

# Scientists identify safe havens to prevent ‘the sixth great extinction’ of life on Earth

*Global biodiversity study identifies 16,825 ‘Conservation Imperatives’ sites harboring rare and threatened species in need of immediate protection.*

WASHINGTON DC, UNITED STATES, June 26, 2024 /EINPresswire.com/ -- If we act now, scientists say we can prevent further species extinctions and loss of rare biodiversity. In a ground-breaking

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*Dr Eric Dinerstein*

new paper published in [Frontiers in Science](#), an international group of ecologists and conservation experts have identified biodiversity havens home to rare but currently unprotected animal and plant species. The paper lays out an affordable and achievable plan for protecting threatened species and makes the case that these ‘Conservation Imperatives’ sites are a matter of utmost urgency. They should be viewed as the top priority as governments develop targets in line with the global ‘30 by 30’ goal — to protect 30% of the Earth’s surface by 2030.

“Many species on Earth are rare, meaning they have restricted ranges, occur at very low densities, or exhibit both conditions,” said Dr. Eric Dinerstein of RESOLVE, lead author of the paper. “Our study shows how these unprotected pockets of rarity are highly concentrated, covering a shockingly small area—roughly 1.2% of the Earth’s terrestrial surface. Targeting these areas for immediate protection offers an achievable win for nature conservation by heading off the sixth great extinction of life on Earth.”

The international team of co-authors represents 20 academic institutions and non-governmental organizations, including RESOLVE, One Earth, the University of Minnesota, Arizona State University, Stanford University, World Land Trust, the National Autonomous University of Mexico, Duke Kunshan University, the Wildlife Institute of India, IUCN, Global Conservation (an NGO), and Globaia.

In the new analysis, Dinerstein and his colleagues identify 16,825 sites around the world, covering approximately 164 million hectares, in need of urgent protection in order to prevent the predicted extinctions of thousands of rare species. Almost 61% of these ‘Conservation Imperatives’ sites are located in the tropics, with 76% found specifically in tropical rainforests, and 38% are in close proximity to existing protected areas, making them easier to

conserve—either by incorporation into existing protected areas or by connection via wildlife corridors.

“One of the striking findings of our study is the concentration of the rarity sites. Over 80% of the 16,825 sites occur in only 30 countries and 72% in just 10 countries, with Brazil and the Philippines representing more than one-third of all Conservation Imperative sites,” said co-author Dr. Anup Joshi, a spatial analyst at the University of Minnesota.

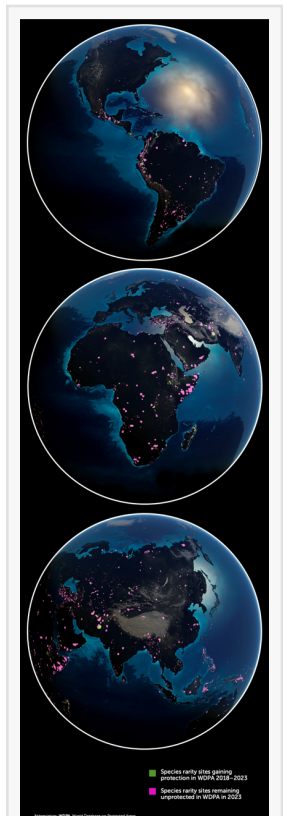
The paper sounds an alarm regarding current global conservation efforts. The authors calculated that while 120 million hectares were added to the World Database on Protected Areas between 2018 and 2023, only 11 million hectares of land harboring rare, range-limited, and threatened species were put under protection. The strategy for the next three years must be to reverse this trend, making rare species habitats the top priority.

“Conservation Imperatives sites are home to over 4,700 threatened species in some of the world's most biodiverse yet threatened ecosystems,” said co-author Andy Lee of RESOLVE. “These include not only mammals and birds that rely on intact habitats, like the tamaraw in the Philippines and the Celebes crested macaque in Indonesia, but also range-restricted amphibians, reptiles, and rare plant species.”

To determine costs associated with the Conservation Imperatives, the authors develop a first-of-its-kind global land cost model using data gathered from more than 800 protection projects over the past 14 years, adjusted for inflation. While the model focuses on private land acquisition and long-term leases, other land stewardship approaches are likely necessary to secure these areas, including government redesignation and Indigenous territorial stewardship. Notably, 17% of Conservation Imperative sites are found within Indigenous territories, illustrating the importance of upholding and strengthening Indigenous land tenure rights over the long term.

