PAPACO

Newsletter from African protected areas

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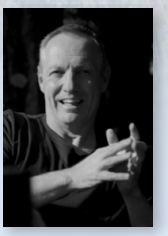


Editorial

GEOFFROY MAUVAIS
IUCN-PAPACO COORDINATOR

SAVE THE OKAVANGO

Picture a vast, endless, pristine wetland. Flooded marshes everywhere in sight, reeds bending in the wind, water seeping around sandy isles where thousands of birds congregate. Nested at the heart of Africa, welcoming dozens of thousands of elephants, bustling with life: the Okavango, a vast marshland in the north of Botswana. Man has recognized it as one of the last wonders of our Earth, adding it to the World Heritage list in 2014.

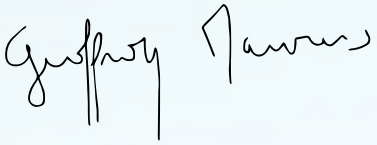
One among our oldest civilizational crossroads, the Okavango hosts thousands of men and women who live in close relationship with their environment, and care for it since the dawn of times. All depend on the pureness of its water, which seasonally ebbs and flows across the Okavango – the second largest interior delta in the world. All life there is tied to this precious liquid, and to its movement, following an unchanging rhythm that is the exact illustration of nature's perfection.

Now picture, thousands of kilometers away, a circle of businessmen. On a cold and windy night, around the table of a Vancouver restaurant, they fantasize about the Okavango. This is not sparked by the delta's beauty, biological wealth, or unique history. No, what they are dreaming about is underground: its alleged oil and gas reserves, which grow larger and larger with each glass they drink. Large enough to fulfill their wildest dream: an indecent financial somersault for their company, if they reap the market. It won't be very hard: a « junior » company unknown to all will take care of the frontline job, earn exploration permits – at whatever cost - and botch the environmental impact studies. Then the junior will launch an outrageous communication campaign, brushing aside all dissenting voices, exaggerating the advantages that exploitation would bring, rejecting all drawbacks, invalidating risks, smothering concerns. With cash-filled suitcases, tweaked studies, and reports each more outrageous than the last, the "junior" will turn the obvious disaster into a pathetic illusion. Who cares? The goal is not to know what will really happen, but to secure exploration rights which will then be sold on to a "major" company – which will be able to drill near the river, to bore through the roads, to destroy every yard of land and water and to bring the profit up, up to the banks, up to the markets. When profit ends, desolation will come, but who will be here to see it, say it, hear it?

This is history repeating itself and there is unfortunately no doubt about how it will end. This is the story we are writing today for the Okavango and, let's be honest, the world will not shake from hearing it. We are so used to all of this. And yet, if it happens, it will be another terrible demonstration of our collective failure. The failure of nature conservation, at all levels: individuals, experts, big INGOs like IUCN, large conventions such as the CBD, institutions like the UNESCO. Losing Okavango today would erase in one instant all the "victories" we pretended to earn over the past decades. As we desperately try to move past our fossil fuels dependency and to save our air, losing the Okavango would confirm without a doubt that – despite speeches, congresses, summits, and promises - nothing has changed and nothing will change.

Can we afford the loss? Certainly not. So let's be on guard and let 2021 be the year where we will have saved Okavango from the bling and immoral greed of a handful of people getting richer at the expense of everyone else. And the year where we call out all their accomplices, bravely and tirelessly, whatever their role may be, until shame pushes them back…

This is the best wish we can have for 2021. For sure, it will come up again!



Our courses

MOOC CONSERVATION

- Summary of Q2 2020 session -

We counted over 10 000 enrolments during the September - December 2020 session. This takes the total number to +60 000 enrolments since we started the MOOC adventure in 2015.

December was also the month we granted the 5 000th attestation of completion. Thank you to all the learners and stakeholders who have contributed to making these MOOCs the success they are today.

Next session: 18 January to 16 May 2021

- 2021 : some change... -

New plateform. The mooc-conservation.org platform is having a make-over and the new version will be released soon.

IMPORTANT: if you participated in previous sessions and wish to participate again, you will have to recreate an account. Pay attention to the name and surname you use, as this information will be used to generate your attestation of success...

