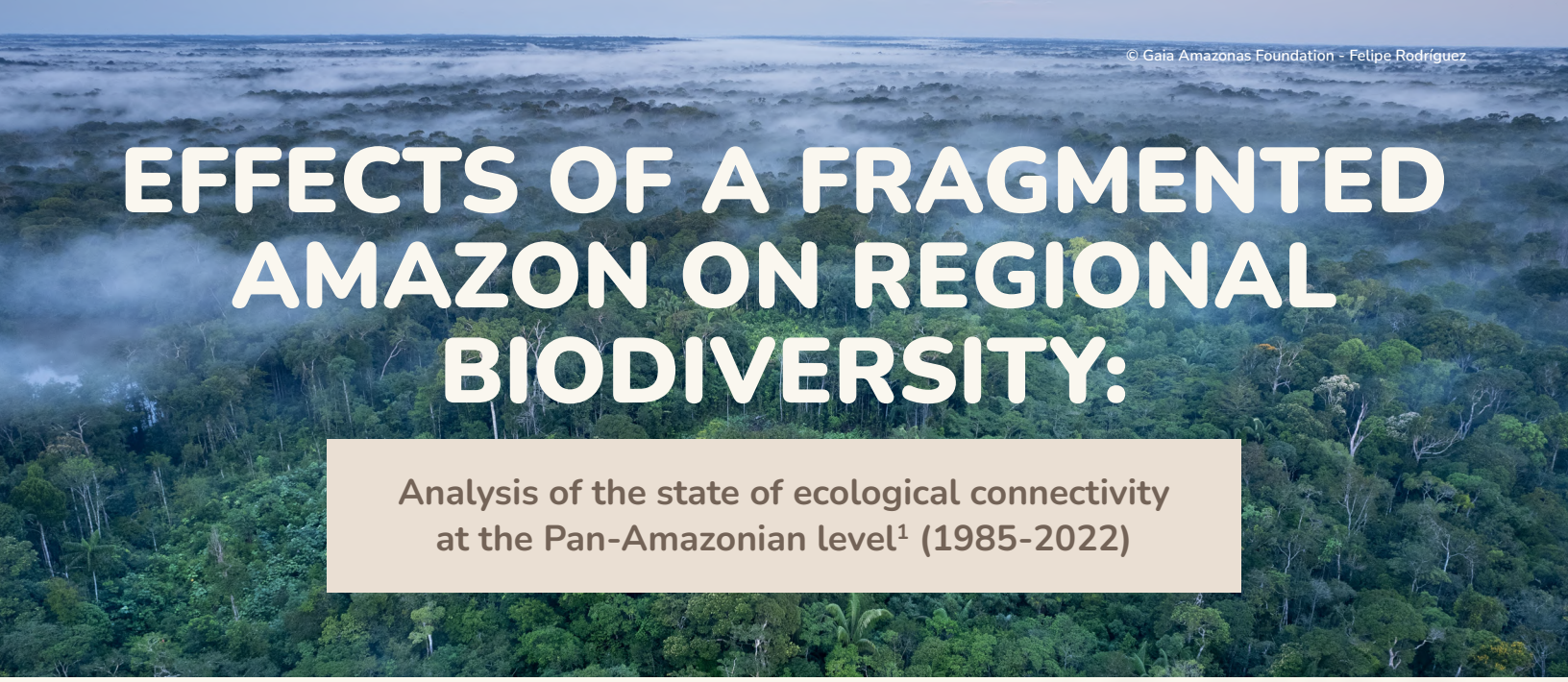

EFFECTS OF A FRAGMENTED AMAZON ON REGIONAL BIODIVERSITY:

Analysis of the state of ecological connectivity at the Pan-Amazonian level[1] (1985-2022)

SUMMARY FOR DECISION MAKERS AT COP16 TO THE CONVENTION ON BIOLOGICAL DIVERSITY

A forest is more than a group of trees. With each hectare that disappears, so does the set of relationships that make up and are housed in this ecosystem: its ability to regulate the water cycle and temperature is reduced, its ability to respond to the climate crisis deteriorates, among other issues.

In addition, for every hectare lost, connectivity in almost half a hectare in the surrounding area is affected too. This is one of the findings of the most recent study conducted jointly by the Amazon Network of Georeferenced Socio-Environmental Information (RAISG) and the North Amazon Alliance (ANA).

A critical moment in the Amazon

It is becoming increasingly clear that a stable climate and resilient biodiversity depend largely on healthy and ecologically connected tropical forests. When in good condition, these forests play a key role in regulating the natural cycles that make life on the planet possible. This includes regulating the water cycle, capturing carbon (which prevents carbon from accumulating in the atmosphere and delays global warming), providing oxygen and influencing the stability of the local and global climate.

The Amazon is one of the most extensive and biodiverse tropical forest areas on the planet and it is inherently interconnected *(with other systems and regions as well)*. However, several threats are currently advancing in the region: agribusiness, oil production, mining, and infrastructure works, among others. They put this interconnectivity at risk, polluting the air and water and clearing large areas of forest and other natural cover.

1. The RAISG works with a delimitation of the Amazon region derived from geographical and hydrological variables. This perspective aims to safeguard the region's biodiversity and ecosystem functionality, preserving its crucial role in maintaining the continent's climate stability. The only deviation from this approach occurs in Brazil, where the delimitation of the Amazon basin with which RAISG currently works adheres to the country's legal decree in relation to its Amazon region. This decree covers part of the Pantanal system to the southwest, and the northeast Atlantic basin.

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When these threats are sustained, they cause profound ecological disruptions, degrade the landscape and modify the natural cycles of ecosystems. One of the greatest dangers of fragmenting Amazonian ecosystems is that, in the long term, their contribution to the water cycle can be altered, resulting in a decrease in rainfall across the continent[2].

