Supporting the implementation of the Ramsar Convention

Through the Global Mangrove Watch

The Global Mangrove Watch (GMW) is an online platform that provides remote sensing data and tools for global monitoring of mangroves, in scientific collaboration with Wetlands International, Aberystwyth University, soloEO, TNC, JAXA, NASA and a host of partners.

The Global Mangrove Watch can be used to support Ramsar Contracting Parties, in particular those lacking their own national mangrove monitoring system, through data on their mangrove resources in support of national wetlands inventories, developing Information Sheet on Ramsar Wetlands (RISs), monitoring sites ecological character, mangrove management, and restoration, and reporting to Ramsar and other international agreements as part of National Reports.

GLOBAL MANGROVE WATCH

GLOBAL MANGROVE ALLIANCE

Mangroves under the Ramsar Convention

Wetlands are critical resources for global biodiversity, water security, and carbon storage, but their global extent has declined by 35% from 1970 to 2015.

The opportunity to halt the loss and degradation of wetlands and their restoration potential is increasingly expressed across global conventions on climate change, biodiversity, and disaster risk reduction – aligned with the core work of the Ramsar Convention to advance the protection of wetlands through international collaboration, protection of critical wetland resources, and improved management and wise use of all wetlands.

Mangroves are categorized by the Ramsar Classification System for Wetland Type as Intertidal Forested Wetlands, type l. There are an estimated 147,000 km^2 of mangroves remaining worldwide, and a net 5,245.24 km^2 of mangrove forest has been estimated lost between 1996 and 2020 (3.4%)[1]. Before 1996, it is estimated that the rate of change was significantly higher, although global estimates of mangrove extent are less certain at this time.

Nature-based Solutions (NbS), including the protection, conservation and restoration of mangroves and other blue carbon ecosystems, are an integral component to the achievement of Ramsar Strategic Plan 2016–2024 commitments. Mangroves represent an incredible investment with returns in carbon storage, biodiversity protection, and building climate resilience.

Mangroves are estimated to help prevent more than $65 billion in property damages from storms and reduce flood risk to some 15 million people every year and are the most efficient carbon capture and storage systems on the planet, currently storing carbon that is equivalent to over 21 billion tons of CO_2.[2]

The Ramsar Convention recognizes the importance of mangroves in providing essential ecosystem services and contributions to people's livelihoods, such as protection from floods and droughts, provision of food, biodiversity support, and their critical role as carbon sinks.
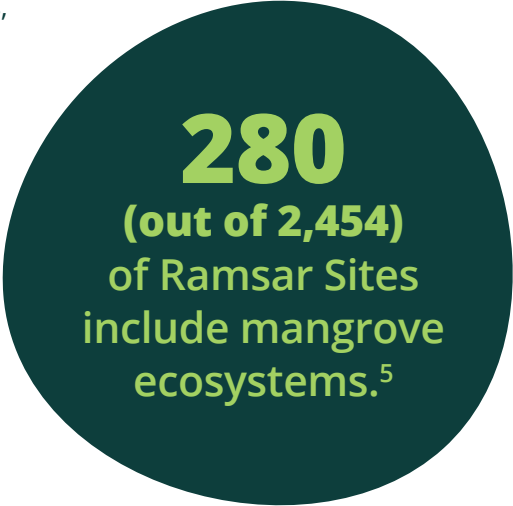
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[1] Global Mangrove Extent Change 1996-2020: Global Mangrove Watch Version 3.0
[2] https://www.mangrovealliance.org/wp-content/uploads/2022/09/The-State-of-the-Worlds-Mangroves-Report_2022.pdf

Mangroves under the Ramsar Convention cont.

Mangrove ecosystems are applicable across numerous areas under the Convention:

- Ahead of each ordinary meeting of the Conference of the Parties (COP), Contracting Parties have to submit detailed National Reports to measure implementation of the Convention and for sharing information on wetland conservation measures.

- Target 12 of the Ramsar Strategic Plan 2016–2024 includes the restoration of degraded wetlands, prioritizing wetlands that are relevant for biodiversity conservation, disaster risk reduction, livelihoods, and climate change mitigation and adaptation.

- Resolution XIII.14 encourages the conservation, restoration, and sustainable management of coastal blue carbon ecosystems, such as mangroves. This same resolution encourages Contracting Parties to the Ramsar Convention with coastal blue carbon ecosystems in their territories to collect and analyze data and map them. This process aims to update their coastal wetland inventories and threats, inform international awareness of the global extent of these ecosystems, estimate the carbon storage, and update their national greenhouse gas inventories.