Attestations of success. From this January 2021 session on, attestations will be delivered automatically (under the same conditions: average score +75%)! You will of course still be able to contact Marion and hear how she is doing by email at moocs@papaco.org (or request your attestations from previous sessions).

- ...and new options! -

The Essentials. In addition to the usual MOOCs, we are now launching a series of courses adapted to professionals involved in proteted area management according to their specific profiles and their levels of responsibility. We used existing MOOC materials and arranged them in such a way that a specific profile can have access to the information they need. An Essential is rhythmed by a succession of videos and quick tests. Once completed, you will be able to receive your attestation of participation (also generated automatically!).

Launch: 1 February 2021 (never closed)

MOOC Marine protected areas. A new MOOC will be added to the MOOC Conservation offer. The launch is planned for April 2021. Patience...

MORE INFO: mooc-conservation.org

MOOC conservation

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@moocconservation (Instagram)
@Papaco_IUCN (Twitter)
Papaco.org
GPAP newsletter (IUCN Programme of PAs)

IUCN PAPACO MOOC conservation

Ambassadors

HEAR FROM OUR AMBASSADORS:
YEAR-END MOOC ACTIVITIES IN CAMEROON

On 18 December 2020, a meeting was organised at Dibombari's Technical agricultural school with 198 learners. We took the opportunity to inform the students about PAPACO MOOCs. This meeting was also a great opportunity to talk about the importance of environment-friendly agricultural techniques.

On 19 December 2020 we organised an outing to Manoka island, a place filled with History. Participants visited mangroves, the fishermen's island as well as the colonial tower built at sea and used as a jail in the days of slavery.

Both activities were organised by Mathias and Pascale, PAPACO ambassadors in Cameroon. - By Pascale and Mathias

AMBASSADOR ? An ambassador is a designated Papaco MOOC student who volunteered to help students in his city or region.

Contact us to get in touch with your ambassador, or click on the relevant name in the column to your right.

List of ambassadors (click on the name to send them an email):

- Benin, Kévin
- Bouaké, Bernadette
- Burkina Faso, Valéry
- Burundi, Léonidas
- Comoros, Humblot
- Côte d'Ivoire, Mamadou
- Douala (Cameroon), Mathias
- Gabon, Brice
- Guinea (Conakry), Moussa
- Haïti, Talot
- Kara (Togo), Jean
- Kenya, James
- Kindu (DRC), Ohm
- Kinshasa (DRC), Emmanuel
- Kisangani (DRC), Richard
- Mali, Seydou
- Lomé (Togo), Samuel
- Lubumbashi (DRC), Albert
- Madagascar (Tana), Raymond
- Morocco, Rachid
- Mauritania, Fall
- Niger, Oumarou
- Nigeria, Michael
- Pointe Noire, Charmand
- Rwanda, Leonard
- Senegal, Thiam
- Chad, Seid
- Tunisia, Moadh
- Yaoundé (Cameroon), Pascale
- Zambia, Chewe
- Zimbabwe/South Africa, Fanuel

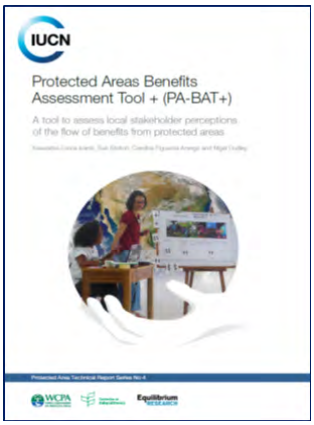
IUCN PAPACO MOOC conservation

Guidelines

GUIDELINES FOR CONSERVING CONNECTIVITY THROUGH ECOLOGICAL NETWORKS AND CORRIDORS

Jodi Hilty, Graeme L. Worboys, Annika Keeley, Stephen Woodley, Barbara Lausche, Harvey Locke, Mark Carr, Ian Pulsford, James Pittock, J. Wilson White, David M. Theobald, Jessica Levine, Melly Reuling, James E.M. Watson, Rob Ament and Gary M. Tabor

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 areas based conservation measures (OECMs) and other intact ecosystems. For the first time, this publication introduces a common definition and recommends formal recognition of ecological corridors to serve as critical building blocks of ecological networks in conjunction with protected areas and OECMs. Furthermore, these Guidelines also include 25 case studies that demonstrate current approaches to conserving ecological connectivity and ecological networks for different ecosystems and species, and at different spatial and temporal scales.