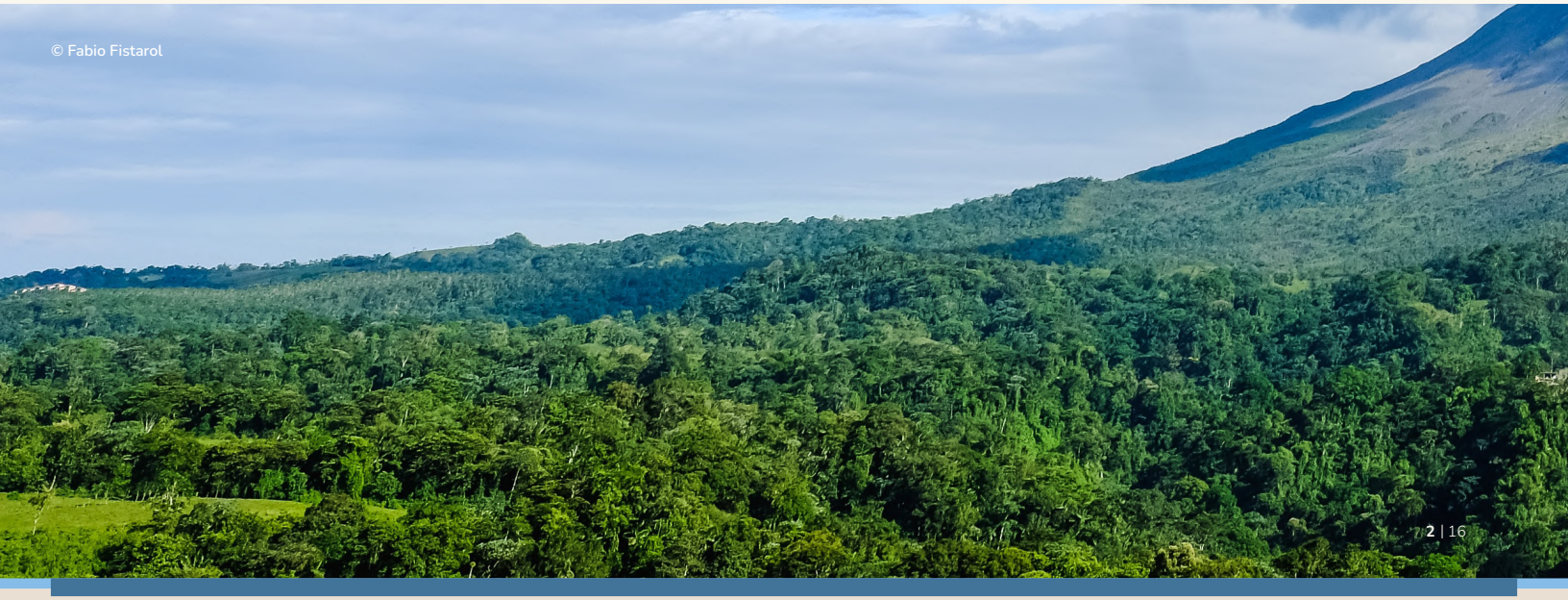
In 2023, 16.5% of the Amazon (equivalent to 138 million hectares) had already been transformed into anthropic use areas. However, one of the most troubling pieces of evidence from this analysis is that the ecosystem-functions of the remaining 83.5% of this region are at risk, and hence its resilience.

One of the most salient effects of any **fragmentation** process (when a continuous ecosystem is divided into smaller areas until isolated), like the one taking place in the Amazon, is the impact on species mobility. In addition to displacement, species' abilities to find food, to reproduce and to migrate are also severely altered. In the long term, the gene flow of their populations is reduced, and the ecological capacity of the area is also impaired, at which point sustaining biodiversity becomes a challenge, therefore reducing the area's ability to fulfill essential ecosystem-functions.

This in turn leads to another process known as **degradation** (refers to environmental damage and its role in the reduction of resources such as air, water and soil quality, destruction of ecosystems, habitats, species extinction and pollution). In contrast, ecological **connectivity** refers to the ability of the landscape to allow the movement of species and the flow of ecological processes between isolated areas. This is a key element in mitigating the effects of fragmentation and maintaining ecosystem resilience, that is, the very basis for the health of Amazonian ecosystems.

However, the underlying forces in the relationships that nourish and diversify the Amazon and its ecosystems are not only nature based. They also interact with the ways of life of Indigenous Peoples and Local Communities. These ways of life sustain, energize, and harmonize the cycles of the territory and the ecosystems in which they participate in practicing their knowledge systems. Therefore, a comprehensive and complementary understanding of connectivity is needed, encompassing its sociocultural dimension besides the ecological one. If thought of holistically, safeguarding connectivity in the Amazon can be one of the most effective strategies in enabling the region to play its optimal role in regulating life-support systems and to contain biodiversity loss and the global climate crisis.

2. (taken from IUCN Connectivity Guidelines 2003)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The eyes of the world are on this region!

The most important global conversations in the environmental, biodiversity and climate change fields are taking place this year and the next (2024 and 2025), both happening in Amazonian countries and seeking to reach national level commitments with global impacts. Global guidelines that countries must adopt will be set forth in those settings. The expectation is for the Amazon region to be the starting point, contributing to shaping decisions from local and territorial perspectives.

Ecological connectivity has been raised and recognized in various scenarios as a fundamental condition for tropical forests to continue to fulfil ecosystem functions associated with biodiversity, climate, and life. It has also been incorporated into several global instruments since the establishment of the Convention on Biological Diversity (CBD) in 1992. However, there is still not enough information to be included as a relevant perspective in the regional measures aimed at ensuring the integrity of strategic territories like the Amazon and at uniting efforts from this region to achieve biodiversity goals.

