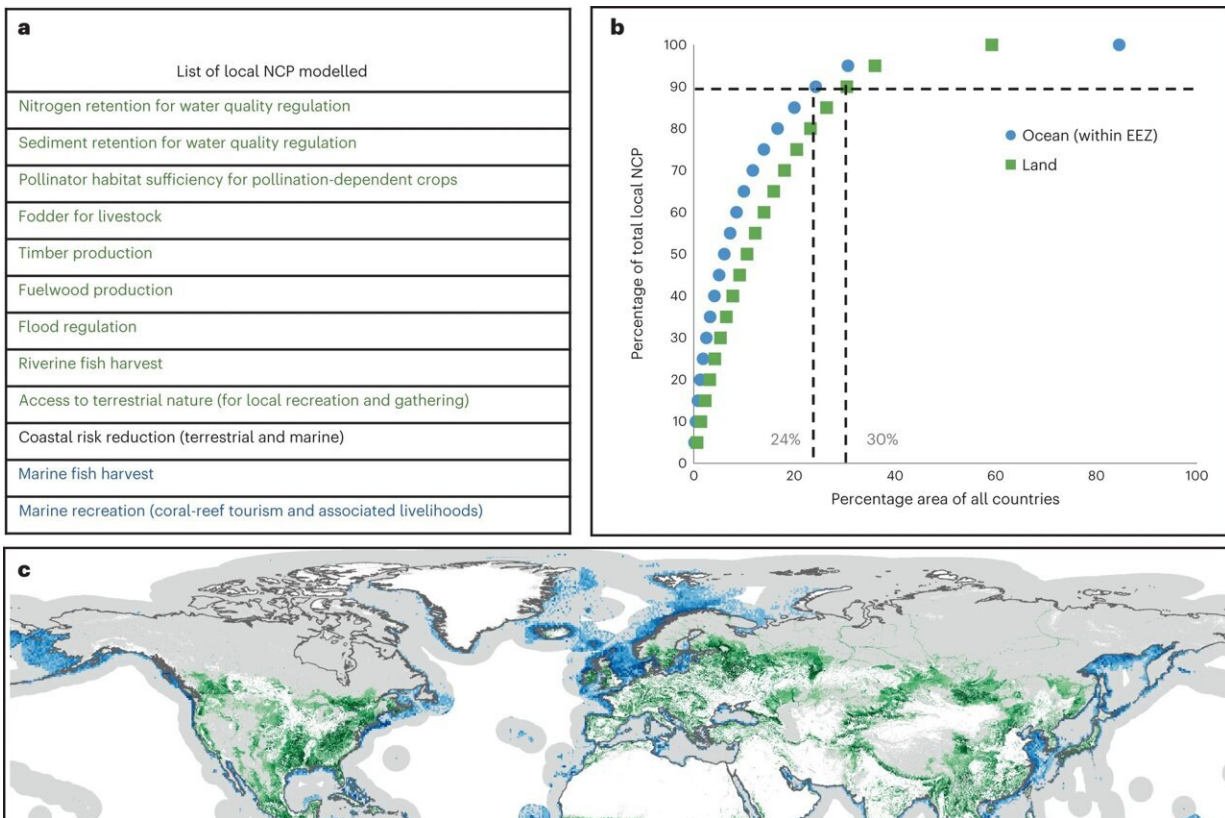


Protecting areas most important to people will also benefit nature, finds global study

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Critical natural assets, defined as the natural and semi-natural terrestrial and aquatic ecosystems required to maintain 12 of nature’s ‘local’ contributions to people (local NCP) on land (green) and in the ocean (blue). **a**, The 12 local NCP analyzed (that is, not including global NCP, shown in Supplementary Fig. 4). **b**, The NCP accumulation curve, reflecting the total area required to maintain target levels of all NCP in every country, with dotted lines denoting the area of critical natural assets (90% of NCP in 30% of land area and 24% of EEZ area). Areas selected by optimization within each country are aggregated across all

countries to create a single global accumulation curve; for area requirements in individual countries, see Supplementary Data [1. c](#), Map of critical natural assets, with darker shades connoting critical natural assets that are associated with higher levels of aggregated NCP. Gray areas show the extent of remaining natural assets not designated ‘critical’ but included in this analysis; white areas (cropland, urban and bare areas, ice and snow, and ocean areas outside the EEZ) were excluded from the optimization. Credit: *Nature Ecology & Evolution* (2022). DOI: 10.1038/s41559-022-01934-5

Researchers found there is no need for policymakers to choose between protecting nature's benefits to people or protecting animal species. Their analysis shows that prioritizing nature's benefits to people simultaneously advances human development, nature conservation, and climate mitigation goals.

