

## IUCN WCPA Technical Note Series No. 3

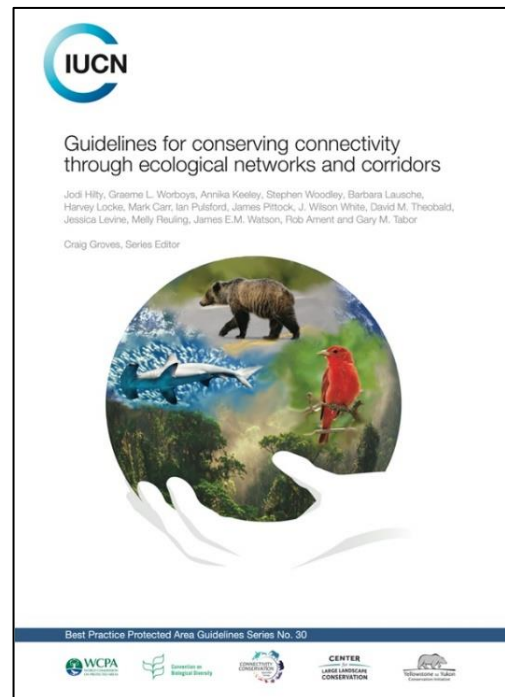
### GUIDELINES FOR CONSERVING CONNECTIVITY THROUGH ECOLOGICAL NETWORKS AND CORRIDORS

This Technical Note provides a summary of the following publication in the IUCN WCPA Best Practice Protected Area Guidelines Series, which can be downloaded from the IUCN library by clicking on the following link:

[Guidelines for conserving connectivity through ecological networks and corridors](#)

**Connectivity conservation is essential for managing healthy ecosystems, conserving biodiversity and adapting to climate change across all biomes and spatial scales.**

Well-connected ecosystems support a diversity of ecological functions such as migration, hydrology, nutrient cycling, pollination, seed dispersal, food security, climate resilience and disease resistance. These Guidelines are based on the best available science and practice for maintaining, enhancing and restoring ecological connectivity among and between protected areas, other effective area based conservation measures (OECMs) and other intact ecosystems.



## INTRODUCTION

**Protected areas (PAs)** and **other effective area-based conservation measures (OECMs)** are the foundation of nature conservation even in fragmented areas of land, sea or freshwater. It is now understood that active measures must also be taken to maintain, enhance or restore ecological connectivity among and between PAs and OECMs. Science has demonstrated that in order to achieve long-term biodiversity outcomes, retaining ecological connectivity is essential in a time of climate change. This new understanding is driving a fundamental shift in conservation practice in which actions and goals must vary according to land, freshwater and seascape context. [Guidelines for conserving connectivity through ecological networks and corridors](#), published in July 2020 in the [WCPA Best Practices Guidelines](#) series, introduces **ecological corridors** as a supporting element in nature conservation. Together, PAs, OECMs, and ecological corridors form **ecological networks for conservation** (see Figure 1). The Guidelines are intended to clarify and standardize approaches and best practices that can be tailored to realities on the ground. They are especially relevant for natural resource managers, spatial planners and other conservation practitioners working in both public and private land and seascapes, and ranging from intact wilderness to human-dominated areas. They take inspiration from a great diversity of local, national and transboundary connectivity conservation efforts already underway, including for example:

- [Over 130 large landscape and seascape conservation initiatives](#) underway around the world;
- [Bhutan](#), [Costa Rica](#), [Croatia](#), [India](#), [Kenya](#), [Malaysia](#), and the [Netherlands](#) undertaking national measures addressing connectivity values;
- The Convention on Migratory Species affirming in the [Gandhinagar Declaration](#) its commitment to maintaining and restoring ecological connectivity as a top priority; and
- The Convention on Biological Diversity including ecological connectivity as a key aspect in its proposed goals and targets for meeting its objectives under a draft [post-2020 global biodiversity framework](#).



Figure 1. A conceptual representation of an ecological network for conservation. Terrestrial PAs are in dark green and depicted as surrounded by human activities. Marine PAs are in dark blue. OECMs are represented in orange. Ecological corridors, both those that are continuous and those that function as stepping stones, are outlined with dashed lines. © Kendra Hoff / CLLC

## KEY DEFINITIONS

**Ecological connectivity** is the unimpeded movement of species and the flow of natural processes that sustain life on Earth. This definition has been endorsed by the Convention on Migratory Species (CMS, 2020) and underlines the urgency of protecting connectivity and its various elements, including dispersal, seasonal migration, fluvial processes, and the connectivity that is inherently present in large wild areas.