- The 2003 IUCN guidelines
- Biodiversity targets that referred to well-connected areas with the AICHI Target 11
- The establishment of the Sustainable Development Goals (SDGs) in 2015
- The 2015 climate change COP, recognizing that connectivity is key to climate change mitigation and adaptation
- The New Global Biodiversity Framework adopted in 2022, where connectivity is considered in target 3 as a requirement for well-connected systems of biodiversity protection strategies to achieve conservation of 30% of marine and continental areas by 2030

The North Amazon Alliance (ANA) and the Amazon Network of Georeferenced Socio-Environmental Information (RAISG) present a set of evidence on the ecological connectivity situation in the Amazon. These aim to inform discussions on biodiversity protection, within the framework of COP16 in Colombia, and contribute to the talks on climate regulation, in the lead-up to the Climate Change COP30 in Brazil in 2025:

1. In 2022, **23% of the Amazon had completely lost its ecological connectivity,** while an additional 13% had experienced degradation in this condition.
2. Between 1985 and 2022, **the total surface area of ecologically disconnected areas doubled.**
3. When comparing the average annual loss per million hectares, 13 hectares are lost in PAs, 7 hectares are lost in ITs, and 50 hectares are lost outside of these designated areas.
4. Although levels of connectivity loss are lower within ITs and PAs, these designated areas show higher rates of degradation explained by the indirect impacts of surrounding areas. **For every hectare lost, 1.4 hectares are degraded.**

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5 **The loss of connectivity and degradation are closely related:** for every hectare that loses its natural coverage, an additional 0.4 hectares lose ecological connectivity, and 0.8 surrounding hectares (on average) suffer degradation[3]

6 **In the north of the Amazon River, ecological connectivity is maintained thanks to the large stretches of continuous forests that exist.** Similarly, the emergence of barriers or degradation is not significant. High conservation levels are the result of territorial management practices by Indigenous peoples, guaranteeing healthy, diverse, and resilient ecosystems through their knowledge and territorial management systems.

7 Through the connectivity lens, Protected Areas (PAs) and Indigenous Territories (ITs) demonstrate, once again, **their effectiveness in conserving the Amazon.** The levels of connectivity loss in these areas are lower than in territories where these designations do not exist. As of 2022, they accounted respectively for between 33 and 37 percent of the areas with no impact on connectivity.

3. A 2003 study by Gonzalo Ferraz of the Federal University of Rio Grande do Sul confirmed that "a 100-hectare forest fragment loses half of its bird species in 15 years, because due to fragmentation, the forest is insufficient to sustain all species".

What can be done?

It is possible to use the data obtained during this first analysis phase to demarcate priority areas in the Amazon that require urgent measures and actions aimed at stopping the loss of connectivity and consolidating comprehensive management. The study can serve as a benchmark so that the strategies laid down to meet national biodiversity targets include components that help build indicators incorporating connectivity as a guarantee of ecosystem health.

It is time to promote harmonization and coordination between public and private views, programs, and policies through horizontal and effective dialogues between different stakeholders. Remaining united in diversity can mobilize powerful and effective actions to put the Amazon at the heart of decisions. Part of this effort involves recognizing and promoting the work of Indigenous peoples and local communities in territorial management and protection, as a foundation for maintaining connectivity and protecting the integrity of the Amazon.

Based on the results of this analysis, and in line with the goals of the Kunming-Montreal Global Biodiversity Framework, we provide the following recommendations and urge Amazonian countries to coordinate efforts to fulfil them

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RECOMMENDATIONS ASSOCIATED WITH SPATIAL OR AREA-BASED STRATEGIES:

- Incorporate and apply environmental zoning, planning, administration, and management instruments developed autonomously by Indigenous peoples and local communities in the Comprehensive Spatial Planning strategies that countries should frame in the implementation of Goal 1[4].
- Ensure effective management of protected areas and sustainable use of existing biodiversity. Likewise, create new areas within each of the Amazon countries, in such a way that connectivity is preserved and restored at the regional level in strategic zones.
- Implement complementary conservation strategies in the surroundings of Natural Protected Areas and Indigenous Territories, such as the restoration of forests and natural vegetation, focused on strengthening and preserving ecological connectivity.
- Since the study establishes the importance of Natural Protected Areas and Indigenous Territories in maintaining connectivity in highly fragmented areas, and the indirect impacts they face from threats in adjacent areas, we propose strengthening strategies to ensure the effective management of these areas. This depends on maintaining good connectivity *(see maps 3 and 4 in the following sections of this document)*.

RECOMMENDATIONS ASSOCIATED WITH THE RIGHTS OF INDIGENOUS PEOPLES AND LOCAL COMMUNITIES FOR STRENGTHENING A RIGHTS-BASED APPROACH:

- Since the study demonstrates the importance of Indigenous territories in consolidating and safeguarding connectivity in the Amazon, areas that are in turn indirectly impacted by land-use changes in neighboring regions, it is essential to consider the guidelines derived from their knowledge systems. These guidelines, linked to their own food systems, should be considered when implementing territorial management strategies. This ensures that the strategies are based on local realities and are appropriate for the region.
- Effectively integrate Indigenous peoples and their territories into national strategies for biodiversity protection, which implies ensuring that they can fully exercise their autonomy and effectively enjoy their rights. Consolidating the recognition of these rights is paramount, as well as those of local communities, their knowledge, and their contributions to biodiversity conservation. This recognition must be reflected in both national policies and in the updated National Biodiversity Action Plans (NBSAPs) under the CBD framework.

