

Landmark 50 Reefs+ study maps the future of coral reef survival

Scientists identify coral reefs with the most potential for climate resilience

Global climate observations and 45,000+ coral surveys identify nearly 166,000 km² of coral reefs with the strongest potential to persist through the climate crisis.

- Three times more climate-resilient reefs have been identified than in the original 50 Reefs global assessment published in 2018.
- Global mapping reveals climate resilient reefs across 71 additional countries and 100 territories, including previously under-recognised regions in the Caribbean, Pacific, Indian Ocean, and beyond.
- Only 28% of identified climate-resilient reefs currently fall within protected or conserved areas.
- New global campaign led by Wildlife Conservation Society (WCS), World Wildlife Fund (WWF) and The Nature Conservancy (TNC) calls for urgent protection of reefs worldwide

Mombasa, Kenya (16 June 2026) – Scientists have identified 165,922 km² of coral reefs across 71 countries and 100 territories with the strongest potential to survive the climate crisis, according to a major new global study presented at the Our Ocean Conference in Kenya today by the Wildlife Conservation Society (WCS) and Macquarie University, with support from the Bloomberg Ocean Initiative. The research marks the launch of a new global campaign, *Our Reefs, Our Future*, from civil society calling on governments to prioritise protection of these reefs from immediate, local threats.

This analysis, developed as part of the *50 Reefs+ study*, presents a significant advance in understanding which coral reefs retain the strongest potential to survive future warming. The paper, *Machine-learning and prioritization models reveal climate refugia for coral reefs into 2050*, builds on the original 50 Reefs assessment published in 2018 – the first global effort to identify the coral reef systems most likely to withstand climate change and serve as priorities for conservation action. Expanding significantly on its foundation, the new study identifies three times more climate-resilient reef areas across 30 additional countries and 54 additional territories and jurisdictions, revealing a far greater opportunity for coral reef persistence than previously understood.

Dr. Emily Darling, Director of Coral Conservation at WCS and co-author of the study said: *“This is a significant breakthrough in our understanding of coral reef resilience. Coral reefs are often framed as ecosystems beyond saving, but this research shows that there is a global set of reefs that have the potential to survive and recover from the climate crisis. We now have a critical opportunity to mobilize the necessary action to protect these reefs in meaningful partnership with local stakeholders and national governments.”*

The analysis finds that more than half (61%) of identified climate-resilient reefs are concentrated in five countries – Australia, the Bahamas, Cuba, Indonesia and the Philippines. Crucially, Australia, the Bahamas and Indonesia governments have signed the High-Level Commitment on Climate-Resilient Coral Reefs and are working to protect climate-resilient reefs in their territories.

The research also identifies substantial new areas of climate-resilient reefs across the Caribbean, including in Belize, Panama and the Turks and Caicos Islands - regions that earlier global 50 Reef assessments had not recognised.

While earlier global assessments focused primarily on reefs that could avoid climate impacts through favourable environmental conditions, the new analysis reveals that coral reef resilience is more complex than previously understood.

Researchers identified three distinct pathways through which reefs can persist in a warming world. Some reefs act as **avoidance refugia**, located in rare ocean "cool spots" where local conditions help shield corals from extreme heat and provide refuge from warming trends.

Others function as **resistance refugia**, where corals have developed adaptations that enable them to withstand heat stress, bleaching and other climate impacts that would damage less resilient reef systems.

A third group are **recovery refugia**, reefs that can rebound rapidly after disturbances such as bleaching events, cyclones or storms, rebuilding coral cover and ecological function faster than surrounding reef systems.

Together, this avoidance, resistance and recovery framework provides the clearest picture yet of why some coral reefs retain greater potential to survive climate change than others and represents a major advance in understanding coral reef resilience.

