

## **Submission by Wetlands International**

### **COP30 Presidency Invitation to Submit Contributions to the COP 30 Presidency Roadmap on Halting and Reversing Deforestation and Forest Degradation by 2030.**

**April 10th, 2026**

#### **Mangroves and forested peatlands**

This submission focuses on **mangroves** and **forested peatlands** to be included as key part of the Roadmap on Halting and Reversing Deforestation and Forest Degradation by 2030. While both ecosystems are terrestrial wetland ecosystems, they are also forests:

**Mangroves:** often called mangrove forests or swamps grow in intertidal zones along tropical and subtropical coastlines. They consist of salt-tolerant trees and shrubs that thrive in harsh, low-oxygen, mud-filled coastal areas where land meets the sea. They are found in over 120 countries, mostly in Southeast Asia, but also across Africa, Australia, and the Americas. They are characterized by complex root systems that act as "seawalls" against storm surges. act as fish nurseries, carbon sinks (storing up to 4x more carbon than terrestrial forests), and protect coastlines from erosion. They are not a single species, but an assembly of around 70–80 different tree and shrub species. Once lining vast swaths of tropical and subtropical coastlines throughout the Caribbean, South America, Southeast Asia, and Africa, only 14.7 million hectares of mangroves remain – half of their original extent.

While recent trends show a gradual decline in mangrove loss, protecting and sustainably managing the remaining forests is critical to ensure their long-term survival. At the same time, there is a major opportunity to restore mangrove ecosystems, particularly on lands once converted for aquaculture (such as shrimp and milkfish) and agriculture (including rice and palm oil) that later became unproductive and were abandoned. Restoration and management efforts must also account for climate change—for example, by allowing space for mangroves to migrate landward as sea levels rise.

**Peatlands:** Forested peatlands are globally significant ecosystems that regulate climate, conserve biodiversity and support water security. Formed under waterlogged conditions, they accumulate deep carbon-rich organic soils over thousands of years. Although they cover only around 3-4% of the Earth's land surface, they store up to one-third of the world's soil carbon —around twice as much carbon as all forests combined.

Yet around 12% of global peatlands have already been drained and degraded, mainly for forestry, agriculture and grazing. Once drained and deforested or degraded, they shift from long-term carbon sinks to major sources of GHG emissions. Around 50 million hectares of drained and degraded peatlands emit an estimated 2 Gt of CO<sub>2</sub>-eq. annually, or roughly 5% of global GHG emissions. Drainage also sharply increases fire risk –

especially in tropical Southeast Asia and increasingly in boreal regions – causing recurrent emissions and severe ecosystem damage. These pressures are further intensified by climate change, including rising temperatures, drought and permafrost thaw. Urgent action is needed: 1) preventing further drainage and conversion of forested peatlands and 2) restoring degraded areas through rewetting and ecosystem rehabilitation. Peatland restoration alone could reduce global GHG emissions by 4–5% by 2050. Protecting and restoring forested peatlands across tropical, boreal and temperate regions is therefore critical to achieving global climate and biodiversity goals.

Forested peatlands occur across all major climatic regions. In Southeast Asia (notably Indonesia and Malaysia), forested peatlands cover more than 20 million hectares. Large, largely intact and predominantly forested peatland areas are also found in the Congo Basin, with more than 27 million hectares, and the Amazon Basin in Peru, Brazil and Colombia, with more than 39 million hectares. Beyond the tropics, most peatlands are in boreal regions, particularly in Canada (119 million hectares) and the Russian Federation (139 million hectares), with additional significant areas in Finland (8 million hectares) and Sweden (7 million hectares). Many of these peatlands are forested and contain a significant share of global peat carbon (UNEP Global Peatlands Assessment 2022).

**Contributors are invited to submit concise inputs on one or more of the following questions:**

**(a) What are the most critical barriers — whether physical, economic, financial, institutional, technological or social — preventing the halting and reversing of deforestation and forest degradation?**

### **Mangroves**

A diverse community of mangrove professionals, including representatives from civil society, government and private sector, along with local communities, has worked to conserve and restore mangrove resources. Yet, across geographies, this community has encountered recurrent barriers that limit both the scalability and long-term sustainability of their interventions:

Scaling mangrove action is primarily constrained by **coordination failures, weak governance, knowledge gaps, and insufficient financing systems**, all of which reinforce each other.