4. Having a well-connected system of conservation strategies depends on the inclusion of ITs in these strategies. To this end, it is important to consider their own instruments in the comprehensive spatial planning proposed by the goal

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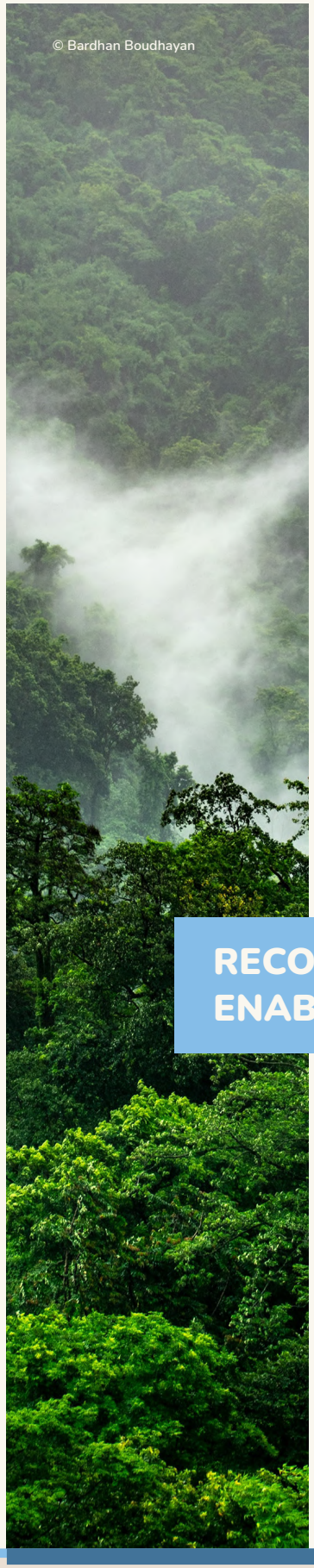
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- Set forth mechanisms to ensure the full and effective participation of Indigenous peoples, people of African descent and local communities in biodiversity decision-making at all levels, including equal participation of women (targets 22 and 23).

- Recognize and promote traditional knowledge for the effective management of biodiversity, ensuring the free, prior and informed consent of Indigenous Peoples and Local Communities, and guaranteeing their sovereignty over their knowledge (target 21). Additionally, protect and promote the customary and sustainable use of biodiversity by these groups. (Targets 5 and 9).

- Inspire solutions based on the exchange of successful experiences among countries in the region, especially those based on the knowledge of Indigenous Peoples and Local Communities. This, in order to recover the areas identified in this study as having lost and degraded connectivity.

- Promote new opportunities for the creation of income sources for local populations in alignment with their cultural principles, considering that these principles are the fundamental basis for effective governance and territorial management in the Amazon. Local Amazonian economies, which are relevant to and respectful of the region's specific characteristics, guarantee ecosystem connectivity and proper territory management.

- Effectively and promptly fulfil the commitments taken on by Amazonian countries in the Escazú Agreement, especially those seeking to establish mechanisms to protect nature defenders, including Indigenous peoples and local communities. Their knowledge, practices and territorial processes offer complementary conservation alternatives and are a way to ensure connectivity.

RECOMMENDATIONS AS REGARDS ENABLING CONDITIONS:

- Coordinate efforts among national governments in the Amazon region through bodies such as ACTO. This is to stop the advance of illegal activities and environmental crimes. Specifically, prioritize the implementation of local and regional programmes within public policy that effectively and robustly address the issues of deforestation and forest degradation, caused by human activities, especially illegal ones. This will help ensure the ecological continuity of Amazonian landscapes beyond borders.

- Promote the investment of resources; diversify and increase income sources to create financial vehicles enabling access to funds that leverage the protection of life and contribute to halt biodiversity loss effectively, promptly, and easily.

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What is ecological connectivity and why is it important to talk about it at COP16?

What is ecological connectivity? This refers to the set of characteristics that enable a natural system (ecosystem, biome or other) to have the necessary conditions that allow the flow of organisms, elements, and their components (genes, spores, seeds, water, minerals) from one place to another. This is key to the sustenance, reproduction, adaptation, and evolution of the species that constitute it. The state of connectivity of a system, landscape, or biome, determines its ability to self-regulate, maintain such conditions, and contribute to the regulation of life-supporting systems.

This analysis evaluates types of natural cover (forests, savannas, grasslands, wetlands, among other types) that exist in the Amazon region; the continuity of their structure (distances, presence/absence of barriers, land-use changes); and the extent to which they could maintain their interactions, dynamics, and functionality.

Sustained deforestation, leading to the fragmentation of the forests of the Amazon, coupled with extreme climatic variations, pose an imminent threat of ecological collapse. Thus, understanding the magnitude of the current risk to biodiversity in the region is essential, thereby highlighting the implications of connectivity loss for various forms of life and identifying priority areas for maintaining or restoring it.

It is clear that threats to the Amazon are not confined solely to areas where forests have been cleared and natural vegetation lost. They loom also in areas with isolated vegetation cover, or which have lost their continuity, and where connectivity was degraded due to so-called edge effects. These effects are caused by phenomena such as pollution, noise, the presence of machinery or nearby human settlements, among other factors.

Geographical distribution also has an impact, for instance, whether or not these areas stand far from food sources or from more diverse zones, or if they cover small stretches of land that cannot support certain species. This is why standing forests can be found devoid of species, where ecological processes (such as pollination and seed dispersal) and evolutionary processes (gene flow) have been interrupted. As a result, ecosystems' ability to adapt to droughts, floods, fires, and other phenomena is reduced, impacting the life-support[5] systems they provide and regulate.