Introduction: The need for connectivity

Ecological connectivity' is the unimpeded movement of species and the flow of natural processes that sustain life on Earth (CMS, 2020). This is not an overstatement. Without connectivity, ecosystems cannot function properly, and without well-functioning ecosystems, biodiversity and other fundamentals of life are at risk. The disruption or absence of ecological connectivity occurs because of human-induced 'fragmentation', the breaking up of a habitat, ecosystem or land-use type into smaller and smaller parcels.

The fundamental problem is that much of the world has been degraded and fragmented already by human activity (Venter et al., 2016). Over 75% of terrestrial ecosystems (excluding Antarctica) have been directly modified by anthropogenic activities (Ellis et al., 2010), and 70% of the world's remaining wilderness is now restricted to just five countries (Watson et al., 2018). The human footprint also extends into the oceans, with 87% of marine biomes impacted by overfishing, nutrient run-off and climate change (Jones et al., 2018).

The goal of conservation must be to retain intact ecosystems, as they provide the best chance to conserve biodiversity in a fast-changing world (Scheffers et al., 2016). Protected areas therefore are the foundation of nature conservation, even in fragmented areas of land, sea or freshwater. However, while protected areas and other effective area-based conservation measures (OECMs) are essential, they are no longer considered sufficient in many places (IUCN WCPA, 2019). It is now understood that active measures must also be taken to maintain, enhance or restore ecological connectivity among and between protected areas and OECMs (Tabor, 2019). Science has clearly demonstrated that in order to achieve long-term biodiversity outcomes, retaining ecological connectivity is essential in a time of climate change (Foden & Young, 2016; Gross et al., 2016).

The scientific basis for connectivity

Historically, establishing individual protected areas, such as national parks, has been the primary focus of in situconservation. The area of land and sea included in protected areas has increased steadily (Figure 1). In addition, protected areas are now supplemented by a range of OECMs – territories currently delivering effective conservation under a range of governance and management regimes even

ust one third of the world's rivers remain free-flowing. Dams are the primary barrier to freshwater connectivity. Here, a dam is under construction on the emblematic river Bâsca Mare, Romania, found in the heart of the Carpathian ecoregion of Europe. © Leeway Collective / Balkan River Defence, Courtesy Calin Dejeu

though conservation may not be a primary management objective (IUCN WCPA, 2019). Nevertheless, on a global scale, biodiversity loss continues to accelerate.

Protected areas do not always adequately conserve biodiversity, either because they are not well placed or else need stronger management (Venter et al., 2017; Jones et al., 2018). Increasingly, many terrestrial protected areas within human-dominated systems are isolated from one another (Wittemyer et al., 2008). Isolation increases the risk of species extinctions within these areas (Newmark, 1987, 1995, 2008; Brashares et al., 2001; Parks & Harcourt, 2002; Prugh et al., 2008). The relationship between isolation and extinction is founded on island biogeography and metapopulation theory (MacArthur & Wilson, 1963, 1967; McCullough, 1996; Hanski, 1999). The theory of island biogeography states that, on an island, the rates of new species arrival and species extinctions depend on the size and shape of the island and its distance from the mainland. This concept has been transferred from islands to mainland ecosystems, where isolated protected areas are like islands in an ocean of human-dominated systems. In reality, human-dominated systems act as a filter, wherein individuals of some species can pass through freely while others cannot. Metapopulation theory states that many spatially distinct subpopulations can be reconnected by movement of individuals, leading to genetic exchange and the possibility of re-establishing formerly extirpated subpopulations. Together, these theories support the conclusion that larger and more well-connected areas are likely to maintain higher biodiversity over time. They support the need for ecological networks in large-scale land, freshwater and seascape conservation.