#### **1. Fragmented collaboration and weak coordination**

Conservation organizations often work in isolation without coordinated strategies for driving change, limiting transformational impact across mangrove landscapes. For mangrove conservation to succeed, strategic collaboration is essential. This includes engaging local implementing organizations, grassroots and community groups, and

improving their access to international funding and training opportunities. At the same time, national and local stakeholders often remain disconnected, and representatives from civil society, government, and the private sector struggle to align their perspectives. Across mangrove landscapes, partners from the public and private sectors urgently need to join forces to strategize, align and implement their initiatives together to achieve shared goals.

## **2. Governance and policy challenges**

Jurisdictions and land ownership arrangements are often unclear in intertidal mangrove zones. Safeguards to prevent mangrove degradation or overexploitation are lacking. Unclear governance mandates cause inaction, funding gaps, stakeholder tensions, and conflict between resource users. Integral to this is a lack of understanding of threats to mangroves and their values, which has prevented ambitious goal-setting and the establishment of stringent regulations to prevent further declines. To help scale and sustain mangrove interventions, it is critical to integrate ambitious mangrove goals in policies, resolving jurisdictional barriers and integrating legislative safeguards that support the protection of mangrove resources.

## **3. Knowledge and implementation gaps**

Globally, understanding of mangrove trends, values, management and restoration approaches has grown, but knowledge gaps remain, especially in translating scientific findings into local implementation. This hampers the prioritization of interventions and the design of effective programs. Too often, scientific insights and lessons learned from field programs go undocumented. As a result, mangrove restoration projects continue to face high failure rates - up to 80% - wasting scarce conservation funds, while eroding confidence in restoration. Insights must be made accessible to policymakers and practitioners through guidance and effective public outreach. Peer-to-peer knowledge exchange and capacity-building programs should be tailored to end-users' needs and promote adaptive learning. Knowledge gaps must be addressed through applied research and consistent documentation so that lessons endure beyond individual projects.

## **4. Insufficient and poorly structured finance**

Today, despite a strong interest from financial institutions, mangroves and peatlands remain underfunded, despite a clear case for their restoration and conservation. The [Global Wetland Outlook 2025](#) reports a massive underinvestment in wetlands, with a required annual investment of USD\$275–550 billion needed to meet global biodiversity and restoration targets. While existing wetlands provide up to trillion in annual benefits, funding remains far below necessary levels, highlighting a critical, multi-hundred-billion dollar gap. Funding for peatland and mangrove restoration alone faces a gap of \$316 billion by 2050. Currently, biodiversity funding for all ecosystems is only 0.25% of global GDP, which is insufficient to reverse the loss of 400 million hectares of wetlands since

1970. There is an urgent need to secure increased funder commitments for mangroves and to channel these resources to high quality projects on the ground and to efforts to overcome overarching barriers to scaling current conservation and restoration efforts. Bridging this gap requires switching from solely public funding to leveraging private investment, such as green bonds and biodiversity credits, as part of national development strategies. Furthermore, there is limited access to funding local actors, and a lack of investment-ready projects and business cases, as well as a lack of strong, coordinated partnerships to connect funders to high-quality projects.

## **Peatlands**

The above barriers also apply to peatlands, but with some additional challenges. In summary:

- Peatlands are less known than mangroves, and are often treated as unused or marginal land, making them targets for conversion.
- Unlike mangroves peatlands are hardly integrated into national climate and land-use policies
- Peatlands are generally underprotected in all countries and these protections are often poorly enforced even where designated. Strong competing economic interests (commodities, infrastructure, extraction) hinder conservation.
- There is a lack of incentives, regulations and adequate governance to phase out drainage-based practices on peatlands across sectors (agriculture, forestry, water). Also, communities depend on drainage-based livelihoods, often agriculture focused. Sustainable alternatives like paludiculture (wet agriculture) are available, not yet widely proven or scaled.
- Similar to mangroves, restoration of peatlands is complex and context-specific. Globally and locally, there is limited technical capacity for peatland restoration, which can only be realised by rewetting.
- There is a need for improved mapping and monitoring of peatland extent and condition.
- There is a major funding gap for large-scale peatland restoration, which requires significant upfront investment, and for peatland conservation, especially because existing economic systems favour drainage-based production over sustainable alternatives. The Peatland Breakthrough (see below) identified the need to mobilize 100 billion USD as a bare minimum investment to operationalize conservation, restoration, and sustainable, wise use by 2030, far less than the USD 350 billion annual cost of global climate damage from drained and degraded peatland.
- Initiatives to restore and protect peatlands are fragmented and face a lack of landscape-level approaches
- There is a lack of coordination across government, communities, and private sector, and insufficient inclusion of local and Indigenous communities in decision-making.