5. To refer to ecosystem services, the North Amazon Alliance has adopted the term "life support systems" from Colombian climatologist Germán Poveda, as it better aligns with the concept of Earth's self-regulating capacity. The Earth "has maintained its parameters at 21 percent oxygen in the atmosphere, and an average temperature of 20°C, through interactions and feedback between organisms, rocks, water, and the atmosphere. Self-regulation is an active process directed by the available free energy of the sun with the participation of living organisms" (Lovelock, 1989). For this reason, the term "life support systems" is more precise to refer to the regulation of natural cycles such as the water cycle, the carbon cycle and quantity in the atmosphere, and local and global temperature. The term ecosystem services stems from an economic perspective that views the Earth and its regulatory capacity as a service for humans, rather than understanding it as a dynamic that sustains all forms of life on the planet. Some environmental policy frameworks such as the CBD have adopted the term "benefits of nature to people." However, this approach positions human beings as passive entities that "enjoy" the benefits that the Earth offers them, rather than conceiving them as active agents, living beings that interact and are interconnected with the living system that sustains them, and that participate in its maintenance

How does this study measure ecological connectivity?

The study is based both on the historical analysis of changes in land cover and use, and on species' mobility behavior in the Amazonian landscape between 1985 and 2022. Changes in land cover and use were tracked by analyzing annual maps produced by the MapBiomas Amazonia initiative, implemented by RAISG.

Moreover, species mobility is tracked by modeling the behavior of a given species (an ecoprofile built from existing databases for species such as jaguars, tapirs, and some primates), taking into account its dispersal ability and looking to track species with specialized ecological characteristics[6], i.e., those with high sensitivity to environmental changes and significant ecosystem requirements.

The results indicate that, over time, the change in natural coverage, reflected in decreased forest areas and other ecosystems, paired with an increase in areas associated with economic and productive activities, fragments the forests, and displaces the baseline ecoprofile. **The analyses help build a map with three different classifications of connectivity:**

Lost connectivity:

> These are areas where the modeled species has zero displacement, also known as barriers or disconnected areas.

Degraded connectivity:

> Areas that are at risk or highly vulnerable to loss of function and structure. This degradation is due to fragmentation of the landscape or isolation of patches; the diminishing size of the fragment; the proximity to affected areas; and the shape of the patch, where elongated patches are more vulnerable than better rounded ones.

> This category includes: **(a)** remnant corridors between fragmented natural areas (at risk of losing their connectivity, but still allowing the flow of species); **(b)** heavily intervened matrices where there are few shelters or conservation nodes and long and narrow corridors; and **(c)** areas where connectivity is weak, due to the influence of highly intervened areas; these areas often lie on the border between a well-connected territory and one with ecological disconnection. If the pressures on these areas are sustained, they can quickly become bottlenecks, barriers or even lose their connectivity altogether.

Good connectivity:

> Areas with low levels of anthropic intervention in well-preserved matrices, where the modeled species has little difficulty in moving and can move in all directions (omnidirectionally).

It is an innovative approach. Conservation science has explored different ways to measure connectivity. One of the most common ways is triangulating the distance between protected area polygons to determine how well connected they are, under the assumption that connectivity and forest health have not been altered within protected areas. This assumption, however, does not always match the reality. Working with a modeled species and measuring its ability to move omnidirectionally across its habitat provides an opportunity to model how organisms move in their territories and to assess how conservation units are functioning, thereby providing a more accurate picture of the territorial forces at work as concerns the state of connectivity. As a result, decision-making can be more assertive and help improve conservation strategies, ensure forest health, and thus guarantee the forest's ability to regulate life support systems.

6. A species that has limited tolerance for environmental conditions and relies on specific resources to survive. These species usually have a very specific diet or live in very restricted habitats. Because of this specialization, they are more vulnerable to changes in their environment, such as loss of habitat or alteration of their resources

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Critical points highlighted by the analysis

IN GENERAL

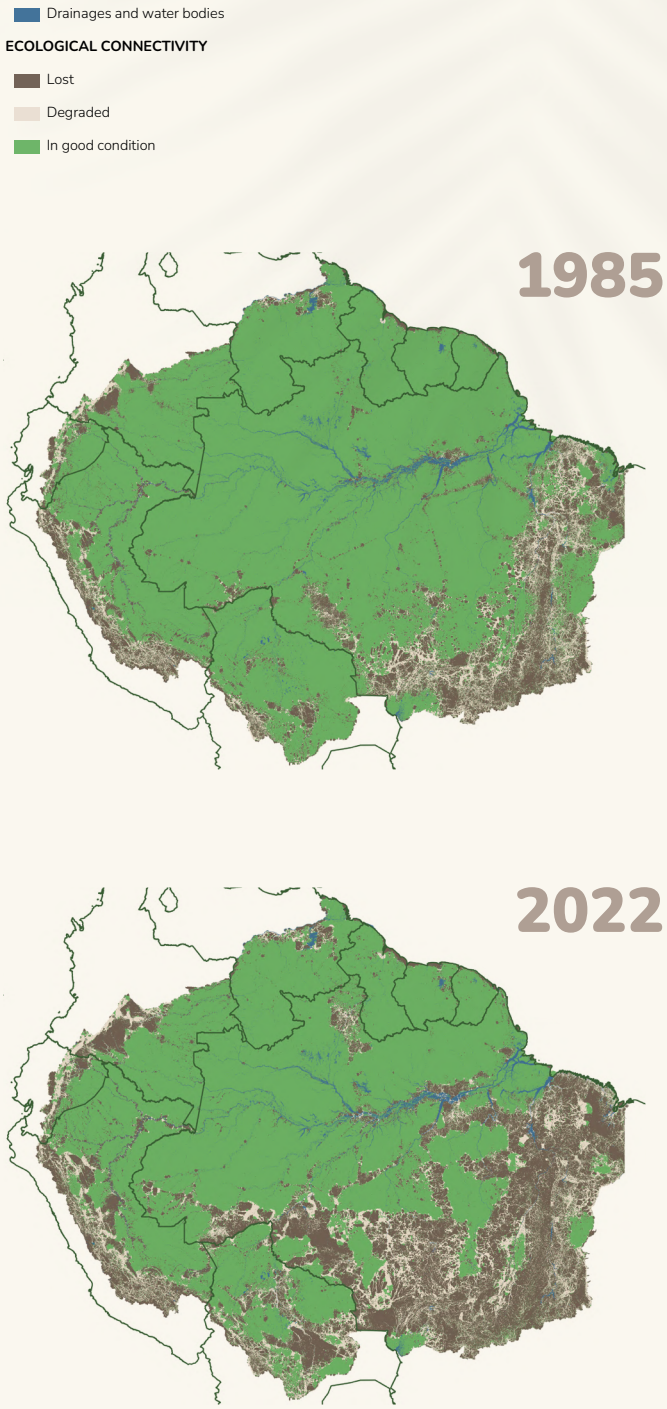
In addition to the deforestation processes that occur in the Amazon, well-studied and monitored, there is a degradation process that impacts the functionality of ecosystems and affects the state of connectivity of forests and natural cover that remain standing in the Amazon biome.