Kyle J A Zawada, the study's lead author from Macquarie University, said: *"The world's coral reefs are facing an unprecedented crisis, with the risk of irreversible changes to coral ecosystems. But there is still hope. Our work identifies pockets of resilience where reefs may withstand and recover from disturbance. By safeguarding these resilient reefs, we can help push back against declines driven by local human pressures and climate change. These reefs could act as living seed banks for wider ecosystem recovery, helping to ensure that future generations inherit living, functioning coral reefs and not just degraded versions of what they once were."*

The model was trained on decades of real-world coral reef observations to identify reefs with the strongest potential to persist through future warming. The resulting map is 10,000 times more detailed than any map before it, providing a far more precise picture of coral reef resilience to guide local and national conservation actions.

SkyTruth has partnered with WCS to provide access to the study's datasets through the 30x30 Progress Tracker, a free interactive platform that enables users to track global, regional, and national progress toward conserving 30% of the planet by 2030. By displaying the data on the tool through high-resolution mapping, governments and stakeholders can clearly see where these reefs are and how they contribute to 30x30 goals.

SkyTruth's CEO, John Amos, said: *"We can't protect what we can't see. Our platform transforms complex coral reef science into a practical tool for action. Now, policymakers and communities can identify climate-resilient reefs globally for the first time, with the precision needed to support real-world conservation planning and investment. Better maps lead to better decisions to protect reefs and people alike."*

Nearly one billion people depend on coral reefs for food security, livelihoods and coastal protection. Yet water pollution from sewage, agricultural runoff and sediment loss, destructive and unsustainable fishing practices, and poorly managed tourism and coastal development continue to accelerate reef decline worldwide.

Despite the growing scientific understanding of where climate-resilient reefs remain, major protection gaps persist. Only around 28% of identified priority reefs currently fall within protected or conserved areas, leaving more than 119,000 km² outside existing conservation

frameworks. Many existing marine protected areas also continue to face significant challenges around funding, enforcement and long-term management capacity.

Antha Williams, who leads the Environment Program at Bloomberg Philanthropies, said: *“When Bloomberg Philanthropies helped launch the 50 Reefs initiative, it was the first global assessment of its kind to identify coral reefs with the strongest chance of surviving climate change. This new research shows that opportunity is even greater than previously understood, revealing three times more climate-resilient reefs and giving governments, scientists, Indigenous Peoples, and local communities a powerful new roadmap for protecting them – and the communities that depend on them – for generations to come.”*

The findings are being launched alongside the *Our Reefs, Our Future* campaign at the 2026 Our Ocean Conference in Kenya, a global effort led by WCS, the World Wildlife Fund (WWF) and The Nature Conservancy (TNC). The campaign calls on governments to prioritise climate-resilient coral reefs within Marine Protected and Conserved Area (MPCA) networks and national 30x30 commitments, recognising these reefs as critical infrastructure for people, economies and coastal resilience. It also seeks to mobilise greater political ambition and investment to tackle immediate local threats – including pollution, destructive fishing, unsustainable coastal development and poorly managed tourism – so these reefs have the greatest possible chance of surviving climate change.

Petra MacGowan, Director of Coral Reef Partnerships at The Nature Conservancy shared, *“We now know more than ever about which coral reefs are most likely to survive climate change – but identifying them is only the first step. Without urgent investment in management, sustainable financing, and partnerships with the communities who depend on these reefs, they will remain at risk. The science is there, the tools are working, and partners are ready to act. What we need now is speed and scale – to rapidly expand protection and secure the future of the world’s most climate-resilient reefs.”*

Dr. Gabby Ahmadi, Vice President of Seascapes and Science at WWF US added, *“For millions of people, coral reefs are not just an ecosystem; they are food, income, protection and identity. As governments move to protect climate-resilient reefs, Indigenous Peoples, local communities and reef-dependent populations must be at the centre of decisions and investment. Protecting coral reefs is ultimately about protecting people and nature together because the world above depends on the world below.”*

Dr. Stacy Jupiter, Executive Director of the Global Marine Program at WCS and study co-author, said: *“For years, the world thought we were watching the final decline of coral reef ecosystems. Instead, we now know there are far more reefs with the potential to survive and recover from climate change than previously understood.*

“More than half of these climate-resilient reefs are concentrated in just five countries. That creates an extraordinary opportunity for governments to protect ecosystems that could help regenerate reefs globally, while safeguarding food security, coastlines, jobs and billions of dollars for their own economies.”

