

# World's protected areas not protecting biodiversity, researchers say

June 24 2014

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Habitat loss is a primary driver of biodiversity loss – so it isn't surprising that optimising the amount of protected land is high on policy-makers' priorities. However, according to research to be published in the Open Access journal *PLOS Biology* on June 24 by Oscar Venter and colleagues, many protected areas are established in locations of low economic value, failing to protect the imperilled biodiversity found on more valuable land. More of the earth's land surface is set to be protected in the next decade, but the trend of using poor quality land seems set to continue. How can we optimise the number of species protected in the most cost efficient way? Venter & colleagues believe they have discovered part of the answer.

In 2010 the Convention on Biological Diversity adopted a new set of goals for the next decade – the Aichi Targets. These include the ambitious Target 11; to expand the global protected area network from the current 13% of the earth's [land surface](#) (not including Antarctica) to 17%, and Target 12; to halt the extinction of species already threatened by 2020. It follows that protecting habitats should also protect [endangered species](#), so Target 11 and Target 12 should be interrelated. However, Venter and colleagues found that if the current methods of selecting new protected areas were continued (i.e. targeting land with little potential for agriculture) then achieving the 17% Aichi land preservation target would only protect a mere 249 more threatened vertebrate species than covered by current networks. This will do little to achieve Target 12.

"Our study shows that existing protected areas are performing very poorly in terms of protecting the world's most threatened species," said Dr. Oscar Venter, lead author of the study. "This is concerning, as [protected areas](#) are meant to act as strongholds for vulnerable species, which clearly they are not."

Venter & colleagues estimated that the total cost implication of protecting all 4,118 of the vertebrates they considered in their study would be \$43 billion in 'lost opportunity' costs (in terms of not using the land for agriculture) – around 750% more than carrying on with the current strategy. How then can we reconcile the low cost but low conservation benefit scenario we have currently with the exceedingly high economic costs to achieve Aichi Target 11's 17% land protection goals? Importantly, the study highlighted that small increments of higher lost-opportunity cost lead to proportionately larger increments of adequate protection of threatened species. For instance, achieving a 400% increase in the adequate protection of [threatened species](#) only costs 50% more, in terms of lost-opportunity cost, than the 'business as-usual' strategy.

There are caveats to the study; for example only mammals were considered and many species are threatened by processes other than [habitat loss](#). However, their results point to the possibility of a 'happy medium' where countries can gain significant biodiversity benefits with minimal lost-opportunity costs. They provide a piece of a better road map towards making these goals achievable - where other conservation targets have failed.

**More information:** Paper in *PLOS Biology*:  
[www.plosbiology.org/article/in ... journal.pbio.1001891](http://www.plosbiology.org/article/in...journal.pbio.1001891)

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Citation: World's protected areas not protecting biodiversity, researchers say (2014, June 24)  
retrieved 26 April 2024 from <https://phys.org/news/2014-06-aichi-biodiversity-areas.html>

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