It is clear that sufficiently large, well-placed and well-managed protected areas and OECMs can provide connectivity among different habitat patches or resources within their boundaries.

However, because so much of Earth's terrestrial surface is fragmented, improving or sustaining connectivity among and between protected areas and OECMs is key for the effective conservation and management of biodiversity. Where it is not possible or appropriate to create additional protected areas or OECMs, connecting those already in place can serve to enhance biodiversity conservation.

There is some debate in the literature on negative impacts of corridors (Anderson & Jenkins, 2006; Hilty et al., 2019). Most negative effects appear to be related to increased predator activities, the movement of invasive species and diseases or micro-habitat changes (Weldon, 2006). These negative effects might be significant in individual situations. However, the reported benefits of corridors are far greater than any negative impacts (Hilty et al., 2019).

Ensuring that protected areas and OECMs in fragmented systems are functionally connected across terrestrial, freshwater and marine realms and associated airspaces is critically important for many species

Maintaining or restoring ecological connectivity may also have temporal aspects; migration can occur on a seasonal, annual or multi-year cycle, as evidenced by monarch butterflies (Runge et al., 2015).

It is possible to manage for connectivity from small scales (e.g. streams, coral reefs and seagrass beds) to regional and even continental scales (e.g. chains of islands, mountains, major river systems and deep-sea hydrothermal vent ecosystems).

Modelling ecological corridors

There are a number of ways to categorise connectivity. At the highest level, a key distinction relevant to ecological corridors is that connectivity has both structural and functionalcomponents; It is worth noting that connectivity can be characterised based on the type of habitat; the

Linear infrastructure development continues to rise unabated in large, previously intact landscapes and in high-biodiversity regions of the world. Deforestation and landscape fragmentation, Cameroon © Grégoire Dubois

degree of human disturbance; the scale; or objectives;

Functional connectivity' describes how well genes, gametes, propagules or individuals move through land- and seascapes (Rudnick et al., 2012; Weeks, 2017). Identifying areas that provide functional connectivity, either now or in the future, based on the known movements of individuals is an effective way to delineate movement corridors

Structural connectivity' is a measure of habitat permeability based on the physical features and arrangements of habitat patches, disturbances, and other land, freshwater or seascape elements presumed to be important for organisms to move through their environment (Hilty et al., 2019). Structural connectivity modelling aims to identify areas through which a variety of species may be able to move. Models often prioritise ecological corridors characterised by a low degree of human modification – areas which are assumed to be permeable to species sensitive to human disturbance

Systematic conservation planning is increasingly incorporating connectivity as a component of planning (e.g., Hodgson et al., 2016; Rayfield et al., 2016; Albert et al., 2017). With a growing number of quantitative approaches, numerous tools are available to map and model connectivity (Table 1). Increasingly, efforts to model connectivity recognise the dynamics of ecological systems, including seasonal or annual dynamics and long-term climate-induced changes (Rouget et al., 2006; McGuire et al., 2016; Simpkins & Perry, 2017)

Towards a common language

Providing a clear definition of ecological networks for conservation and guidance on how to identify, establish, measure and report on ecological corridors aids many countries in reaching the goal of identifying, establishing, managing and restoring 'well-connected systems', spelled out in Aichi Target 11 of the Convention on Biological Diversity (CBD), and to achieve other commitments.. It is also critical for the post-2020 global biodiversity framework established to advance progress towards achieving the CBD's 2050 Vision of 'Living in harmony with nature'.

Definition of 'ecological network for conservation'

An agreed definition of 'ecological network for conservation' reduces confusion, provides a common standard for global monitoring and database management, and generally improves communication and comparability.

For these purposes, the following definition is used:

An ecological network for conservation is 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.