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Access to the pre-print of the study: [here](#)

Access the map: <https://30x30.skytruth.org/progress-tracker?content=%7B%22showDetails%22:false,%22tab%22:%22marine%22%7D&layers=mrr,wwc,cwc&settings=%7B%22labels%22:false%7D>

About the research:

The study combines more than 45,000 field observations of coral reefs collected between 1960 and 2025 with 42 climate, oceanographic and human-pressure predictors to create the first high-resolution global assessment of coral reef climate refugia at a 250-metre scale.

About the Wildlife Conservation Society (WCS)

The Wildlife Conservation Society (WCS) is a global conservation organization working to protect the world's wildlife and wild places through science, conservation action, education, and partnerships with governments, Indigenous Peoples, local communities, and the private sector. WCS operates conservation programs in more than 50 countries and across the world's oceans, with a mission to help secure a future where nature and people thrive together.

Through its marine conservation work, WCS supports the protection and sustainable management of coral reefs, fisheries, mangroves, and other critical ocean ecosystems that sustain biodiversity, coastal protection, food security, and livelihoods for millions of people worldwide.

Learn more at: www.wcs.org.

About The Nature Conservancy

The Nature Conservancy is a global conservation organization dedicated to conserving the lands and waters on which all life depends. Guided by science, TNC creates innovative, on-the-ground solutions to the world's toughest challenges so that nature and people can thrive together. Working in more than 70 countries and territories, TNC uses a collaborative approach that engages local communities, governments, the private sector, and other partners.

Learn more at www.nature.org

About the Bloomberg Ocean Initiative

The Bloomberg Ocean Initiative is Bloomberg Philanthropies' effort to protect the world's ocean from climate change, overfishing, and pollution threats. Since 2014, Bloomberg Philanthropies has invested \$375 million to restore and protect critical ocean ecosystems to support the global goal of protecting 30% of the world's ocean by 2030.

The Bloomberg Ocean Initiative supports local and global partners in advocating for data-driven solutions, community involvement, and policy change that can help safeguard marine ecosystems, including coral reefs, and the billions of people who depend on them. To date, these efforts have helped pass over 100 new policies at the local and national level that have strengthened the protection of over 11 million square miles of ocean – nearly three times the area of the United States.

Learn more here: <https://www.bloomberg.org/environment/protecting-the-oceans/>

About SkyTruth

SkyTruth is a technology nonprofit that harnesses satellite technology and artificial intelligence to expose environmental threats, accelerate climate action, and support biodiversity protection. Since its founding in 2001, organisations around the world have used our tools and insights to promote conservation efforts and hold polluters accountable for harmful activities that would otherwise remain hidden from view.

Our Reefs, Our Future Campaign

The Our Reefs, Our Future campaign is a global initiative led by WCS, WWF and TNC to help accelerate protection of coral reefs with the greatest potential to survive climate change. The campaign supports governments, communities and partners to use the latest science to guide conservation, climate adaptation and investment decisions for reefs that support biodiversity, food security, livelihoods and coastal resilience.

About World Wildlife Fund

WWF is one of the world's leading conservation organizations, working for 60 years in nearly 100 countries to help people and nature thrive. With the support of nearly a million members in the United States and more than 5 million members worldwide, WWF is dedicated to delivering science-based solutions to preserve the diversity and abundance of life on Earth, halt the degradation of the environment, and combat the climate crisis.

Visit worldwildlife.org to learn more; to keep up with the latest conservation news; and sign up for our newsletter and news alerts here.

Learn more at: ourreefsourfuture.org

**site to go live June 16th*