- Starting in 2018, Ramsar Contracting Parties have been required to report on the change in the extent of water-related ecosystems over time (SDG 6.6.1), which includes mangroves.[3] Recognizing the value of Earth Observation datasets for addressing the information needs of Contracting Parties to the Convention, Ramsar provided Technical Guidance on remote sensing tools that can be used for wetland inventory and the assessment and monitoring of change in wetlands.[4]

280
(out of 2,454)
of Ramsar Sites include mangrove ecosystems.[5]

[3] Ramsar Convention on Wetlands, 2018
[4] Ramsar Technical paper 10, 2018
[5] Ramsar Sites Information Service

Using the Global Mangrove Watch

The Global Mangrove Watch (GMW) is an online platform that provides remote sensing data and tools for global monitoring of mangroves, in scientific collaboration with Wetlands International, Aberystwyth University, soloEO, TNC, JAXA, NASA and a host of partners.

It gives universal access to near real-time information on where and what changes there are to mangroves worldwide, and highlights critical examples of the value of mangroves.

The GMW is a free, easy-to-use, and scientifically robust tool for governments to move towards accurately integrating mangrove commitments, based on their own domestic needs and priorities.

The GMW is the primary global source of information on mangrove status and extent, responding to information needs by Contracting Parties to the Ramsar Convention as well as other global frameworks.

Through the Global Mangrove Watch, governments can track the changes in mangrove extent against national and international goals, estimate carbon storage of mangrove ecosystems at a national scale, and track mangrove commitments at the international level.

The Global Mangrove Watch can be used to support Ramsar Contracting Parties, in particular those lacking their own national mangrove monitoring system, through data on their mangrove resources in support of national wetlands inventories, developing Information Sheet on Ramsar Wetlands (RISs), monitoring sites ecological character, mangrove management, and restoration, and reporting to Ramsar and other international agreements as part of National Reports.

The GMW has contributed to Ramsar's Global Wetlands Outlook report and provides data on the change in the extent of water-related ecosystems over time for SDG 6.6.1 reporting.

The Global Mangrove Watch's Climate and Policy Dashboard offers national status reports on integration of mangroves into international policy commitments. The dashboard also shows at a glance whether countries have included blue carbon ecosystems into their current NDCs under the UNFCCC, if mangroves are considered in the national forest definition, and if a country has specified implementing the IPCC Wetlands Supplement.

Collectively, these elements support the improvement of a government's national GHG inventory and other reporting requirements like the Biennial Transparency Report.