**(b) What potential levers, whether economic, financial, institutional, social or technological, exist for accelerating the implementation of the commitment to halt and reverse deforestation and forest degradation?**

We call for **mangrove forests and peatland forests to be fully included in the Roadmap on Halting and Reversing Deforestation and Forest Degradation by 2030.**

Both mangroves and peatlands tend to be overlooked in the broader forest agenda. Both mangroves and forested peatlands are critical carbon sinks: peatlands contain up to one-third of the world's soil carbon, which is twice the amount of carbon as found in all other forest combined, while mangroves store up to 4x more carbon than terrestrial forests in their vegetation and soil. Keeping this carbon locked away is absolutely critical to achieving global climate goals. In addition, both mangroves and peatlands are vital for climate change adaptation: mangrove forests play an unparalleled role in coastal defense and protection against coastal erosion, while healthy, wet peatlands act as natural sponges, regulating water flow, preventing floods and droughts, cooling the atmosphere, and reducing fire risks. Furthermore, in many forest-rich countries millions of people depend on coastal and peatland forests for their livelihoods.

Global initiatives like **The Mangrove Breakthrough** and **The Peatland Breakthrough** are building a broader financial architecture designed to bridge the gaps and enable systemic transformation to protect and restore these ecosystems at scale.

**The Mangrove Breakthrough**, initiated by the High-Level Climate Champions and the Global Mangrove Alliance (led by The Nature Conservancy, Wetlands International, IUCN, Conservation International and WWF), is a global initiative to protect and restore over 15 million hectares of mangroves by 2030. It aims to halt loss, double protection, and restore at least half of recent degradation—mobilizing \$4 billion to get there. Endorsers join a global Community of Action working across sectors to accelerate action and investment to scale science-based mangrove solutions. Thus far, the initiative is endorsed by 48 national and subnational governments (representing around 60% of the world's mangroves), alongside ~60 non-state actors.

Key enablers to overcome critical barriers to mangrove conservation and restoration:

- **Mobilizing Mangrove Partnerships:** for mangrove conservation to succeed, strategic collaboration is essential. This includes engaging local implementing organizations, as well as grass roots and community groups in planning and program implementation. Equally important is improving access to international grant funding, which enables action on the ground. Such grant funding can also help create business cases and develop the financial instruments that attract private sector investment. The Global Mangrove Alliance is organizing and maintaining strong national Global Mangrove Alliance chapters that connect NGO's, private

sector and government stakeholders, grounded in the international collaboration space created by the Mangrove Breakthrough. This infrastructure enables the development and coordination of joint strategies, plans and initiatives for mangrove management, joint monitoring and evaluation, channelling of small grants to grassroots organizations to drive action on the ground and defining mangrove-positive business opportunities and incubating private sector finance.

- **Incubate finance and investments:** To bridge the funding gap for mangrove conservation and restoration, it is key to devise mechanisms that leverage a blend of grant funding, concessional finance and private sector investment to bridge the funding gap for mangroves. Grants can drive direct immediate action on the ground, and support the development of business cases that attract private sector capital, while supporting the derisking of investments. Sound financial frameworks can help incentivize action for mangroves and avoid unintended perverse incentives.

In 2023, the Mangrove Breakthrough and the Global Mangrove Alliance published the Financial Roadmap, a blueprint to assess immediate funding needs and financial strategies required to reach the global goals. The roadmap calls for deploying a mix of funding sources and financing instruments to mobilize approximately 4 billion USD over the next few years. The Mangrove Breakthrough is currently building a broad financial architecture designed to bridge the gaps and enable systemic transformation, framing financing of mangroves as a strategic decision to safeguard nature, reduce risks, protect coastal economies, and build long-term resilience. This architecture integrates four core elements: the Mangrove Transition Bond Series to mobilize regional capital, the Mangrove Catalytic Facility to drive project bankability, a Digital Mapping and Monitoring Platform for real-time validation, and Curated Investment Showcases to connect verified projects with capital. Together, these components provide the structural 'pipes' and valuation frameworks necessary to transform mangroves from a conservation goal into a high-performance, investable asset class.

