

# CONNECTING NATURE TO SUSTAIN LIFE



**Ecological connectivity is one of the most effective pathways to halt and reverse biodiversity loss, increase resilience to climate change and reverse land degradation to safeguard the delivery of ecosystem services and secure a sustainable future for all.**

We are facing a planetary crisis that threatens our ecosystems, economies and shared future. Biodiversity loss, climate change and land degradation are interconnected consequences of a fragmented planet which are accelerating faster than our collective response.

The increasing fragmentation of terrestrial, inland waters<sup>1</sup> and coastal<sup>2</sup> and marine ecosystems across the world disrupts the movement of species, limits genetic exchange, and weakens the ability of ecosystems to adapt to environmental stressors, including climate impacts. It also inhibits essential ecological processes such as pollination, seed dispersal, water regulation and nutrient cycling. Smaller, isolated ecosystem patches are less stable, productive and able to support both nature and humans. Addressing this challenge requires a unified response, one that recognises connected land- and seascapes as fundamental to achieving our common global objective of a thriving planet.

Transitioning towards a more connected planet is not only an environmental priority but also an economic and social one, given its role in supporting human livelihoods and food security, enhancing climate change resilience and disaster risk reduction and through the benefits connected nature provides for human health and well-being. Maintaining, enhancing and restoring ecological connectivity offers a practical solution to simultaneously advance biodiversity conservation, climate change resilience and the provision of the ecosystem services on which humans depend.

## A GUIDE TO ACTION

STRONGER CONNECTIVITY | HEALTHIER ECOSYSTEMS | A MORE SUSTAINABLE FUTURE



### National and Sub-national Governments



**Embed** Connectivity into National Commitments



**Develop** or Strengthen National Legislation on Connectivity



**Mainstream** Ecological Connectivity into National Development Planning and Policy



**Strengthen** Transboundary and Cross-Sectoral Collaboration



**Scale Up** Connectivity in Spatial Planning



**Invest** in Connectivity Conservation and Restoration



**Redirect** Harmful Subsidies and Incentives



**There is overwhelming evidence that we have reached a critical turning point, where our actions will determine the future health and resilience of all life on Earth.**

While significant action is already taking place across the globe, there is an urgent need to shift from fragmented to coordinated actions that respond to the crisis through collective and integrated solutions. Recognising that achieving a thriving planet for all requires strong political will, collective ambition, coordinated action and strategic investment that recognises ecological connectivity as fundamental to all life on Earth, the Global Partnership on Ecological Connectivity encourages the infrastructure sector to contribute to a healthy and connected planet through the voluntary sector-specific actions outlined in this guide to action.

<sup>1</sup> Aquatic-influenced environments located within land boundaries and can be fresh, saline or a mix of the two (brackishwater). They include lakes, rivers, ponds, streams, groundwater, springs, cave waters and floodplains, as well as bogs, marshes and swamps, which are traditionally grouped as inland wetlands.

<sup>2</sup> Intertidal wetlands and ecologically associated habitats including intertidal flats, seagrass beds, mangroves, bivalve (shellfish) reefs and associated coastal (littoral) habitats ecologically linked to these areas.

**National and Sub-national Governments** play a central role in recognising ecological connectivity as a key component of implementation across the Rio Conventions and other international environmental commitments, including the Convention on Migratory Species, and can support coordinated action to:

## 1. Embed Connectivity into National Commitments

- 1.1 Integrate ecological connectivity into National Biodiversity Strategies and Action Plans (NBSAPs), Land Degradation Neutrality (LDN) targets and Nationally Determined Contributions and Adaptation Plans (NDCs/NAPs).
- 1.2 Integrate connectivity considerations into species action and recovery plans, climate mitigation and adaptation strategies, marine spatial planning, disaster risk reduction, and sustainable development plans.

## 2. Develop or Strengthen National Legislation on Connectivity

- 2.1 Adopt legislation that recognises and designates terrestrial, inland water (especially wetlands), and coastal and marine ecological corridors and networks<sup>3</sup>, and require them to be managed in ways that allows the movement of species and ecological processes under a changing climate (for example, through careful land- and seascape-use planning and zoning, including coastal zone planning, that safeguards connectivity through designated ecological corridors).

