

OUR 2030 GOALS



Cattle egret, Jamaica © Tim Calver

Our goals



Ecosystems of hope

In this rapidly changing world, mangroves are ecosystems of hope. While recent history has seen vast losses, impacting millions of people and large areas of critical biodiversity, things are changing.

Rates of mangrove loss have decreased dramatically, while our knowledge of their value and importance has shifted from a broad sense of importance to a very real and quantified inventory. Mangroves are not only places of great beauty offering opportunities for solace or adventure to local peoples and travellers, they are also fish factories, carbon stores and seawalls.

Now, over 40% of remaining mangroves are formally protected for conservation purposes, and efforts to restore mangroves have surged, along with the tools and knowledge to support such restoration efforts.

Mangroves are also remarkably resilient and opportunistic. Give these ecosystems half a chance and they'll take it – rapidly settling on newly deposited coastal settlements, or recolonizing former strongholds whenever they are re-connected to the shifting tides.

United for conservation

Recognising both their importance and their resilience, communities, governments, social networks, and non-profits are increasingly investing in the opportunities that mangroves present.

Uniting many of these efforts is the Global Mangrove Alliance, a remarkable worldwide collaboration uniting NGOs with governments, academics and communities by sharing information, experience, opportunities and funding.

The GMA represents a phase-shift in conservation opportunities for mangroves. With our global vision, we are providing a catalyst for accelerating change and building a host of opportunities for coastal peoples and biodiversity around the world.

The Global Mangrove Alliance – a goal for the future of mangroves

In 2022, the GMA revised its Goal, an ambitious plan for turning the tables on the world's mangroves. The plan contains three critical strands to be achieved by 2030:

- 1. Halt loss.** Reduce net mangrove losses driven by direct human actions to zero
- 2. Restore half.** Put back mangroves to cover at least half of all recent loss
- 3. Double protection.** Ensure long-term secure protection is increased from 40% to 80% of remaining mangroves

Achieving these goals will generate considerable benefits for people across the planet, while new and ongoing studies by GMA partners and researchers are allowing us to constantly improve our ability to assess these.

Strand 1: Halt Loss

Rates of mangroves loss have already slowed considerably in recent years. This presents an opportune moment to raise our ambition. While we can aspire to halt all losses, our target refers to direct, and therefore directly manageable, human-driven loss.

It is estimated that human-driven loss represents 62% of total losses¹. Over the decade from 2010 to 2020, some 600km² of mangroves were lost, and we can estimate that 373km² of this was due to direct human impacts.

To bring such losses to zero by 2030 we need to start to reduce loss rates now. Assuming a linear rate of reduction in human driven losses, this would save approximately 168km² by the end of 2030.

Goal for avoided loss:

168km² by 2030

Some of the highest losses come from Southeast Asia, and these areas will present considerable challenges. At the same time, they represent some of the most diverse mangrove ecosystems on Earth, acting as rich providers to coastal populations.

While this goal focuses on preventing further direct loss, in recognizing that mangroves are dynamic ecosystems, we also draw attention to the possibility of making further gains as mangroves naturally colonize new locations². Any such gains offer additionality to the gains made by halting losses of remaining cover.

¹ Goldberg, L., D. Lagomasino, N. Thomas, and T. Fatoyinbo. 2020. *Global declines in human-driven mangrove loss*. *Global Change Biology* 26:5844–5855. <https://onlinelibrary.wiley.com/doi/abs/10.1111/gcb.15275>

² D. Lagomasino, T. Fatoyinbo, S. Lee, E. Feliciano, C. Trettin, A. Shapiro, M.M. Mangora, Measuring mangrove carbon loss and gain in deltas, *Environmental Research Letters* 14(2) (2019) 025002. [10.1088/1748-9326/aaf0de](https://doi.org/10.1088/1748-9326/aaf0de).



Local men tend mangrove seedlings in a nursery at the Rio Platano Biosphere Reserve, Honduras. © Nicole Balloffet

Strand 3: Double protection

With 42% of the world's mangroves currently in protected areas, mangroves are already well covered compared to many other ecosystems. However, the urgency to halt all loss is fundamental. One of the key approaches to prevent further loss is the incorporation of mangroves into permanent forms of protection. These include traditional protected areas, but also Other Effective Area-based Conservation Measures (OECMs), which could encompass indigenous lands and areas of sustainable use where mangroves are protected from clear-felling and conversion.

Strand 2: Restore Half

Over 11,700km² of mangroves have been lost since 1996, the year that sets the baseline for our definition of "recent" loss. However not all of these mangroves are restorable: we exclude areas that have changed to open water or urban use as effectively unrestorable.

Approximately 8,183km² are considered restorable and the goal seeks to restore half of this area by 2030. This is a deeply ambitious goal. Even though the target excludes effectively unrestorable areas, the challenge of restoration in the remaining areas is likely to be highly variable.

Goal for restoration:

4,092km² by 2030

Goal for doubling protection:

**Secure a further
61,000km² under
conservation
measures**



Pulau Dua Nature Reserve, Java, Indonesia © Mark Spalding, TNC

...and in return

Mangroves are providers of food, security, income, and leisure benefits, while also hosting vast stocks of carbon, acting as highly effective carbon sinks.

When considering the challenges of halting losses and restoring vast areas it is valuable to think of the benefits that will come from meeting the GMA goals.

If we assume global average values, the avoided loss of 168km² of loss by 2030 will:

- **Avoid 0.026 gT CO₂ emissions.³**
- **Secure the continued supply of 800,000,000 commercially important fish and shellfish every year.**

Restoration impacts are not immediate and benefits accrue as restored systems mature. Our vision for benefits is thus a projected vision where we estimate that the restoration of 4,092 km² of mangrove will:

- **Avoid further emissions from soil and eventually lead to the securing of combined biomass and soil carbon of some 0.635 gT CO₂ equivalent.**
- **Provide additional habitat which will generate over 25 billion commercially important fish and shellfish every year.**

³The numbers for carbon are simple totals of carbon that would be contained in mangrove ecosystems. In almost all cases what replaces mangroves, including areas for potential restoration, still contain carbon, although in much lower concentrations than in mangrove ecosystems.

An aerial photograph of a mangrove forest. The dense green foliage of the mangrove trees is interspersed with dark, calm water channels. A small, narrow boat is visible in one of the waterways. The image is partially obscured by a white curved shape on the left side of the page.

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Ocean Image Bank

Conservation

While not all unprotected mangroves are threatened with loss, it remains valuable to account for the security provided by long term conservation commitments. Again, using global average estimates doubling the current protected area coverage would increase the long-term security of:

- 9.14gT of CO₂ equivalent.
- Commercial fish productivity equivalent to 291 billion commercially important fish and shellfish every year.

Above and beyond the benefits from carbon capturing and fisheries will be benefits from coastal protection, securing lives, infrastructure, and economic security. The global values of annual flood risk reduction for 15 million people and over \$65 billion worth of property⁴ give some indication of how such values play out, although current models are insufficient to generate more exact values from specific locations or restoration actions.

The Global Mangrove Alliance is working diligently through the collective impact of our members and partners to secure the future of over 150,000km² of mangroves globally by 2030.



Protected mangroves from above, Colombia © Mariana Rivera-Uribe, Mangrove Photography Awards 2021

⁴P. Menéndez, I.J. Losada, S. Torres-Ortega, S. Narayan, M.W. Beck, The Global Flood Protection Benefits of Mangroves, Scientific Reports 10(1) (2020) 4404. [10.1038/s41598-020-61136-6](https://doi.org/10.1038/s41598-020-61136-6).



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