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# Post-2020 Global Biodiversity Framework : Ensuring protection and restoration of Inland Waters

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# Post-2020 Global Biodiversity Framework: Ensuring protection and restoration of Inland Waters

## Key messages

- Explicit inclusion of **inland water ecosystems** in Post-2020 Global Biodiversity Framework (GBF) goals, targets, and indicators is required to restore and safeguard these most threatened and least protected ecosystems and biodiversity on the planet.

- Goal A must ensure that the ecological integrity, area, connectivity and resilience of natural terrestrial, **inland water**, coastal and marine ecosystems increase by 2030 and are fully restored by 2050.

- Target 1 must ensure that "all terrestrial, **inland water**, coastal and marine areas" are included within biodiversity-inclusive participatory spatial planning or other effective management processes.

- Target 2 must include numerical ecosystem-specific objectives for progress to be measured against and to avoid inland water ecosystems being neglected within an overall percentage for terrestrial ecosystems. For **inland water ecosystems** this should be at least **350 million hectares** and **300,000 km of rivers** under restoration by 2030.

- Target 3 needs to ensure that at least 30 per cent, globally, of terrestrial, **inland water,** coastal and marine areas, respectively, are conserved.

- **Inland water ecosystems** are key to climate mitigation, adaptation and disaster risk reduction and their improved condition is necessary to provide vital connectivity between all ecosystems through their physical, chemical and ecological processes.

## Relevant outcomes of the fourteenth Conference of the Parties (COP14) of the Ramsar Convention on Wetlands

The 14th Conference of the Contracting Parties to the Ramsar Convention on Wetlands (Ramsar COP14) adopted the Resolution 18.8 on "Enhancing the Convention's visibility and synergies with other multilateral environmental agreements and other international institutions".

In this Resolution, Contracting Parties call on those that are also Party to the Convention on Biological Diversity (CBD) to: "enable the adequate recognition of wetlands in the goals, targets and indicators of the post-2020 Global Biodiversity Framework."

This resolution also recognises the importance of Ramsar sites for implementing the CBD and the Post-2020 GBF; requests the Scientific and Technical Review Panel (STRP) to engage with the CBD for the development of appropriate inclusion of wetlands within the indicators and monitoring framework of the post-2020 Global Biodiversity Framework; and emphasises the benefits of mainstreaming wetland conservation, restoration, and wise use in National Biodiversity Strategies and Action Plans (NBSAPs).

The use of the term inland waters in the CBD corresponds to the definition of wetlands in Article 1.1 of the Ramsar Convention: "areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres." Under both Conventions, the depth limit applies only to coastal areas[1]. The terms wetlands and inland waters may therefore be used interchangeably. They include water bodies like rivers, lakes, ponds, marshes, swamps, peatlands and other wetlands, including those located in coastal areas and adjacent to marine environments[1].

Adequate recognition of inland waters or wetlands in the text of the GBF, especially in Targets 1, 2 and 3, is critical to addressing the risk that inland waters are neglected when it comes to implementation.

In addition, Resolution 18.20 on "The protection, conservation, restoration, sustainable use and management of wetland ecosystems in addressing climate change" was also adopted at Ramsar COP14, which encourages Contracting Parties to deploy wetland-focused nature-based solutions or ecosystem-based approaches to address climate change, while simultaneously providing biodiversity and human wellbeing benefits. This was echoed in the UNFCCC COP27's Sharm El Sheikh Implementation Plan, which emphasises the importance of protecting, conserving and restoring water-related ecosystems, and urges Parties to further integrate water into adaptation efforts. These both highlight the importance of including inland waters in addressing climate change, and wider synergies.

## Why the Global Biodiversity Framework must include inland waters

Although now only accounting for around 6% of the Earth's surface area, the diversity of life sustained by wetlands is disproportionately high, with approximately 40% of all known plant and animal species living or breeding in inland waters[2, 3].

Despite their importance, inland water ecosystems have seen the greatest loss and degradation of the three realms, with more than 80% of inland waters lost compared to 70% of terrestrial area transformed, and 60% of oceans impacted[1]. This ecosystem loss and degradation have seen a decline on average of 83% in freshwater species populations since 1970, compared to 36% marine and 38% terrestrial[4].