The Guidelines propose the following novel definitions:

- **Ecological corridor:** A clearly defined geographical space that is governed and managed over the long term to conserve or restore effective ecological connectivity (the following synonyms are often used: ‘linkages’, ‘safe passages’, ‘ecological connectivity areas’, ‘ecological connectivity zones’, and ‘permeability areas’).
- **Ecological network (for conservation):** 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.

## PLANNING PRINCIPLES

Ecological corridors...

- **Are not a substitute** for PAs or OECMs (see Table 1 for a visual aid on this relationship)
- Should be **identified and established in areas where connectivity is required** with the aim of building ecological networks for conservation
- Should have **specific ecological objectives** and be **governed and managed** to achieve connectivity outcomes
- May consist partly or entirely of **natural areas managed primarily for connectivity**
- So long as their conservation objectives are supported, may include **compatible human activities that practise sustainable resource use**
- Should be differentiated from non- designated areas by specific **uses that are allowed or prohibited**

Table 1. Differences in the role of protected areas, OECMs and ecological corridors. Note that all three terms refer to areas with conservation outcomes. PAs and OECMs protect nature as a primary consideration. Ecological corridors play a supporting role for PAs and OECMs in building ecological networks.

	Protected Areas	OECMs	Ecological corridors
<b>MUST conserve <i>in situ</i> biodiversity</b>	•	•	
<b>MAY conserve <i>in situ</i> biodiversity</b>			•
<b>MUST conserve connectivity</b>			•
<b>MAY conserve connectivity</b>	•	•	

## GUIDANCE FOR MONITORING, EVALUATING AND REPORTING

Governance authorities may voluntarily report ecological corridors and ecological networks for conservation to the Protected Planet Database managed by UNEP World Conservation Monitoring Centre (WCMC) and IUCN. At the time of publication, the reporting structure is under development with partners. Check with [www.protectedplanet.net](http://www.protectedplanet.net).

## REFERENCES and FURTHER READING

- CMS (2020). *Improving Ways of Addressing Connectivity in the Conservation of Migratory Species*, Resolution 12.26 (REV.COP13), Gandhinagar, India (17-22 February 2020). UNEP/CMS/COP13/ CRP 26.4.4. [https://www.cms.int/sites/default/files/document/cms\\_cop13\\_res.12.26\\_rev.cop13\\_e.pdf](https://www.cms.int/sites/default/files/document/cms_cop13_res.12.26_rev.cop13_e.pdf)
- Hilty, J.A., Keeley, A.T.H., Lidicker Jr., W.Z, and Merenlender, A.M. (2019). *Corridor Ecology: Linking Landscapes for Biodiversity Conservation and Climate Adaptation*. 2nd ed. Washington, DC: Island Press.
- IUCN-WCPA. 2019. *Recognising and Reporting Other Effective Area-based Conservation Measures*. Technical Report Series No. 3 IUCN: Gland, Switzerland. <https://www.iucn.org/theme/protected-areas/resources/iucn-wcpa-technical-report-series>
- Tabor, G. (2019). 'Ecological connectivity: A bridge to preserving biodiversity'. In *Frontiers 2018/19 Emerging Issues of Environmental Concern*, pp. 24-37. Nairobi: United Nations Environment Programme.

**For more information on the WCPA Connectivity Conservation Specialist Group see:**

[www.conservationcorridor.org/ccsg/](http://www.conservationcorridor.org/ccsg/) and [www.iucn.org/wcpa-connectivity](http://www.iucn.org/wcpa-connectivity)

**For more information on these Guidelines, including 25 case studies that illustrate initiatives around the world working toward maintaining, enhancing and restoring ecological connectivity see:**

<http://conservationcorridor.org/ccsg/what-we-do/projects-and-activities/guidelines/>

## CONTACT

Corresponding authors: Jodi Hilty ([jodi@y2y.net](mailto:jodi@y2y.net)), Annika Keeley ([annika.keeley@yahoo.com](mailto:annika.keeley@yahoo.com)), Stephen Woodley ([woodleysj@gmail.com](mailto:woodleysj@gmail.com)) and Gary Tabor ([gary@largelandscapes.org](mailto:gary@largelandscapes.org));  
IUCN WCPA CCSG: Gary Tabor, Chair and Aaron Laur, Program Officer ([aaronlaur@largelandscapes.org](mailto:aaronlaur@largelandscapes.org))

**This IUCN WCPA Technical Note No. 3 should be cited as:**

Oppler, G., Woodley, S., Hilty, J., Laur, A. and Tabor, G. 2020. *Guidelines for conserving connectivity through ecological networks and corridors*. IUCN WCPA Technical Note Series No.3, Gland, Switzerland: IUCN WCPA. 4pp.