation: the absence of land tenure conflicts. When there was no unsettled land tenure dispute, the success at avoiding deforestation was higher.

This suggests that land tenure conflicts may be such an important factor in shaping deforestation success that it overshadows the potential importance of other factors.

Furthermore, it highlights the need for the Brazilian government to rapidly solve conflicts in order to conserve protected areas.

"The government has to act promptly," said co-author of the study Paulo Barreto from IMAZON. "They must evict illegal occupants, compensate any occupants who have legal rights, and re-draw boundaries when occupants have inalienable land rights. If conflicts are not solved, new occupations may occur, which will significantly hinder the effort to protect the land."

More information: 'Setting priorities to avoid deforestation in Amazon protected areas: are we choosing the right indicators?' Christoph Nolte, Arun Agrawal and Paulo Barreto 2013 *Environ. Res. Lett.* 8 015039: iopscience.iop.org/1748-9326/8/1/015039/article.

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