Inland waters have been lost through infilling and drainage for conversion to agriculture and urban settlements. They have been heavily degraded due to pollution, alterations to water regimes, fragmentation, and over-extraction of natural resources and are increasingly impacted by climate change.

Natural inland waters include all habitats that naturally occur through physical, chemical and ecological processes. These are distinct from human-made inland waters that have been built by humans for a specific purpose such as rice paddy, water storage, water treatment or recreation.

To achieve the overall goal for 2030 of reversing biodiversity loss, it is crucial to protect the role played by natural inland waters as critical habitats and in maintaining processes which underpin biodiversity. These processes include hydrological, biogeochemical, primary productivity and energy flow. Natural inland water processes provide physical, chemical and ecological transfers and connectivity to support biodiversity in all ecosystems.

In addition, as reported in the 2018 and 2020 Global Wetland Outlook reports and noted in Resolution 18.20, coastal wetlands sequester carbon up to 55 times faster than tropical rainforests, peatlands cover only 3% of the earth's land surface but store 30% of all land-based carbon, and degraded wetlands can contribute to greenhouse gas emissions with drained peatland responsible for about 4% of global emissions, making inland water ecosystems critical for climate action and synergies with other global targets on climate and people[3].

Inland waters featured in the Strategic Plan for Biodiversity 2011-2020 Target 11, however this group of ecosystems was not given the attention needed in the national targets, as highlighted by the Assessment of Progress towards Aichi Target 5 and 15 released by the CBD secretariat in 2016[5]. This indicates that we cannot allow inland waters to be neglected in the GBF. While targets should be representative of the diversity of all natural ecosystems, the risk of overlooking inland water ecosystems persists, if the post-2020 GBF does not explicitly mention them, as suggested in Informal group proposals, especially in Goal A, Target 1, Target 2 and Target 3.

## Target 1 – Spatial planning

To adequately recognise the essential role of inland waters in halting and reversing global biodiversity loss, inland waters must be included within biodiversity-inclusive participatory spatial planning or other effective management and governance processes alongside terrestrial and marine areas. It is essential that all intact inland water ecosystems, including rivers, and areas of high biodiversity importance, including current and proposed Ramsar Sites of International Importance, are retained and the further loss of natural inland water ecosystems is halted.

## Target 2 - Ecosystem restoration

Target 2 on ecosystem restoration must include ecosystem-specific objectives for the restoration of a variety of ecosystems and must use several rather than one single metric to define the level of ambition for global ecosystem restoration efforts[6].

Target 2 should set an ambitious objective on restoration, beyond existing commitments, that would help ensure a nature-positive world is delivered by 2030.

Inland water restoration objectives must include the loss of inland water ecosystem area, when they have been converted to non-inland water ecosystems (inland waters extent), the degradation of remaining inland water ecosystems (inland waters condition) and disruption of hydrological connection (connectivity and flow).

### Restoring inland water area lost

The Wetland Extent Trends (WET) Index is the most recent and accurate data source for understanding inland waters loss [7, 8]. This collates information using over 2,000 time-series data from 1970 to 2015 and suggests a decline of about 35% in natural inland water area. In 2015, remaining natural inland waters were approximately 1,210 million hectares suggesting a loss of 715 million hectares.

To develop an inland waters sub-target for loss restoration, the WET Index was extrapolated until 2022, assuming the rate of decline over the last ten years of the trend index (2006-15) continued. For 2022, it was calculated that 976 million hectares of inland waters remain, with a loss of 949 million hectares. A restoration target that reverses 30% of the inland waters area that has been lost equates to restoring 285 million hectares.

### Restoring existing degraded inland waters

Two Global Wetland Surveys undertaken in 2017 and 2020 provide data on inland water condition. These found that 24.2% and 22.8% of inland waters were in a poor state [9, 10].