How to use the Global Mangrove Watch

The following GMW tools can be used to support countries in accurately integrating their mangrove ecosystems into their commitments and reporting for the Ramsar Convention:
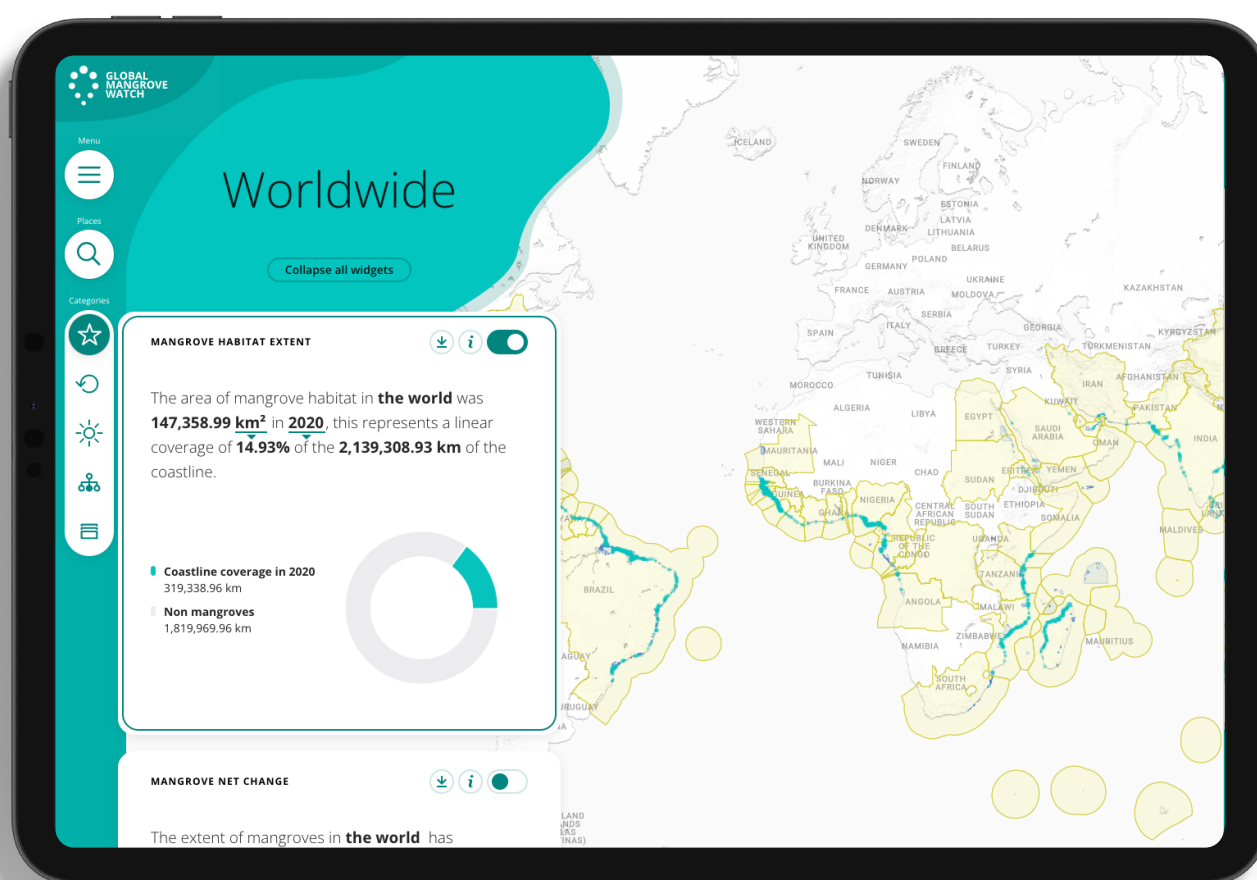

Mangrove Habitat Extent

This layer describes the national areal extent of mangrove habitat (km^2) and the length of coast with mangrove forests, in the years 1996, 2007-2010 and 2015-2020. This layer allows governments and other stakeholders to track the progress of mangrove extent against national and international goals, setting a baseline for reporting progress and establishing targets for Ramsar or other conventions. It also enables governments to know the location and extent of these ecosystems in their countries, allowing them to better articulate relevant priorities and actions for mangrove management activities in their commitments.

Mangrove Net Change

This layer describes the change in the areal extent of mangrove habitat (km²) in the years 1996, 2007–2010 and 2015-2020. It allows governments to track how the extent of mangroves has changed over time for the purpose of inventory reporting, establish a baseline for setting national commitments, and visualize the national impact of conservation and restoration efforts. The loss rate and net change are also critical components necessary to understand blue carbon investment potential in addition to climate mitigation potential.
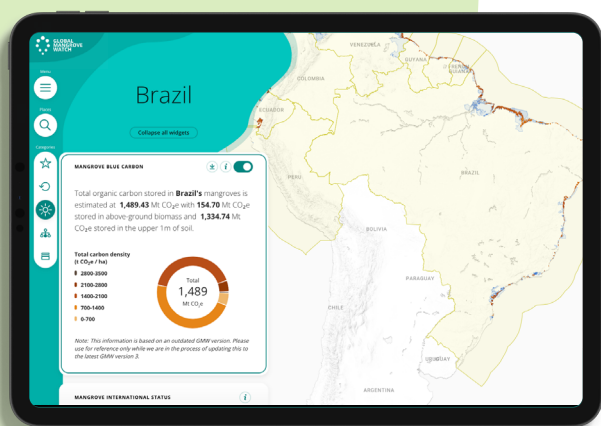
Mangrove Blue Carbon

