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A rare opportunity to make progress in protecting global biodiversity

Researchers have a chance to incorporate the costs of biodiversity loss into economic planning. They need to seize the moment and make it happen.

Earth is at the start of a mass extinction event: estimates show that species are disappearing at 100–1,000 times the rate of naturally occurring extinctions[1,2]. It will be the sixth such event in Earth's 4.5-billion-year history. Unlike the previous five, this one has been precipitated by the actions of one species — humans.

The 15th of the 17 Sustainable Development Goals (SDGs) agreed by the United Nations, which *Nature* is covering in a special series, aims to reverse this looming crisis on land. SDG 15's aims are "to protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss".

As we have already reported in this series, progress towards a similar goal — SDG 14, to protect life below water — is going backwards. SDG 15 is also nowhere near on track. In 2019, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) — an organization similar to the Intergovernmental Panel on Climate Change — reported[3] that ecological communities on land have lost more than 20% of their original biodiversity, and that millions of terrestrial species are likely to become extinct by 2100.

The greatest driver of this loss is conversion of land on an industrial scale for human use, especially by agribusiness and industry. Every year, human activities are costing the world around 100 million hectares of natural land — and about that much forest was lost between 2000 and 2020.

There is a small silver lining: the number of countries that are tracking biodiversity as part of their official statistics has been steadily increasing, one of SDG 15's targets. Tracking is necessary — but on its own, it is only a partial answer. A bigger issue is that the costs of environmental damage, such as biodiversity loss, rarely factor into countries' official calculations of income and wealth. If anything, clearing a forest to build housing, grow crops or construct infrastructure to exploit fossil fuels is considered a net economic gain. An analysis of progress towards the 17 SDGs in 99 lower-income nations, published this year, confirms this: gains in reducing poverty and improving human welfare have come at a high price to the environment[4]. The current system is weighted towards destruction, not preservation. Now is an important moment to make a quiet revolution louder.

> **"The current system is weighted towards destruction, not preservation."**

Margins to mainstream

For decades, researchers and policymakers have worked painstakingly to integrate environmental indicators more closely with economic ones. Their project, the System of Environmental Economic Accounting (SEEA), has become the world's standard for measuring nature's contribution to the economy and the impact of economic activity on the environment. It was adopted by the UN in 2012, was updated in 2021 and is now in use in 92 countries and rising. The SEEA measures stocks of environmental assets, such as a country's forest and mineral resources, along with 'flows', such as the quantity of water consumed by industry.

Most countries report these results in 'satellite' accounts, which measure economic sectors that are not considered industries in national accounts. Australia, for instance, publishes a national state of the environment report every five years. Canada publishes annual ecosystem accounts covering 30 variables, from road density to the numbers of people using cultural services. Uganda measures how much land is covered by grasslands, woodlands and commercial farmlands, as well as the extent of suitable habitat for important species, such as the shea tree (*Vitellaria paradoxa*) and the African cherry (*Prunus africana*).

This hard work has paid off: these data, watched and used by researchers and policymakers in conservation-related fields, are now on the radar of those in finance and economic decision-making roles.

The UN Statistics Division, based in New York City, is seeking expert comments on the next revision to the System of National Accounts (SNA). This is the international statistical standard used to measure economic activity — consumer and government spending and investments by businesses. There have been just 3 revisions in the SNA's 70-year history. Now, questions about how the SNA can account for environmental sustainability, along with well-being, are being considered. If the SEEA and the SNA can be linked more closely, this could lead economic policymakers to pay closer attention to biodiversity loss, climate impacts and other costs. This revision is the chance for researchers and others who care about these issues to have their say (see go.nature.com/3tiucxt). The deadline is 9 October.

Make no mistake, the costs of failing to account for the environment are high, and they are here now — but they are hidden from our daily lives and concerns. A systematic approach to addressing these trade-offs is not the only answer to achieving the SDGs, but it is necessary. Properly resourcing national statistical offices to coordinate environmental accounts is also essential. Those who make economic policy decisions need to see the environmental wealth that is being whittled away as a direct result of those

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decisions. Only then do we stand even a remote chance of halting the sixth mass extinction event.