The Global Mangrove Alliance has started with the development of a project pipeline, which connects funders with an interest in mangrove conservation and restoration to high-quality projects that are developed and implemented by national and local NGOs, private sector partners, government agencies, as well as community groups. This approach aligns funds with priority areas and interventions while nurturing a community of mangrove professionals across sectors and disciplines to scale up best practice approaches. [Mobilizing the Mangrove Breakthrough Regional Reports, and Country Propositions.](#)

- **Enhance policies and governance:** Building an enabling environment for mangrove conservation and restoration is crucial to scale up successful interventions and

sustain them in the long term. This can be achieved by integrating ambitious mangrove goals into government and private sector policies, plans, legislation, practices and investment frameworks, and resolving jurisdictional barriers.

- **Knowledge, awareness and capacities:** Insights in mangrove trends, values, best practice management and restoration approaches, translating scientific findings into implementation, must be made accessible to policy makers and practitioners through guidance and effective public outreach. Peer-to-peer knowledge exchange and capacity building programs should be tailored to end-users' needs and promote adaptive learning. Knowledge gaps must be addressed through applied research and consistent documentation so that lessons endure beyond individual projects.
- **Drive action on the ground:** For translating global ambitions into action on the ground, it is essential to mobilize stakeholders from various disciplines to connect their interventions across mangrove landscapes and build on each other's strengths, facilitating lasting, transformational change. Specifically this can be achieved by uniting key stakeholders in strong landscape-level partnerships, to ensure joint planning and that support protection of mangrove resources will help scale and sustain interventions. These partnerships can develop landscape-level management plans in selected landscapes with local partners, that include conservation measures, large-scale adoption and implementation of Community-based Ecological Mangrove Restoration, and supporting the development of mangrove-positive businesses and sustainable livelihoods.

[The Peatland Breakthrough](#) is a global call for action to upscale and accelerate action to support the conservation and restoration of peatlands, in order to reduce emissions, support removals, enhance resilience, and strengthen pathways aligned with the goals of the Paris Agreement. The Peatland Breakthrough is led by Wetlands International, the United Nations Environment Programme, the Food and Agriculture Organization of the United Nations, the Greifswald Mire Centre, developed in close alignment with the Global Peatlands Initiative, and in collaboration with the Convention on Wetlands. The initiative is part of the 2030 Breakthrough Agenda, and a 2030 Climate Solution under the Marrakech Partnership. The Peatland Breakthrough unites governments, Indigenous Peoples, local communities, land managers (e.g. farmers, foresters, or other rural land-dependent groups), landowners, businesses, researchers, investors, and civil society around shared global targets and guiding principles.

The Peatland Breakthrough aims to 1) Halt the anthropogenic loss of undrained peatlands by 2030 2) Restore at least 30 million hectares of degraded peatlands by 2030 3) Create the enabling conditions for sustainable, wise use of peatlands by 2030, and ensure that wise use is implemented on all peatlands by 2050 4) Reach net zero emissions by 2050, through targets 1,2 and 3) and 5) Mobilize \$100 billion to get there by

2030 and 6) ensure that all countries with significant peatlands have national peatland inventories and monitoring systems.

For peatland conservation and restoration at scale, the following enablers can be identified to overcome barriers:

- **Integration of peatlands in national policies and plans:** Increasing awareness about the climate, biodiversity, and water regulation benefits of peatlands is needed to encourage governments to prioritize peatland conservation in national climate and biodiversity strategies and robust legal protection policies that recognise Indigenous and local land rights, to unlock both policy attention and finance. Besides in climate strategies, peatland conservation and restoration should be integrated into broader land use planning. Sectoral policies should promote wet peat agriculture and other sustainable land-use practices that do not involve draining peatlands, and develop sustainable supply chains for peat-free products and ecosystem services that support communities living in peatland areas.
- **Increased finance:** Unlock finance through international climate funds and green finance to support large-scale peatland restoration projects, and encouraging collaboration between governments, businesses, and NGOs to fund peatland conservation and restoration at scale through joint financial mechanisms. Leveraging carbon finance provides an opportunity to make conservation and restoration economically viable and attractive to stakeholders. Promoting paludiculture and other wetland-friendly agricultural systems can create financial incentives for communities to engage in sustainable peatland management.
- **High quality project development:** Finance should be connected to well-coordinated multi-stakeholder partnerships that develop high-quality projects that adopt a landscape-scale approach to conserve and restore entire peatland ecosystems rather than isolated projects, and that empower and engage local and Indigenous communities.
- **Knowledge and capacity building:** while knowledge gaps shouldn't delay any action to protect peatlands, there is a need to strengthen the technical capabilities of local actors and practitioners to implement rewetting, vegetation restoration, and other technical interventions effectively. Furthermore, there is a need to develop robust monitoring systems and data sharing on peatland conditions, restoration successes, and failure rates, to enhance adaptive management and build confidence in restoration, complimented by applied research and tools to enhance peatland restoration and management.

**(c) What country, regional or sector experiences, best practices, and lessons learned can be shared regarding forest conservation and restoration?**

Both The Mangrove Breakthrough and the Peatland Breakthrough have adopted Guiding Principles to promote best practices and lessons learned that can be shared to ensure high-quality, impactful, and equitable mangrove forest conservation and restoration. These are available here: [Mangrove Breakthrough principles](#); [Peatland Breakthrough Principles](#). All countries and entities that join these Breakthroughs endorse these principles.

To support countries in scaling up mangrove restoration and conservation, several tools were developed by the Global Mangrove Alliance:

**Best Practice Guidelines for Mangrove Restoration**

These guiding principles were developed and informed in partnership with the Global Mangrove Alliance (GMA). The GMA developed the [Best Practice Guidelines for Mangrove Restoration](#) that brings together the latest accumulated local and scientific knowledge about mangrove restoration best practices into one comprehensive resource, ensuring best practices for restoration are science-based and inclusive. These provide step-by-step guidance on best practices for every phase of the mangrove forest restoration project cycle - project design, funding and implementation. These mangrove forest restoration experiences are centred on well-established community-based ecological restoration approaches that enhance restoration success and longevity.

The best practices shared in the GMA guidelines move away from single-species mass tree-planting, which fails to restore functional mangrove forests, to inclusive ecological restoration approaches. This process of effective mangrove restoration is nuanced, complex and site-specific and requires coordinated project design.

Operating in the local context, including cultural customs, resource use, management and ownership regimes, while taking a land and seascape approach and aligning with international trends and their local implications.

Restoration and conservation actions should purposefully strive for positive biodiversity impacts. Instead of hoping that an area and services can be fully restored later, conserve what is there now. When you do need to restore, instead of planting monocultures, aim for restoring a mangrove ecosystem with multiple species, natural hydrological flows, and natural zonation.

A biodiverse mangrove ecosystem has a greater variety in root types, tree sizes, foliage, and fruits, thus fulfilling different functions and attracting diverse fauna. This results in the provisioning of multiple goods (timber, fodder, honey, fruits, and fish) and services (enhanced coastal protection, carbon storage, water purification, fisheries enhancement). Such mangroves are also likely to be more resilient to climate change.

## Global Mangrove Watch

Mangrove remote sensing platforms can equip policymakers, mangrove practitioners, and investors with comprehensive, up-to-date mangrove data for the effective design, financing, and implementation of mangrove initiatives. [The Global Mangrove Watch](#) (GMW) is an online platform developed by Aberystwyth University, soloEO, Wetlands International, the Nature Conservancy, JAXA, NASA, and the GMA that provides near-real-time data on mangrove cover and change, giving governments, funders, and communities a common picture of where change is happening, where interventions are needed and whether these are working. The GMW platform can support governments and practitioners to integrate mangrove-positive commitments into their climate mitigation, adaptation, biodiversity and development plans, report on them, translate their commitments into priorities on the ground and monitor difficult-to-access coastlines regularly and consistently. With high-resolution information on cover change, soil carbon, living biomass, canopy height and other parameters, Global Mangrove Watch also gives coastal and park managers, conservationists, policymakers and practitioners the evidence needed to respond to illegal logging and pinpoint the causes of local mangrove loss and track conservation progress. With its consistent mapping approach, GMW also enables transparency—supporting year-by-year progress tracking, comparisons across countries and regions, and clear accountability to funders and communities.