“The analysis suggests that protecting the Conservation Imperatives sites in the tropics would cost approximately \$34 billion per year over the next five years,” said co-author Karl Burkart of One Earth. “This represents just 0.03% of global GDP and less than 2% of environmentally harmful subsidies provided by governments annually – a small price to pay to prevent thousands of impending plant and animal extinctions.”

The Conservation Imperatives paper is the most recent in a series of analyses developed by the [Global Safety Net](#) (GSN) initiative – a consortium of leading academic institutions and



Conservation Imperatives—unprotected sites harbouring rare, range-restricted, and threatened species—are highly concentrated, requiring protection in only ~164 Mha globally to avoid extinctions; this equates to only 1.22% of the Earth's entire terrestrial surface.

conservation experts led by RESOLVE and One Earth, which provides cutting-edge research to support governments, philanthropists, and the private sector in establishing nature-positive commitments aligned with the UN Kunming-Montreal Global Biodiversity Framework (GBF). The GSN maps the entire world across thirteen layers of global biodiversity data. Combined with maps of existing protected areas and a new fractional land cover analysis using open-source satellite imagery, the researchers used six rare species layers to identify the most critical unprotected areas of biodiversity habitat.

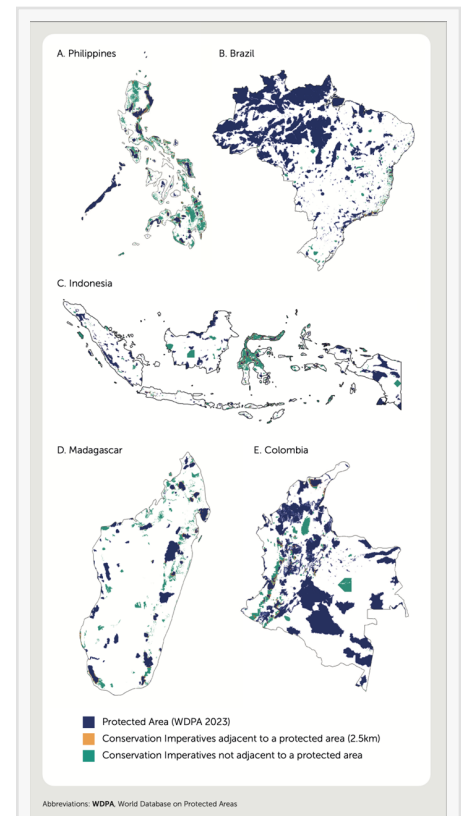
“What natural heritage will we bequeath to future generations? A healthy, vibrant Earth is critical for us to pass on,” said Dinerstein. “We need to protect half the planet to draw down carbon, safeguard intact habitats, protect wide-ranging and migratory species and other conservation targets outlined in the Global Biodiversity Framework. But as the most urgent step towards the GBF, we have to head off the extinction crisis. Conservation Imperatives charts the way forward.”

The paper is featured as one of a small group of Frontiers in Science Lead Articles for 2024, selected from across their 220 scientific journals. As such, it will be an open-access paper with its own multimedia article hub: [Conservation Imperatives for biodiversity protection](#). The hub features visual explainers and lead commentaries from eminent experts, including Prof. David Lindenmayer (Australian National University), Rita El Zaghoul (High Ambition Coalition for Nature and People), Dr. Charles Barber (World Resources Institute), and Dr. Hugh Possingham (University of Queensland).

RESOLVE is a Washington, DC-based non-profit research organization that forges sustainable solutions to critical environmental, social, and health challenges. Webpage: <https://www.resolve.ngo/>

One Earth is an LA-based nonprofit organization dedicated to empowering everyone, everywhere, to heal the Earth and reclaim our future. One Earth houses the Global Safety Net (GSN) initiative, co-led by RESOLVE, which focuses on the protection and restoration of 50% of the Earth’s lands and seas. Webpage: <https://www.oneearth.org/>

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Globally, 38% of the 16,825 Conservation Imperative sites are either adjacent to or within 2.5 km of an existing protected area, potentially reducing land acquisition and management costs.

This press release can be viewed online at: <https://www.einpresswire.com/article/722839856>

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