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Is a single target the best way to cut biodiversity loss?

A proposal to limit species extinctions around the world to 'well below' 20 per year needs to be thoroughly assessed.

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Northern white rhinos have been driven to the brink of extinction.

Next year, all eyes will be on Kunming, China, as talks resume on a new set of global goals to protect biodiversity. These are much needed, because most of the existing 20 targets, which were set in 2010 in Aichi, Japan, have failed to make an impact on the rate of biodiversity loss.

Last month, a team of researchers proposed creating one headline number, suggesting that countries should aim to keep extinctions to "well below" 20 known species every year worldwide (M. D. A. Rounsevell *et al. Science* **368**, 1193–1195; 2020). This would be the biodiversity equivalent of the 2 °C climate target: a simple, measurable goal that can be understood by the public and politicians alike.

The proposal, by Mark Rounsevell at the Karlsruhe Institute of Technology in Germany and his colleagues, is intended to break nearly two decades of failure in global biodiversity policy and target setting – the 2010 Aichi targets replaced a previous unsuccessful target to slow the rate of biodiversity loss that countries set themselves in 2002. And the idea is gaining traction.

In an interview with *Nature*, Elizabeth Maruma Mrema, the new head of the United Nations Convention on Biodiversity, acknowledged that it would be difficult to set a single target because biodiversity is multifaceted. But, if the community succeeds in making it work, she adds: "that will be the best result possible because then it becomes a song everyone will sing, and that everybody can align with to deliver that one key message."

A target for limiting extinctions is not a new idea, and deserves serious consideration. Its feasibility and consequences should be rigorously assessed by the convention's own scientific advisory body, and by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), in the same way that climate metrics are assessed by the UN's climate-science advisers, including the Intergovernmental Panel on Climate Change (IPCC).

There are many questions for researchers working in biodiversity to explore. For example, how does a target of 20 extinctions per year – across all plants, animals and fungi – fit with IPBES's own assessment of biodiversity, which says that some one million species are at risk of extinction? Twenty extinctions per year – out of almost two million known species – is ten times higher than the background extinction rate of two per year that existed before humans made a notable contribution to extinctions. But it is considerably lower than today's estimates of species extinctions, which are in excess of 1,000 times the background rate.

> "The creation of one extinction target should not detract from the need to create nationally relevant targets and policies."

Other questions include how to choose which species to conserve, and who should make such choices. Would a single number give equal weight to all threatened species, or should those species that are more important to livelihoods and to ecosystem function be given priority for protection? As the authors point out, it is possible for biodiversity loss to result in large and damaging changes to life on Earth without any species going extinct. And at what point would an extinction be declared, given that there is often a time lag between a species going extinct and its being recorded as extinct in the Red List maintained by the International Union for Conservation of Nature?

Given that IPBES's lower estimate for as-yet unidentified plant and animal species is 8.1 million, what are the implications for species that have not yet been described? If policymakers focus resources on conserving known species, what risks might there be to species in parts of the world – such as the marine environment – where knowledge of biodiversity is weak, and which face continued unsustainable development?

And what would the implications of a single target be for the convention's other objectives? Conserving species is one of three aims, alongside ensuring that biodiversity is used sustainably and ensuring that benefits (such as commercial products) are shared fairly, so that no one – for example, Indigenous communities – is left out.

Biodiversity is essential to economic prosperity, food and human health, and the researchers are keen to stress that the creation of one extinction target should not detract from the need for governments to create nationally relevant targets and policies. They also advocate the provision of funding to help countries that are financially poor but biodiversity-rich to meet their goals.

Certainly, a single target, such as that for climate change, would be simpler to communicate than the Aichi targets. And the authors are right to acknowledge

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that, ultimately, biodiversity loss continues because public-policy decisions — for example, decisions that lead to industrial economic growth — have not accounted for the costs of replacing the services that species and ecosystems provide to humans.

But they will also know that, although the target to keep global temperatures to within 2 °C of pre-industrial levels was agreed by members of the UN climate convention, that number was subjected to a thorough process of research evaluation by a wide group of researchers in the IPCC before it was adopted.