## 3. Mainstream Ecological Connectivity into National Development Planning and Policy

- 3.1 Enshrine connectivity as a binding principle in national planning and policy.
- 3.2 Require infrastructure, agriculture, fishery, energy, urban and other development projects to incorporate ecological connectivity and nature-positive design in their developments, avoiding the disruption of ecological corridors and the fragmentation of habitats.
- 3.3 Adopt practices that maintain, enhance and restore connectivity across terrestrial, inland waters and marine and coastal ecosystems.
- 3.4 Develop and implement policies and plans that promote and adequately fund effective safeguards for ecological connectivity in infrastructure projects, especially linear infrastructure projects such as the development of roads, railways, hydropower plants, canals, transmission lines and pipelines.
- 3.5 Apply the mitigation hierarchy, with a strong emphasis on avoidance, to achieve the best possible safeguards for ecological connectivity. Where avoidance is not possible, safeguard connectivity by ensuring that practical, proven strategies and techniques (e.g. wildlife crossings) are implemented to reduce direct wildlife mortality and the impacts of fragmentation caused by linear and other barriers to ecological connectivity.
- 3.6 Incorporate ecological connectivity into environmental, social and governance (ESG) frameworks, risk assessments and disclosure mechanisms to improve transparency and accountability.
- 3.7 Identify, recognise, report and support the establishment of protected areas and other effective area-based conservation measures (OECMs) with the specific function of connecting pre-existing protected areas.

## 4. Strengthen Transboundary and Cross-Sectoral Collaboration

- 4.1 Strengthen regional agreements and cooperative frameworks to manage shared ecosystems for ecological connectivity.
- 4.2 Align infrastructure, agriculture, energy, urban and other sectors' development planning with ecological connectivity needs.

## 5. Scale Up Connectivity in Spatial Planning

- 5.1 Work collaboratively with scientific and conservation actors, as well as Indigenous people and local communities, to undertake participatory processes for the identification and designation of existing and potential ecological networks and corridors.

---

<sup>3</sup> IUCN Guidelines for conserving connectivity through ecological networks and corridors (Hilty et al., 2020) Definition: A system of core habitats (protected areas, OECMs and other intact natural areas), connected by ecological corridors, which is established, restored as needed and maintained to conserve biological diversity in systems that have been fragmented.

- 5.2 Establish new networks and corridors, and integrate identified terrestrial, wetland, and blue networks and corridors into national, regional and local spatial planning processes, ensuring planning decisions enhance and do not impede ecological connectivity.
- 5.3 Move beyond the design, designation and establishment of isolated protected areas towards well-connected, resilient and coherent ecological networks, which include transboundary corridors, transnational flyways and swimways, Indigenous and community-conserved areas and other effective conservation measures, among others.

## 6. Invest in Connectivity Conservation and Restoration

- 6.1 Increase financial flows for ecological connectivity conservation and restoration.
- 6.2 Direct conservation and restoration efforts strategically, for example in terrestrial, inland water, and coastal and marine ecological corridors and flyways and swimways, to connect and/or reconnect fragmented habitats.
- 6.3 Recognise the maintenance, enhancement and restoration of ecological connectivity as an essential **nature-based solution** that secures long-term ecological function and builds climate resilience for nature and people.
- 6.4 Include connectivity conservation and restoration across national budget allocations as a cross-cutting priority.

## 7. Redirect Harmful Subsidies and Incentives

- 7.1 Phase out and/or reform policies and subsidies that drive habitat fragmentation.
- 7.2 Incentivise maintaining, enhancing and restoring ecological connectivity through economic subsidies, fiscal benefits, recognition or other measures and land and marine use practices.