That is how **by 2022, 23 percent of the Amazon had lost its ecological connectivity completely, and an additional 13 percent had experienced degradation in the functionality of its ecosystems**, leading to loss of resilience and adaptability. This degradation occurs especially in natural remnants embedded in highly transformed landscapes. Generally, these are distributed along riverbanks or other critical areas for local conservation, isolated from areas of high diversity. It also occurs in edge areas, where the air is polluted with noise and particles, the climate is altered, and the presence of anthropic activity hinders the natural movement of organisms and slows down or diminishes the ecological processes specific to the place.

It also found that the number of **areas that have lost their ecological connectivity status doubled between 1985 and 2022.** Moreover, the relationship between loss and degradation processes is closely related. This means that **for every hectare that loses ecological connectivity, on average 0.5 hectares of surrounding natural coverage are degraded.**

Map 1

Change in ecological connectivity in the Amazon Basin between 1985 and 2022.



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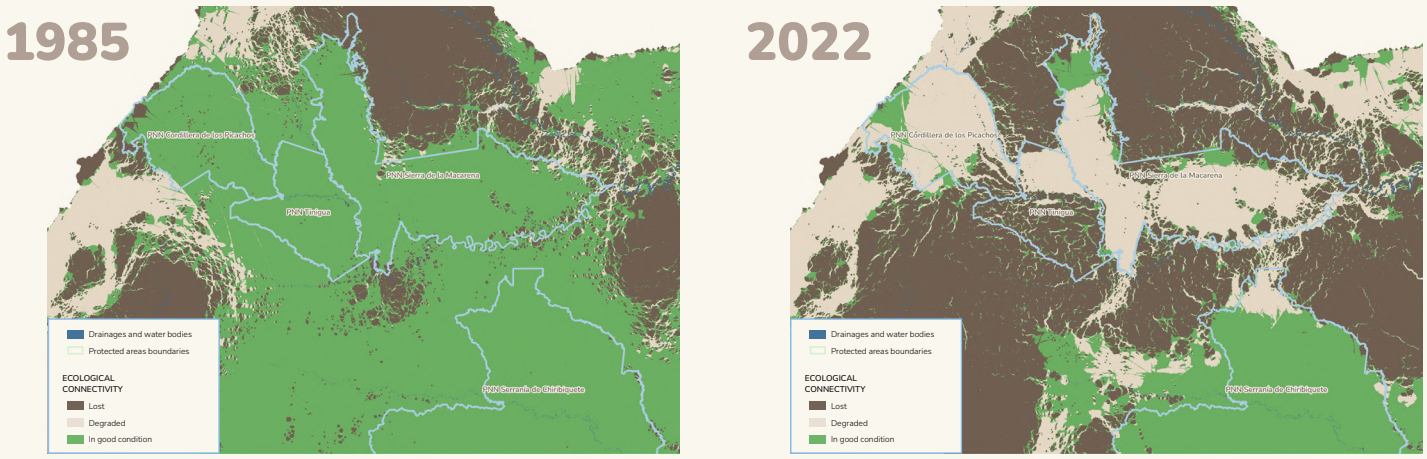
SPECIFICALLY

In Colombia, one of the areas with the greatest loss of ecological connectivity over the course of these 39 years is located between the National Natural Parks (PNN as per its Spanish acronym)[7] **Tinigua, Picachos and Macarena and el PNN Chiribiquete.** This is an area with three adjoining protected natural areas that should function as a barrier to one of the highest relicts of endemism in the Colombian Amazon: Chiribiquete. However, deforestation, degradation and fragmentation of its ecosystems have not been reduced, even within these protected areas. Indeed, the loss of large areas of forest has generated an increase in ecologically disconnected and highly degraded areas that may lose their connectivity status. In addition, this is the last link in the connectivity belt between Andean ecosystems and the Colombian Amazon. Además, es el último eslabón del cinturón de conectividad entre los ecosistemas andinos y la Amazonía colombiana.