Any proposal to consider a single numerical target for biodiversity needs to be similarly assessed. IPBES — working with the UN biodiversity convention's own scientific advisers — should be called on to advise. For this to happen, a small group of governments need to make a formal request for scientific advice to the UN convention, and they should do so without delay.

How Europe can fix its forests data gap

The European Union must improve how it collects forest data, which are essential to its ambitions in biodiversity and climate change.

A study published this week reveals how European countries' need for wood biomass is contributing to an increase in forest harvesting (G. Ceccherini *et al. Nature* **583**, 72–77; 2020). The finding comes from a team of researchers at the European Commission's Joint Research Centre in Ispra, Italy, whose conclusions are based on satellite data.

Between the period of 2011–15 and that of 2016–18, 'harvested' forest area — defined as the part of a forest where trees are cut down and others planted in their place — increased by nearly 50%, from 0.76 million hectares to 1.13 million hectares. Of the 26 member states assessed, just 2 — Finland and Sweden — accounted for half of the increase.

This is an important finding. It has implications for biodiversity and climate-change policies, and for the part forests play in nations' efforts to reach net-zero emissions. Forests account for about 38% of the European Union's total land surface, and offset about 10% of its total greenhouse-gas emissions by acting as carbon sinks.

The surge in harvesting might reduce forests' ability to absorb carbon from the atmosphere, the authors say. One reason for this is that large amounts of carbon are released quickly as older trees are felled — but it takes much longer for the same amount of atmospheric carbon to be absorbed by the smaller, younger trees planted in their place.

Paradoxically, the increase in harvested forest area has been driven, in part, by demand for greener fuels, some of which are produced from wood biomass. That includes bioenergy, which comprises about 60% of the EU's renewable energy. This increase in biomass products can, in turn, be traced to the EU's bioeconomy strategy, a policy that has promoted the use of forest resources for energy, as raw materials for industries and to create jobs.

> **"Time is running out. Forest exploitation cannot continue at the current rate."**

The bioeconomy strategy has been a success in one respect: total economic output from the EU's forests between 2012 and 2016 rose by 25%, from €43 billion to €54 billion — and the increase doubled to 50% in Poland and Sweden. But economic success has come at an ecological cost.

Many of the continent's leaders are advocates of a set of ideas known as the European Green Deal, which aims to keep economies growing and create jobs by promoting greener development. However, these objectives can end up counteracting each other. For example, in its new biodiversity strategy, published in May, the EU proposes planting 3 billion trees. But it also suggests designating 30% of land (up from 26%), including old-growth forests, as protected by 2030. If forest harvesting continues at the current rate, such an ambition will be difficult to achieve.

The EU also has a target to double its share of low-carbon and renewable energy to 34% from 2015 to 2030. The European Parliament agreed that the burning of wood could count towards this target. But if wood were to supply even 40% of the extra energy, that would mean burning all of Europe's existing harvest, profoundly threatening the world's forests.

The European Commission is designing a new forestry strategy, expected in 2021, that will complement the biodiversity policy. The Joint Research Centre has been asked by the commission to establish a permanent EU observatory on forests. This will draw on the type of satellite data used in the current study to more regularly monitor deforestation, forest degradation and changes to global forest cover — and will make the data accessible to the public. The researchers drew on data from the joint NASA/US Geological Survey Landsat series of Earth-observation satellites and the Global Forest Change data set, and used Google Earth Engine, a facility that enables researchers to use Google's supercomputers to process satellite imagery.

The planned forest observatory is a crucial development, and one for which the commission deserves to be commended. Once its data become available, EU member states need to incorporate them into the official statistics that policymakers use to make decisions — for example, when planning strategies to reach net-zero emissions. Many countries' forest data — including those that are reported to the EU's statistics office, Eurostat — are based on manual forest surveys. Such surveys are important, but in some cases they are carried out only at decadal intervals, partly because they are expensive. A dedicated observatory will provide decision-makers with much more timely data and help them to identify unintended consequences of their policies.

Ultimately, data must drive action. And, as we have often written, time is running out. Forests provide valuable services on which people and the environment depend. Their exploitation cannot continue at the current rate.