

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 waters¹ and coastal² 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.



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.

¹ 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.

² 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.

The Agriculture, Extractive, Fishery, Forestry, Energy and Other Sectors can contribute to maintaining, enhancing and restoring ecological connectivity across the areas of land, inland waters and coastal marine ecosystems they manage. These sectors have an important opportunity to reduce fragmentation, maintain ecological processes and facilitate the movement of wild species through targeted actions such as:

1. Integrating Ecological Connectivity Considerations into Core Operations

- 1.1 Use available tools to map and understand critical habitats, wildlife movements, terrestrial, inland water, coastal and marine ecological corridors, flyways and swimways occurring within the company sphere of operation, and dedicate portions of the area specifically for maintaining, enhancing or restoring ecological connectivity.
- 1.2 Integrate ecological connectivity into operational decisions from the beginning, including linking monitoring and performance indicators to connectivity outcomes and ensuring environmental risk assessments factor in fragmentation costs.

Ecological connectivity is defined as the 'unimpeded movement of species, connection of habitats without hinderance and the flow of natural processes that sustain life on Earth'
CMS resolution 14.16

2. Managing for Ecological Connectivity

- 2.1 Maintain, enhance or restore natural terrestrial, inland water, coastal and marine ecological corridors, flyways and swimways within operational areas that support and allow for the movement of wildlife and ecological processes.
- 2.2 Collaborate with neighbouring operators, communities, governments and other stakeholders to maximise ecological connectivity at a larger land- (including inland waters), and seascape scale.
- 2.3 Pay special attention to gallery forests flanking water bodies (i.e. riparian zones). Take into account that natural ecological corridors may vary in size, for example large corridors may be needed to reconnect extensive but fragmented natural areas, while smaller features such as hedgerows and strips of native vegetation can also play an important role in supporting pollinator connectivity.
- 2.4 Pay special attention to critical areas essential for migratory species, aggregating or dispersing species, including breeding, nesting, feeding, resting and developmental habitats, which may not be connected physically but are connected ecologically, such as along flyways or facilitated species movements, larval dispersal and ocean currents, for example.
- 2.5 Prohibit the illegal taking, disturbance or unsustainable use of native wildlife within operational areas and promote coexistence between wildlife, production and personnel by allowing species to pass through the property in a manner that does not negatively affect operations, for example maintaining vegetated buffer zones within the operational area.
- 2.6 Avoid, where possible, installing physical barriers that prevent or restrict species movement, for example linear infrastructure, such as fences, railways, energy installations and roads and other barriers, such as vessel disturbance or underwater noise in marine ecosystems. Avoid dams and dikes or any other structure or activity, such as water abstraction, that prevents or limits water flow within operational areas. However, in cases where human-wildlife conflicts pose significant risks to livelihoods or safety, then mitigation measures should be carefully evaluated and implemented such as compensation schemes, the use of targeted physical barriers or other solutions as deemed appropriate. In instances where such infrastructure or actions are unavoidable, ensure their placement and management minimises their impact on ecological connectivity.

3. Restoring and Recovering Ecosystems where Operations are No Longer Active

- 3.1 Manage the rehabilitation of ecosystems following the cessation of activities, such as mines, decommissioned offshore wind farms and marine oil and gas pipes, using local species and natural patterns to recreate functional habitats.
- 3.2 Where feasible, consider progressively restoring and reconnecting natural habitats during ongoing operations when specific areas are no longer in use.



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*

Ecological Corridors

An ecological corridor is defined as a clearly defined geographical space that is governed and managed over the long term to maintain or restore effective ecological connectivity (Hilty *et al.*, 2020).

Corridors can be continuous or discontinues in the case of stepping stones and horizontal or vertical in the case of aquatic ecosystems. They may consist partly or entirely of natural areas managed primarily for connectivity



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.

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



Let's Connect!

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/>



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