7. One of the categories of Natural Protected Areas in Colombia

Map 2

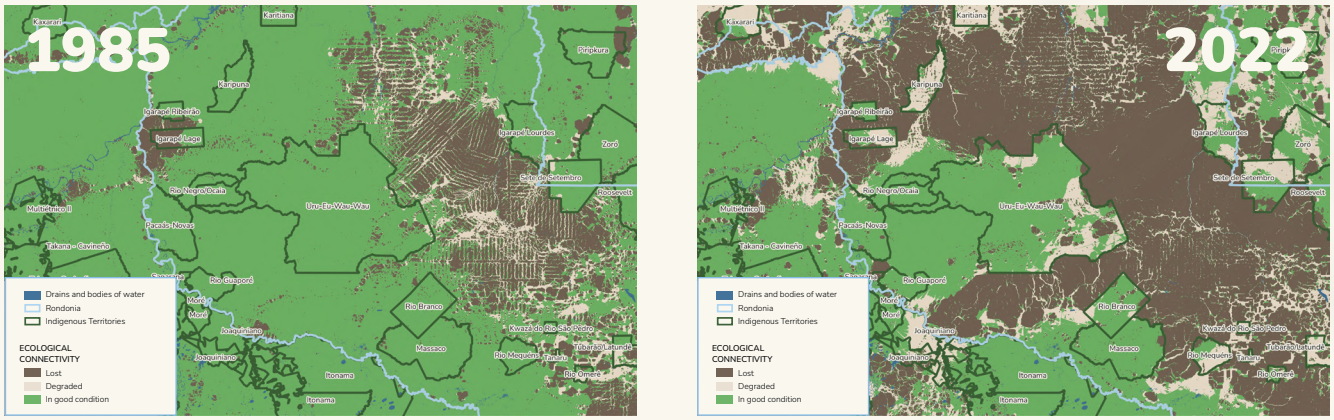
Changing ecological connectivity in the northern Colombian Amazon between 1985 and 2022.



Similarly, south of the Amazon River, in the state of **Rondonia** in Brazil, near the border with Bolivia, a rise in barriers to connectivity is evident due to an increased number of grasslands. This has meant that forests within Indigenous Territories, and Natural Protected Areas, located in this area, are increasingly isolated from the rest of the biome.

Map 3

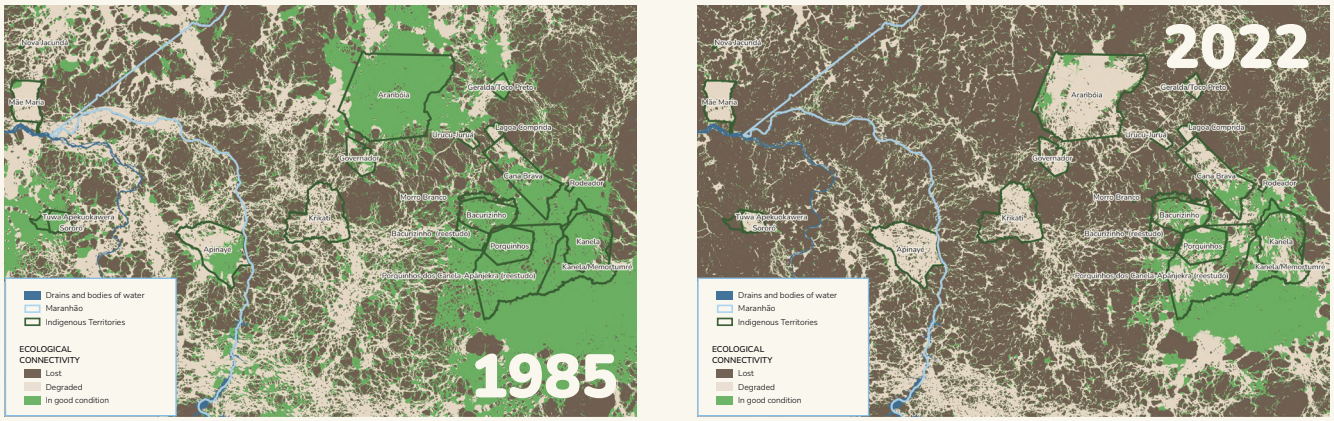
Changing ecological connectivity in Rondonia, Amazonia, Brazil between 1985 and 2022.



South of the Amazon River, in the State of **Maranhão** (Brazil), the increase in barriers has been so significant that Indigenous Territories are the last areas with remnants of connectivity, which is fragile in some cases. These territories are surrounded by areas that have lost or are about to lose their connectivity, diminishing the functionality of their ecosystems and increasing their vulnerability.

Map 4

Changing ecological connectivity in Maranhão, Amazonia, Brazil between 1985 and 2022.



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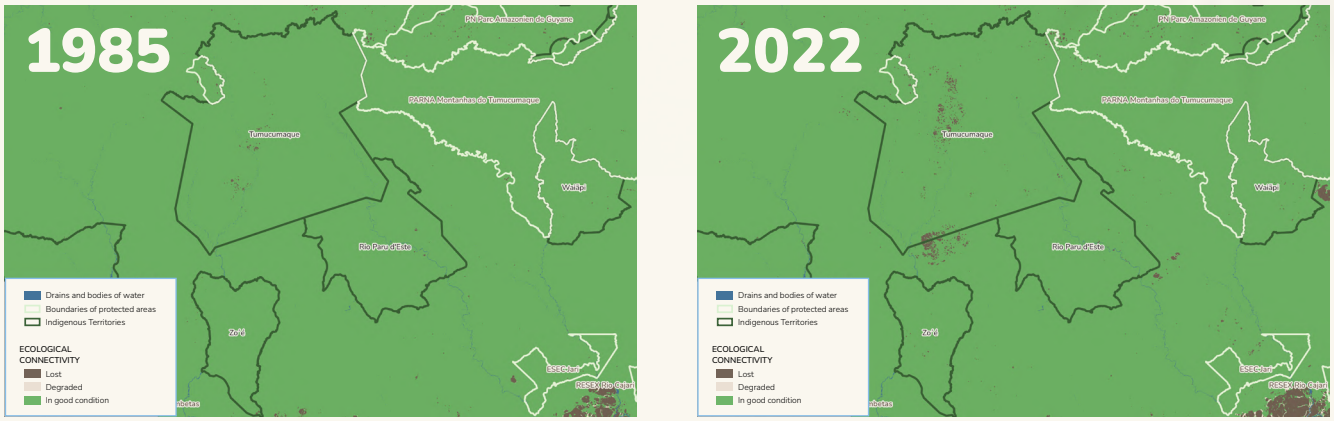
SOME CASES WHERE CONNECTIVITY IS MAINTAINED