Ecological networks are composed of core conservation units – protected areas and OECMs – connected with ecological corridors. The definitions of these areas follow:

- 'Protected areas' are clearly defined geographical spaces, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values (Dudley, 2008; Stolton et al., 2013).
- 'OECMs' ('other effective area-based conservation measures') are geographically defined areas other than protected areas, which are governed and managed in ways that achieve positive and sustained long-term outcomes for the in situ conservation of biodiversity with associated ecosystem functions and services, and

Connectivity conservation also supports human communities by supporting healthy landscapes. A "superbloom" event paints Carrizo Plain National Monument, California, USA. © Emily Pomeroy / Emily Rose Nature Photography

where applicable, cultural, spiritual, socio-economic and other locally relevant values are also conserved (IUCN WCPA, 2019)

- An 'ecological corridor' is a clearly defined geographical space that is governed and managed over the long term to maintain or restore effective ecological connectivity (see detailed explanation below).
- 'Ecological networks for conservation' are more effective in achieving biodiversity conservation objectives than a disconnected collection of individual protected areas and OECMs because they connect populations, maintain ecosystem functioning and are more resilient to climate change. In the context of ecological connectivity, 'connect' refers to the enabling of movement by individuals, genes, gametes and/or propagules

Planning and implementing ecological corridors

Fundamental principles

Every ecological corridor should be founded on a set of objectives that concisely explains why the corridor is being designated and what the expected conservation outcomes are. Keeping a few fundamental principles in mind will be helpful.

1. Ecological corridors are not a substitute for protected areas or OECMs. They are meant to complement protected areas and OECMs.

2. Ecological corridors should be identified and established in areas where connectivity is required with the aim of building ecological networks for conservation.

3. Each corridor should have specific ecological objectives and be governed and managed to achieve connectivity outcomes.

4. Ecological corridors may consist partly or entirely of natural areas managed primarily for connectivity. So long as their conservation objectives are supported, ecological corridors may include compatible human activities that practise sustainable resource use.

5. Ecological corridors should be differentiated from non-designated areas by the specific uses that are allowed or prohibited within them.

6. To achieve their connectivity objectives, ecological corridors require their own management plans (terrestrial, freshwater or marine as the case may be).

Objectives

The objectives of an ecological corridor should be clearly stated in its documentation. In addition, it may be useful to show any associated values of the corridor, such as contributions to ecosystem services.

Ecological connectivity objectives: The most critical step in documenting an ecological corridor is defining its objectives for ecological connectivity.

Associated ecosystem service values (if applicable):Ecosystem service objectives can often be achieved along with connectivity conservation, and may also be documented.

Associated cultural and spiritual objectives (if applicable):Conservation of important cultural and spiritual values may be associated with an ecological corridor.

Delineation

An ecological corridor should be clearly delineated. It should have agreed boundaries demarcated by the entity or entities governing and managing it, whether on land, in inland waters, coastal or marine areas, or any combination of these. Given how rapidly the world is changing, provisions for an ecological corridor to move in time and space may be articulated in its management approach. Although the size of an ecological corridor will vary, it should be large enough

In many mountainous regions, valley bottoms contain the greatest biodiversity and provide necessary winter habitat. These are also the areas that people tend to inhabit. Connectivity conservation in these areas relies on coexistence strategies for people and wildlife and coherent multi-jurisdictional approaches to land and freshwater management. Pieniny National Park, Poland & Slovakia © Juraj Švajda

to achieve its specific ecological connectivity objectives over the long term.

Governance

Governance arrangements should be clearly articulated in the documentation. As with protected area and OECM governance, ecological corridor governance has three components: how and by whom decisions are made, and who should be held accountable.

Conclusion

Ecological corridors in terrestrial, freshwater and marine ecosystems are a critical conservation designation needed to ensure healthy ecosystems. They are a key component of ecological networks for conservation and complement the objectives of protected areas and OECMs by knitting together these core habitats and other intact natural areas. These Guidelines support the growing demand for connectivity conservation, recognised by scientists, policy makers and practitioners. Connectivity conservation requires innovative implementation approaches to conserve lands and water within the conservation matrix – across patterns of resource use, jurisdictions, cultures and geographies. These Guidelines provide direction on how to conserve vital ecological connectivity values in every conservation situation in a consistent and measurable fashion. The toolbox for connectivity conservation includes various types of formal and informal recognition, national legislation, local and regional zoning regulations, conservation easements, conservancy design and transportation planning. Our world needs such a diversity of actions to maintain and restore ecological connectivity, an essential part of halting biodiversity loss and adapting to climate change.