To develop a target for restoration of degraded inland waters, an average of the two surveys of 23.5% was used, to indicate the percentage of inland waters that would be classified as degraded. Using the 2022 area data, from the WET Index calculations, the total area of inland waters is calculated at 975 million hectares. 23.5% of the total inland water area (229 million hectares) is therefore currently degraded. A 30% target, of the 229 million hectares, for restoring degraded inland waters equals 69 million hectares.

| Type of impact | Area (Mha) | 30% restoration (Mha) |
|---|---|---|
| Inland water loss[11] | 949.2 | 285 |
| Inland water degradation[12] | 229 | 69 |
| | **Total** | **354** |

**Restoring inland water connectivity**

Disruption to inland waters hydrological connectivity is one of the main threats to freshwater ecosystem integrity and has severe impacts on biodiversity. River or fluvial connectivity extends in four dimensions: longitudinally (up - and downstream in the river channel), laterally (between main channel, floodplain, and riparian areas), vertically (between groundwater, river, and atmosphere) and temporally (natural flows that include seasonal variations, transport of sediment, and other organic materials)[13, 14]. A Connectivity Status Index (CSI) is available to measure river connectivity at the global, national and river basin scales and indicate where restoration may be needed[14]. To restore river connectivity, restoration is best monitored in linear units (km) given the linear nature of river systems. To arrive at a target number, we calculated 30% of the total river kilometres of impacted river reaches (CSI < 95%). Using this methodology, the global target for restoration of transformed to natural river reaches is at least 300,000 kilometres.

| Length Impacted (Km) | 30% (Mha) |
|---|---|
| 1.045.599 | 313.680 |
| Inland water degradation[12] | 69 |

**The objectives for inland water restoration**

Combining sub-targets for inland waters loss and degraded inland waters, an ecosystem restoration target for inland waters of at least 350 million hectares and the restoration of

300,000 km of rivers is proposed to restore hydrological and ecological connectivity and set out in more detail in our complementary briefings [15, 16].

## Target 3 - Conservation through Protected Areas and Other Effective Area-Based Measures

For the reasons detailed above, we must aim at conserving at least 30% of inland waters and explicitly include these ecosystems in Target 3. This means specifying that at least 30% of terrestrial, inland waters, marine and coastal areas are conserved through effectively managed, ecologically representative, well-connected, and equitably governed protected areas and other effective area-based conservation measures (OECMs)[17].

A globally comprehensive set of inland water specific Key Biodiversity Areas, including Ramsar Sites of International Importance, should be delineated and listed to capture areas of particular relevance for biodiversity.

To measure progress on the inland water component of Target 3, development of an accurate baseline of inland waters in protected and conserved areas is essential, along with agreed indicators of change.

A global expert consortium[18] is working together to develop a readily implementable methodology that uses best available data to define the global extent of inland waters and to track coverage in protected areas and OECMs, including Ramsar Sites of International Importance. There is commitment to develop a method that is simple, has clear caveats, and can serve as a foundation that can accommodate growth and complexity over time. More details are provided in our complementary briefing.[19]

## Mitigating and adapting to climate change

Inland waters are critically important in all of climate mitigation, adaptation and disaster risk reduction, and therefore should be adequately recognised in terms of climate action. Given views vary on the use of the term and concept 'nature-based solutions', Parties to the CBD could consider the wording agreed by Ramsar Contracting Parties in Resolution 18.8[20], following extensive contact group discussions, which recognises "that nature-based solutions, as defined by the Fifth United Nations Environment Assembly, and ecosystem-based approaches, as identified under the Convention on Biological Diversity, delivered by wetland ecosystems, are among the approaches that can significantly contribute to climate action, while simultaneously providing biodiversity and human wellbeing benefits and addressing other social, economic and environmental challenges".

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[11] Calculated using the Wetland Extent Trends (WET), which is Index is the most recent and accurate data source for understanding inland waters loss. This collates information using over 2,000 time-series data from 1970 to 2015, subdivided by region and habitat type. To develop an inland waters sub-target for loss restoration, the WET Index was extrapolated until 2022, assuming the rate of decline over the last ten years of the trend index (2006-15) -14% for non-coastal natural inland waters and 10% for natural coastal waters- continued.

[12] Calculated using two Global Wetland Surveys undertaken in 2017 and 2020. These surveys mostly covered different wetlands, with only 9% of those featuring reported on in both the 2017 and 2020 surveys. This demonstrates that the poor state percentage has remained broadly consistent across different wetland examples. To develop a target for restoration of degraded inland waters, an average of the two surveys of 23.5% was used, to indicate the percentage of inland waters that would be classed as degraded.

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