**The cross-cutting importance of ecological connectivity has been increasingly recognised and incorporated into a range of global commitments and serves as an implementation bridge across the Rio Conventions.**

### Key Global Commitments Relevant for Ecological Connectivity

**CMS** -Resolution 14.16(Rev.COP15) on *Ecological Connectivity*

**CBD** - *Kunming-Montreal Global Biodiversity Framework*- Goal A, Target 1.Target 2, Target 3 and Target 12

**UNCCD** - *Land, Life and Legacy Declaration*

**The Convention on Wetlands** - *Fifth Strategic Plan of the Convention on Wetlands 2025-2034* (Resolution XV.3-Goal 3)

**Agreement under the United Nations Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of Areas beyond National Jurisdiction (BBNJ Agreement)** - *Annex 1 of agreement-*

Ecological connectivity as a criterion for identifying important areas

**International Union for the Conservation of Nature** – Resolutions *Wildlife-friendly linear infrastructure and*

*Recognising and Reporting Ecological Corridors*

### Learning Platforms

#### Connectivity 101: Ecological Connectivity for People and Planet (Learning4Nature)

<https://www.learningfornature.org/en/courses/connectivity-101-ecological-connectivity-for-people-and-planet/>

*A self-paced course teaching the basics of ecological connectivity conservation. The course presents general and replicable best practices for connectivity conservation and context-sensitive case studies worldwide.. A certificate is awarded to those who complete the course. Currently, the course is offered in English only.*

#### NaturaConnect Learning Platform (2026) <https://tinyurl.com/ENA-NC>

*This self-paced training course developed by the NaturaConnect project offers a range of resources and training modules to enhance professional competences for planning and implementing the Trans-European Nature Network (TEN-N). Key connectivity-specific modules include Module 1.4. Connectivity Conservation, covering core concepts and methods, and Module 3.3. Connectivity Analyses focusing on least-cost path and circuitscape models commonly used in conservation planning*



## USEFUL RESOURCES

- 2025:** Legislative Guidance for Maintaining, Improving, and Restoring Ecological Connectivity. (CMS)
- 2024:** Global Land Outlook Thematic Report Ecological Connectivity an Essential Component in Ecosystem Restoration. (UNCCD & CMS)
- Handbook to Mitigate Road and Rail Impacts on Asian Elephants. (AsETWG IUCN)
- Systematic Conservation Planning with Connectivity. (CMS & CLLC)
- Guidelines for Connectivity Planning in Europe. (NaturaConnect Project)
- 2023:** Guidelines for Conserving Connectivity (IUCN WCPA CCSG)
- Ecological Connectivity and Nature-Based Solutions in the Carpathian Region (UNEP & IIED)
- 2022:** Protecting Blue Corridors Report (WWF)
- 2021:** Marine Conservation Connectivity Rules of Thumb for MPA Network Design. (IUCN WCPA CCSG)
- Global guidelines for peatland rewetting and restoration. Ramsar Technical Report 11 (Convention on Wetlands)
- 2018:** Implementing environmental flows with benefits for society and different wetland ecosystems in river systems. Ramsar Policy Brief 4. (Convention on Wetlands)
- 2015:** Guidelines for Addressing Linear Infrastructure in Central Asia. (CMS)
- 2012:** Determination and implementation of environmental water requirements for estuaries. Ramsar Technical Report 9. (Convention on Wetlands)

**The time is now, the science is clear and the solutions are available.**



The **Ecological Connectivity Challenge** is an initiative of the Global Partnership on Ecological Connectivity (GPEC) where all actors are encouraged to voluntarily commit to quantifiable targets in response to this Guide to Action.



**Let's Connect!**

**Register your commitments** and become a **Catalyst for Connectivity**. Discover more information on our website

## The Global Partnership on Ecological Connectivity

The Global Partnership on Ecological Connectivity (GPEC) was launched at CMS COP14 in Samarkand, Uzbekistan. The purpose of GPEC is to provide a multistakeholder collaborative platform for collective and coherent action that maintains, enhances and restores ecological connectivity to support biodiversity and ecosystem services across the globe.

The partnership includes a Steering Committee and Collaborative Partners. The Steering Committee helps shape the strategic direction of the Partnership. Collaborative Partners are organizations, institutions or initiatives responsible for executing or contributing to specific areas of work or projects across the Partnership's four core areas: Data & Knowledge; Policy & Legislation; Uptake & Implementation and; Awareness & Outreach.

<https://gpec-partnership.com/>



*Disclaimer: This document has been co-authored and endorsed by the participating partners of GPEC as indicated by the inclusion of their logos. Please note individual partner views may vary, and the publication does not imply endorsement by all GPEC Partners.*