There are many dimensions of ecological connectivity, including gene flow, movement of individuals, metapopulation dynamics, migration, seasonal dispersal and flows of ecological processes. The terms ecological networks and ecological corridors have been defined and operationalised throughout these Guidelines to establish a common set of terms, principles and approaches that can be consistently applied, yet tailored to the specific contexts of ecological connectivity around the world. Connectivity conservation will be enhanced by speaking this common language and working together toward shared successes.

The science underpinning connectivity conservation clearly supports that larger, well-connected areas are more likely to maintain biodiversity and ecological integrity. Given the current biodiversity and climate crises, there is an urgent need to restore and sustain ecological connectivity among and between protected areas, OECMs and other intact natural areas. By connecting these areas with each other, it is possible to arrest and reverse ecosystem fragmentation.

Well-connected ecosystems support a diversity of ecological functions including migration, water and nutrient cycling, pollination, seed dispersal, food security, climate resilience and disease resistance.

The loss of ecological connectivity is most often a consequence of policy and management decisions made by the development, transportation, agriculture and extraction sectors. These Guidelines and Case Studies provide insights into examples and best practices to demonstrate approaches that can ensure ecological connectivity for different ecosystems and species, and at different spatial and temporal scales. An emphasis on human and technical capacity is required for mainstreaming and accelerating uptake of connectivity conservation measures to buffer and better adapt to the impacts of climate change

Ecological connectivity often transcends national boundaries and can span different ecosystems within a country. The strategies and approaches outlined here take into careful consideration how national and regional transboundary measures can be formed and contribute to aggregated

accomplishments internationally. Planning and implementing ecological networks and corridors require specific objectives to be set, and governance and management mechanisms to be aligned with achieving effective conservation outcomes.

Most global, regional and national targets for biodiversity conservation, climate change and environmental sustainability cannot be met unless ecological connectivity conservation is addressed. The importance of connectivity in achieving the objectives of the Convention on Biological Diversity cannot be overstated. As such, it is highly relevant for accomplishing the current and future objectives of many other Multilateral Environmental Agreements. Ecological connectivity – if further recognised in law and policy around the world – can serve as an integrative and cross-cutting mechanism to advance obligations and commitments within and across national borders. Overall, connectivity conservation, by linking together protected areas, OECMs and ecological corridors, offers scalable solutions for environmental, social and economic challenges. The world needs – and it is in our collective interest — to protect, maintain and restore ecological connectivity. • Read the full document here

Migratory species such as the humpback whale (Megaptera novaeangliae) demonstrate the need for connectivity conservation. © Adobe StoCK

Announcements

PANORAMA
SOLUTIONS FOR A HEALTHY PLANET

Participatory maritime surveillance within the Banc d'Arguin National Park

With an area of 12,000 sq.km. – of which 6,300 are marine areas and 5,700 are on the continent – the Banc d'Arguin National Park (PNBA) is one of the largest national parks in Africa. It is a breeding ground for the curlew, for the maturation of the yellow mullet, and is home to many migratory birds and fish species. The park is also home to extensive intertidal and subtidal seagrass meadows. Another exceptional feature of the PNBA is the presence of the Imraguen, a population of desert fishermen. They have ancestral and exclusive rights over fishing resources as part of their traditional practices using Latin sailing boats called 'lanches'. The importance of the PNBA in terms of biodiversity and cultural heritage requires guaranteeing its socio-ecological integrity. Aware of this situation, the PNBA managers and the Delegation for Fisheries Surveillance and Control at Sea (DSPCM) – now the Mauritanian Coast Guard (GCM) – set up a participatory maritime surveillance system in 1999.

Full article: here.
More info on Panorama: here.

Imraguen fishermen within the Banc d'Arguin National Park
© PNBA

Community Development Manager @ WCS

Where? Mbatamila, Niassa

Application deadline:
15 January 2021

>> Click here for the full job description <<

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THE OPINIONS EXPRESSED IN THIS NEWSLETTER DO NOT NECESSARILY REFLECT THOSE OF IUCN