Historically, targets for protecting ecosystems and biodiversity have been criticized for inadequately accounting for the needs of people, particularly the needs of local and Indigenous communities.

A paper published in *Nature Ecology & Evolution* today and co-authored by researchers at King's College London, found that conserving 30% of the Earth's land and 24% of [coastal waters](#) would sustain 90% of nature's current contributions to people in every country—such as providing food, clean drinking water, protection from hazards, mental and physical well-being.

The study marks the most comprehensive mapping of nature's contributions to people globally yet to be published and provides information that decision-makers need to better account for impacts on local communities of conservation policies and investments.

"In trying to sustainably use land, too often there is an assumption that

we must choose to either protect flora and fauna, or nature's benefits to people. What this research has shown is that you can do both because by targeting conservation efforts on areas which provide key contributions to people, we can also sustain much of [global biodiversity](#) and support climate change goals," says Co-author Mark Mulligan, Professor of Physical & Environmental Geography.

King's College London plays an active role in supporting policymakers in mapping conservation priority on land, for example through [Co\\$tingNature](#); an open-access web-based tool developed by researchers at the university to map 16 of nature's contributions to people—five of which (livestock fodder, commercial and domestic timber, fuelwood, flood regulation) were used for this study.

As a multi-scale tool, Co\$tingNature can be applied at higher spatial resolution for local and national scale analyses, in addition to the global scale mapping used for this paper.

Professor Mulligan, lead developer of Co\$tingNature, added, "Understanding how much nature we need for sustainable human development—and where the most critical nature for people is—requires advanced satellite remote sensing and sophisticated spatial analysis of both supply and demand for nature's many contributions to people globally."

"Through this work, some of the leading global teams mapping nature's contributions to people have worked together to provide a set of global priorities: local and national analyses are now required to understand what actions in these places will best sustain nature's critical contributions to the people living in and near them—and the rest of us."

During the study, researchers found that prioritizing conservation, protection, and restoration efforts in the areas identified as 'critical

natural assets' could maintain a high proportion of nature's current benefits to people.

Direct benefits of these critical natural areas are widespread—6.1 billion people live within one hour's travel and 3.7 billion people live downstream of the critical areas but many more people are impacted by the benefits from nature that enter the global supply chain from these areas.

These valuable ecosystems can be found in every corner of the planet. Some are well-known environmental powerhouses, like the Congo Basin forests. Others may fly under-the-radar, like the Appalachians in the US, but each one is vital to the respective communities it serves. Importantly, every country has some critical areas in which nature provides many benefits to local communities, often found in headwaters of large river basins or near heavily populated areas.

Lead author, Becky Chaplin-Kramer, Principal Research Scientist at the University of Minnesota, said, "All people on the planet benefit from nature. What is striking is just how many benefit from a relatively modest proportion of our total global land area. If we can maintain these areas in their current state through a variety of conservation mechanisms that allow the types of use that make them so valuable, we can ensure that these benefits continue for years to come."

"Global maps can provide a big picture view, and reveal large-scale patterns, but they require local context to make decisions for implementation. Ultimately, we hope this information can be used alongside other diverse values of nature, including intrinsic values of species. Recognizing the way people benefit from and rely on nature can help create lasting buy-in for conservation."

David Hole, study co-author and vice president for global solutions at

Conservation International's Moore Center for Science, said, "One of the critical questions looking ahead will be: where should we focus our investments of time and resources? While nature is important everywhere, this study helps identify the places that are among the most important for the communities benefiting from these critical landscapes and seascapes, as well as humanity as a whole. Whether they are providing clean water, food security, or protection from storms, it's critical these areas are prioritized in global and national [conservation efforts](#)."

In just a few weeks the United Nations Convention on Biological Diversity (CBD) will convene in Montreal to adopt new targets for biodiversity [conservation](#), restoration, and management. Along with the global commitment to the UN Sustainable Development Goals and the Paris Agreement on climate change, this new research will help influence sustainable development for the rest of the decade.

More information: Rebecca Chaplin-Kramer et al, Mapping the planet's critical natural assets, *Nature Ecology & Evolution* (2022). [DOI: 10.1038/s41559-022-01934-5](#)

Provided by King's College London

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