The Global Mangrove Watch provides the shared baseline and monitoring system for the Mangrove Breakthrough, underpinning its goals to halt mangrove loss, restore half of what has been lost, and double the area protected by 2030, while unlocking \$4bn in sustainable finance to deliver these objectives.

There are several resources available to guide countries to protect and restore peatlands, including:

**Greifswald Mire Center, 2024. Global Peatland Map 2.0.** [Global Peatland Map \(GPM 2.0\)](#) as part of **The Global Peatlands Database.** [Global Peatland Database - Greifswald Mire Centre](#)

**UNEP, 2024. Global Peatland Hotspot Atlas: The State of the World's Peatlands in Maps - Visualizing Global Threats and Opportunities for Peatland Conservation, Restoration, and Sustainable Management.**

<https://wedocs.unep.org/bitstreams/48c6a874-8208-4302-baf7-dd8019aa13ed/download>

**UNEP. 2022. Global Peatlands Assessment** - The State of the World's Peatlands: Evidence for action toward the conservation, restoration, and sustainable management of peatlands. Main Report. **Global Peatlands Initiative. United Nations Environment**

**Programme**, Nairobi. <https://www.unep.org/resources/global-peatlands-assessment-2022>

**Convention on Wetlands. 2021. Global guidelines for peatland rewetting and restoration.** Ramsar Technical Report No. 11. Gland, Switzerland: Secretariat of the Convention on Wetlands. [tr11\\_peatland\\_rewetting\\_restoration.pdf](#)

**(d) How can forest conservation, sustainable management, and restoration best reflect the diverse realities of countries at different stages of development, the rights and knowledge of indigenous peoples and local communities, and different degrees of forest cover?**

We recommend implementing, in all aspects of project design, social safeguards to protect and enhance community member rights, knowledge, and leadership to achieve fair and equitable benefit sharing.

Mangroves and peatlands provide essential services to protect and sustain communities, including ensuring water quality, food and materials provision, livelihoods, climate mitigation, and climate adaptation. Local actors – and their representative institutions – need to be capacitated to meaningfully engage and advocate for their needs in all aspects of a project, including design, implementation, and policy dialogues. The project governance structure needs to facilitate participation and decision-making as well as fair and equitable benefit sharing.

Local ecological knowledge (LEK) can provide vital information to develop mangrove and peatland conservation and restoration efforts with greater potential for long-term outcomes. Recently, the Global Mangrove Alliance (GMA) published The LEK Best-Practice Guide, which detailed how researchers have examined or incorporated LEK, projects demonstrating numerous ways that LEK improves conservation, and guidance to engage ethically with LEK holders.

Despite growing interest in LEK, little guidance existed before this publication to assist researchers and practitioners in engaging with this knowledge ethically and holistically. The Mangrove Breakthrough encourages wider inclusion of LEK in mangrove research and projects by: 1. Raising awareness of the variety and scope of LEK about mangrove ecosystems. 2. Highlighting the value that LEK can bring to mangrove conservation and restoration. 3. Encouraging increased engagement of LEK in projects. 4. Emphasizing the importance of equitable collaboration.

Successful mangrove and peatlands interventions integrate existing and future livelihood opportunities from the start. When communities benefit directly from protected and restored ecosystems, they are more likely to protect them for the future. Cash-for-work planting alone rarely secures long-term care. Mangroves, for example,

can offer many tangible benefits to local communities, some of which can be monetized, such as ecotourism, wild capture fisheries and provision of food and fodder. Restoration and conservation could aim to create a mangrove-based economy that optimizes such mangrove benefits while avoiding overexploitation and introducing alternative livelihoods that do not degrade mangroves. Wealth acquisition should be aligned with nature's capacity, and it needs to take into consideration the aspirations of equitable societies. A similar pattern applies to peatlands.

Using the best available science-based knowledge, including indigenous, traditional, and local knowledge, for mangrove and peatland forest conservation and restoration. Make use of the best available science, including lab and field-based measurements as well as traditional and local knowledge and experiences that has often been developed and refined over centuries. Convene a multi-disciplinary and multi-sectoral team to help integrate biophysical as well as socio-economic aspects and to ensure different stakeholder perspectives are represented and addressed.