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Nature Retention, Not Just Protection, Crucial to Maintaining Biodiversity and Ecosystems: Scientists

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Is it time to completely rethink how we design the goals of conservation programs? Some scientists say it is.

In a paper published last week in the journal Nature Ecology and Evolution, a team of Australian researchers argue that we need to shift conservation goals to focus on diverse and ambitious "nature retention targets" if we're to truly safeguard the environment, biodiversity, and humanity.

The researchers, who are affiliated with Australia's University of Queensland (UQ) and the Wildlife Conservation Society (WCS), make a distinction between targets aimed at retaining natural systems and the current model that seeks to achieve targets for setting aside land as protected areas.

Whereas targets aimed at retaining nature can be determined by measuring what is needed to achieve conservation goals like preserving water quality, carbon sequestration, or biodiversity levels, protected area targets are "blind to what is needed" and don't have a clear end goal, paper co-author **James Watson** of UQ and WCS told Mongabay.

For instance, Aichi Target 11, established by the Convention on Biological Diversity (CBD) in 2010, calls for at least 17 percent of terrestrial and inland water areas and 10 percent of coastal and marine areas around the world be gazetted as protected areas by 2020. But that may not be sufficient to guarantee the ecological functions humans and biodiversity require, according to Watson and his colleagues.

> "Right now, there is no clear endgame and we don't know what victory looks like on a map and who needs to do what," Watson said. "The targets set today are often incoherent and unmeasurable and don't speak to each other or a bigger plan. They also don't speak to other environmental agendas" such as halting global climate change or meeting the UN's Sustainable Development Goals (SDGs), he added.

Even if we were to fully meet the goals of Aichi Target 11, that still leaves 83 percent of Earth's land area and 90 percent of its oceans unprotected, the researchers note in the paper. In other words,

> "Most evolutionary processes, ecological functions and biota are, and probably will always be, beyond the boundaries of nationally gazetted protected areas," they write. "This means that most of the ecosystem services on which

> humanity relies will be provided predominantly by areas that are not officially protected. Achieving the objectives reflected in the other Aichi Targets, and the SDGs, depends heavily on what happens in that 83-90%."

Giraffe roaming the plains in a protected area in Ruaha, Tanzania. Photo Credit: The University of Queensland.

While strict protected areas that are off-limits to human activities are necessary, the researchers contend that they are not sufficient for ensuring a functioning planet in the future because they are not designed to protect all of the natural systems that sustain life on Earth.

> "Only a multi-faceted approach that includes protected areas, but does not exclusively rely on them, can achieve the many different goals of sustaining nature," they state in the paper.

The authors note that protected area networks are "rarely designed to maximize their contribution to the overall retention of nature." These networks usually aim to be "comprehensive, adequate and representative: in other words, to conserve examples of the full range of types of biota within a network that contains both strict protected areas and regions that are less focussed on conservation objectives (called 'other effective area-based conservation Measures '). Such networks cannot preserve all biodiversity, let alone provide the much broader range of benefits we want from nature."

Rather than simply setting a certain amount of the planet's land and seas aside, nature retention targets would establish the baseline levels of natural system functions that we need to preserve in order to ensure the health of ecosystems and the services they provide. The paper's lead author, UQ's **Martine Maron**, explains that nature retention targets are essentially "limits to what we are prepared to lose." Mankind relies on nature for many things that we require to survive, from a stable global climate to the provision of clean water and healthy soils for food production.

> “Yet the destruction of nature continues apace — and is often irreversible,” Maron told Mongabay. “It is incredibly irresponsible for this to continue with no end point in sight — we risk losing the nature we, and all other species, rely upon.”

Maron said that she and her co-authors believe that nature retention targets must be quantitative and determined on a state-by-state basis.

> “That is, rather than a target like ‘reduce the rate of loss,’ we need to say just how much nature — of different kinds, and in particular places — we must keep on the planet if we are to continue enjoying its benefits.”

The researchers set out three criteria for nature retention targets in the paper:

> “they relate to a quantified target state, not a target rate of change; they act as a framework designed to enable and support the achievement of multiple nature conservation goals; and, as a result, the headline target must be high.”

In designing retention targets to support the multiple goals of nature conservation and human well-being, they add,

> “a series of area-based, quality-specific sub-targets should be set to ensure adequate provision of key ecosystem services, such as carbon storage and watershed protection, as well as biodiversity conservation and wilderness protection.”

The researchers write that more ambitious and area-specific targets for preserving key ecosystems can help achieve multiple goals, such as biodiversity conservation, wilderness retention, carbon storage, water regulation, soil stabilisation, avoided desertification, and fisheries maintenance. These targets would, they say, benefit humanity as much as the environment and wildlife.

> “You can map what is needed and then add it up,” Watson said. “By doing this, you don’t have to worry about whether it is for people (or not). It’s for both! It makes the entire question of whether conservation is for nature or for people irrelevant.”

Even calls to protect half of the world’s natural systems, such as those made by the Half-Earth Initiative and Nature Needs Half, which are certainly ambitious proposals, may still fall short, the researchers say.

> “If by protecting half the Earth, we imply we can lose all nature from the other half, it may not be enough,” Maron said. “A much higher target for well-sited and well-managed protected areas is crucial for the protection of biodiversity and will help maintain the provision of many ecosystem services — but on its own, it may not be enough to provide all we need from nature.”

That doesn’t mean that Maron and team think more than half the Earth must fall within

traditional protected areas, but she said they do propose

> "that the areas we must protect to conserve the planet's biodiversity, the areas of crucial water catchments, carbon stores, irreplaceable wilderness areas, places for urban populations to interact with nature, and so on, are likely to add to even more than half the Earth."
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> "We need a big, bold plan. There is no doubt that when we add up the different environmental goals to halt biodiversity loss, stabilize run-away climate change and to ensure other critical ecosystems services such as pollination and clean water are maintained, we will need far more than 50 percent of the earth's natural systems to remain intact," Watson said in a statement. "And we must remember that most nations have committed to this in various environmental treaties. It is time for nations to embrace a diverse set of bold retention targets to limit the ongoing erosion of the nature humanity relies upon."

The researchers propose nature retention targets as a framework for the post-2020 strategy of the Convention on Biological Diversity.

> "As we approach the deadline for achieving the 20 Aichi Targets under the Strategic Plan for Biodiversity, the world is working toward a new set of targets," Maron told Mongabay. "A global approach is important because key ecosystem services are global in nature, and their preservation needs global coordination. But retention targets are sensible for any level of government to consider, across its jurisdiction, how to avoid losing too much nature and, where necessary, to restore in places that have already gone too far. Many places continue to see nature destroyed year on year with no end in sight — a completely unsustainable model."

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Source

Maron, M., Simmonds, J. S., & Watson, J. E. (2018). Bold nature retention targets are essential for the global environment agenda. Nature ecology & evolution, 1. doi:10.1038/s41559-018-0595-2