With an established understanding of habitat coverage and change, governments need to know how much carbon these ecosystems store. This layer describes the quantity and density of carbon stored in mangrove biomass and soil at national and global scales with the best available science from a combination of remotely sensed measurements, and regionally-specific models, validated in-situ field data.[6] With this tool, governments can review carbon stocks, and include the contribution of national mangrove forests towards NDC targets.
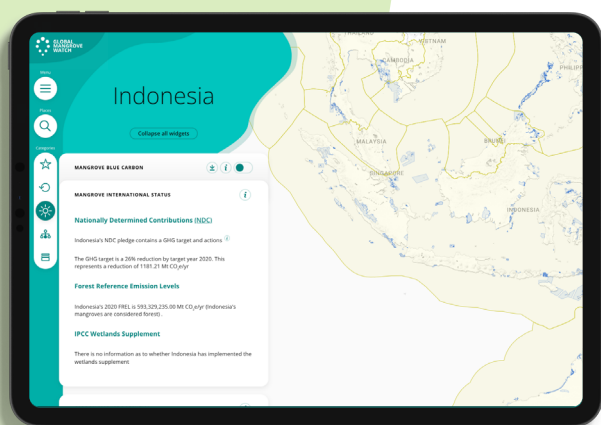
Mangrove international status

This layer of the GMW offers national status reports on integration of mangroves into international policy commitments with at-a-glance data on (1) whether coastal and marine nature-based solutions are included in a specific country's NDC; (2) if a country has specified implementing the IPCC Wetlands Supplement; and (3) if mangroves are considered in the national forest definition for engaging in REDD+. Collectively, this information allows governments to better understand the landscape of where other countries are already using coastal and marine nature-based solutions, and where there might be opportunities to enhance their use in national commitments.

[6] Simard et al. (2019), Sanderman et al. (2018), and Bunting et al. (2018).

Benefits & limitations of the GMW

The Global Mangrove Watch provides an effective means for periodic mapping and monitoring of mangroves over national, regional and global scales, in a uniform manner, with consistent data and classification algorithms for all areas and time frames.

This enables a more consistent and accurate comparison of extent between different countries and regions, as well as analysis of change trends over time, than comparing data obtained from different sources. While the Global Mangrove Watch can provide important input to wetland inventory, assessment and monitoring, knowledge of the local context and collection of in situ data remains critical for ensuring locally relevant outputs.

Conclusion

Nature-based Solutions – including the protection, conservation and restoration of mangrove and other blue carbon ecosystems – are an integral component for achieving the conservation and sustainable use of all wetlands through local and national actions and international cooperation.

The Global Mangrove Watch represents a critical tool, based on the most accurate science, to support countries in the process of setting targets, implementing commitments, and reporting progress to the Convention in support of national wetlands inventories, mangrove management, and restoration – as we move towards ratcheting up national and collective ambition on the protection and improved use of wetland ecosystems.

The Global Mangrove Watch is also a valuable resource for policymakers to assess **collective global progress** on mangrove restoration. Currently, the GMW maps are used as the official UN indicator to assess mangrove progress towards SDG 6.6.1 ("change in the extent of water-related ecosystems over time").

The GMW has also been proposed as the official dataset for reporting mangrove extent and changes under the UNFCCC Global Stocktake to support the world's collective progress towards achieving the Paris Agreement.

Further Reading

The <u>Global Mangrove Alliance</u> is a world-wide collaboration between NGOs, governments, academics and communities working together towards a global vision for scaling up the recovery of mangroves through equitable and effective expansion of mangrove protection and restoration, in order to build a host of opportunities for coastal peoples and biodiversity around the planet.

For more information about the Global Mangrove Alliance and the state of the world's mangrove ecosystems, see the State of the World's Mangroves Report 2022.
https://www.mangrovealliance.org/wp-content/uploads/2022/09/The-State-of-the-Worlds-Mangroves-Report_2022.pdf

For further information on the submission of National Reports to Ramsar Convention:
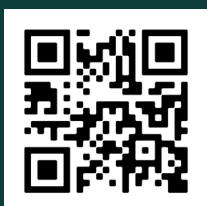**https://www.ramsar.org/sites/default/files/documents/library/key_rec_2.01e.pdf**

For more information on Resolution XIII.14 on promoting conservation, restoration and sustainable management of coastal blue-carbon ecosystems:
https://www.ramsar.org/sites/default/files/documents/library/xiii.14_blue_carbon_e.pdf

For more information on Ramsar's Fourth Strategic Plan 2016-2024:
https://www.ramsar.org/sites/default/files/hb2_5ed_strategic_plan_2016_24_e.pdf

For further information on the use of Earth Observation (EO) data for wetland inventory, assessment and monitoring:
https://www.ramsar.org/sites/default/files/documents/library/rtr10_earth_observation_e.pdf

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