1. Pimm, S. L. *et al. Science* **344**, 1246752 (2014).
2. Ceballos, G. *et al. Sci. Adv.* **1**, e1400253 (2015).
3. IPBES. *Global Assessment Report on Biodiversity and Ecosystem Services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services* (eds Brondizio, E. S., Settele, J., Díaz, S. & Ngo, H. T.) (IPBES, 2019).
4. Barbier, E. B. & Burgess, J. C. *Sustainability* **15**, 3055 (2023).

As elections loom, researchers will be key to tracking disinformation

Scientists in Europe have a golden opportunity to help defend democratic principles and shape policies to tackle online harms.

Next year will bring a series of high-profile elections around the globe, including in India, Taiwan, the United States and, in all likelihood, the United Kingdom, as well as for the European Parliament. Social media will play a huge part in bringing information to the hundreds of millions of people casting their votes — and researchers who study elections are worried.

Access to social-media data is essential to those who research political campaigns and their outcomes. However, unlike in previous years, scientists will not have free access to data from X, previously known as Twitter. Many still consider X to be among the world's most influential social-media platforms for political discussion, but the company has discontinued its policy of giving researchers special access to its data. Disinformation campaigns — some armed with AI-generated deepfakes — are likely to be rampant in the coming months, says Ulrike Klinger, who studies political communication at the European University Viadrina in Frankfurt (Oder), Germany. "And we cannot monitor them because we don't have access to data."

Until its change of policy, X was an outlier in its open approach to providing data for research. Because researchers' access to data from technology platforms is controlled by the companies themselves, firms can cherry-pick which studies they allow to go forwards, potentially creating a skewed image of their performance.

Tech companies are starting to report on how they are tackling online harms, as many did last week in submissions to the European Union's Transparency Centre. But good science demands studies from individuals and teams unaffiliated with the platforms. Such studies would make it possible to authenticate the claims made in the companies' reporting, or to determine how common misinformation is, which communities are being targeted, and how effective — or harmful — that misinformation is. Beyond the immediate concerns about elections, reliable data are also needed to address long-standing concerns about online platforms, including their impact on mental health, and the prevalence of harassment, privacy violations and hate speech associated with gender, ethnicity, sexuality and other characteristics.

> "The more details that can be laid out at the start, the less opportunity there will be for companies to exploit a lack of clarity."

The EU at least is making the right moves. Its Digital Services Act was agreed in 2022. The bulk of its provisions are due to apply from early next year, and should ensure that very large online platforms — those with more than 45 million users — open up relevant data to vetted researchers deemed to be independent of commercial interests. That should crack open a treasure chest of data from social media, search engines such as Google and e-commerce platforms such as Amazon.

But such work will require the EU regulation to be implemented fairly, which is not a given. A competent authority in each country, called a Digital Services Coordinator, will mediate researchers' requests for data. This marks a big change, because it means researchers will not be beholden to the whims of companies. But a company can still refuse to provide data or ask for amendments to the request, for example, if it thinks that its data might not be secure in researchers' hands, and that confidential information, such as trade secrets, could be divulged. And each EU member state is free to interpret security, confidentiality and trade secrets according to its own laws. If a definition is too broad, it could lead to many, if not most, requests being denied.

This is why researchers need to step up and work with policymakers to define the procedures for determining which data risk divulging trade secrets, how best to ensure equitable access to data and how data quality should be assessed, so that disputes can be quickly resolved. If this doesn't happen, requests for data could be tied up, possibly in litigation, for so long that the information ceases to be useful.

The more details that can be laid out at the start, the less opportunity there will be for companies to exploit a lack of clarity to delay or contest requests for data. Researchers must speak up now to ensure that their needs — and the goals of the Digital Services Act to provide independent assessments of platforms' impact on society — are met.

If democratic societies are to thrive, it is essential that independent researchers have the legal right to access online data and study them without interference from the companies to which the data belong. In an ominous sign of what might lie ahead, X's owner, Elon Musk, last week confirmed rumours that he had disbanded the platform's Election Integrity Team. This was set up by the previous owners in an effort to stop the platform being exploited to cause harm during elections. Musk's move makes it all the more important that other platforms work constructively with researchers to ensure that both the letter and the spirit of the EU Digital Services Act are implemented.