Contrary to the scenarios in the states of Rondonia and Roraima, north of the Amazon River, in Indigenous lands such as **Tumucumaque and the Rio Negro** region, ecological connectivity is maintained, and the emergence of barriers or degradation is not significant. This is due to the **presence of Indigenous peoples who, with their knowledge, management, and territorial management systems, have guaranteed that ecosystems remain healthy, diverse, and resilient.**

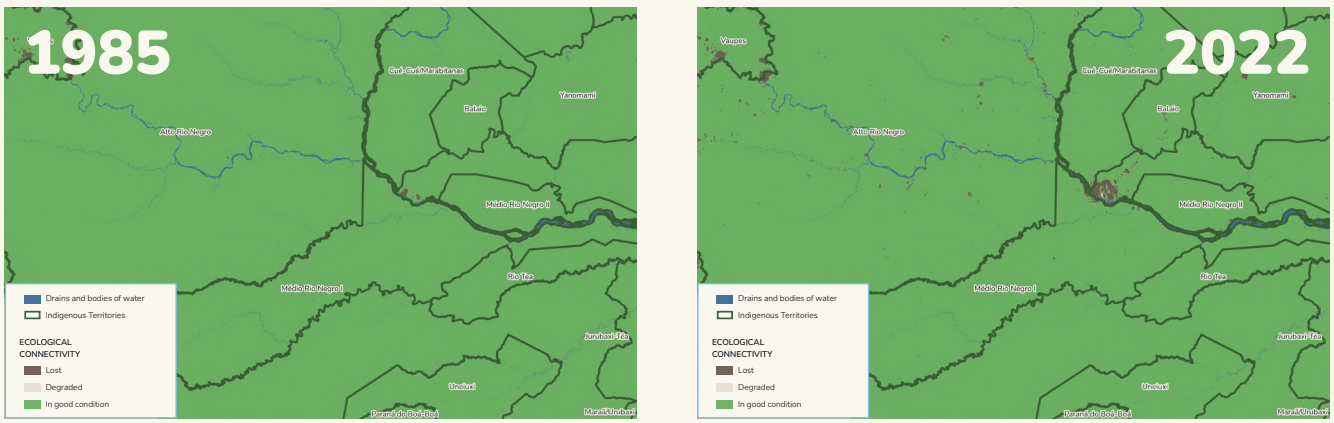
Map 5

Conservation of ecological connectivity in Tumucumaque, Amazonia, Brazil between 1985 and 2022.



Map 6

Conservation of ecological connectivity in the upper Rio Negro, Brazilian Amazon on the international border with Colombia between 1985 and 2022.



To a large extent, the effectiveness of designated protected areas in maintaining biodiversity depends on their interconnectedness. If these areas, where ecosystems maintain their qualities, become isolated patches within fragmented landscapes where economic activities are present, they are more vulnerable to losing their biodiversity and ecosystem processes, decreasing their contributions to natural cycles.

The results of the first phase of this study are consistent with findings on areas where deforestation has been avoided. It can therefore be **concluded that Indigenous territories are equally effective as** (and in some cases even more effective[8] than) **national protected areas in maintaining biodiversity dynamics and forest connectivity.** These results also confirm the feasibility of safeguarding connectivity in the region north of the Amazon River. They confirm the importance of designated areas in ensuring connectivity, such as protected natural areas and Indigenous territories. Last, they account for the **great challenge involved for humanity to regain and restore connectivity in the forests in some areas in the south of the region.** This applies in particular in patches of forest that are already isolated, causing a phenomenon called "forest dieback" (2011), coined by scientist Thomas Lovejoy.

The creation of ecological corridors and the restoration of degraded corridors is urgent for these areas. Additionally, establishing sustainable uses and modes of production, implementing ecological restoration processes, and developing green infrastructure are essential. Especially important is promoting community participation in conservation strategies and monitoring of fauna and flora.

8. En Colombia por ejemplo, el IDEAM ha registrado que los territorios indígenas mantienen un promedio de 98% de sus coberturas de bosque, demostrando su efectividad en la conservación inclusive más que las áreas protegidas.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What is the relevance of this analysis and its findings in the current context?

This is a historic moment for the Amazon. Not only because of the extreme droughts and low river levels in recent years, but also because two Amazonian countries will host two of the most important global environmental conferences in consecutive years: the Biodiversity COP16 in Cali, Colombia in 2024, and the Climate Change COP30 in Belém do Pará, Brazil, in 2025. This particular juncture puts the Amazon at the center of discussions, which is one of the most decisive regions for the future of the planet due to its role in regulating global climate, among other functions.

With regard to COP16, this study addresses targets 2 and 3 directly and target 1 indirectly of the Kunming-Montreal Global Biodiversity Framework


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TARGET 1:
COMPREHENSIVE SPATIAL PLANNING.

> "Ensure that all areas are under **participatory, integrated and biodiversity inclusive spatial planning** and/or effective management processes addressing land- and sea-use change, to bring the loss of areas of high biodiversity importance, including ecosystems of high ecological integrity, close to zero by 2030, while respecting the rights of Indigenous peoples and local communities."

This study shows the ecological integrity that is maintained in Indigenous territories through management based on Indigenous peoples' knowledge systems, confirming the importance of including their zoning and management instruments for the protection of their territories within the instruments of integral territorial planning considered by the States, as established in Target 1.

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TARGET 2:
RESTORE 30% OF ALL DEGRADED ECOSYSTEMS.

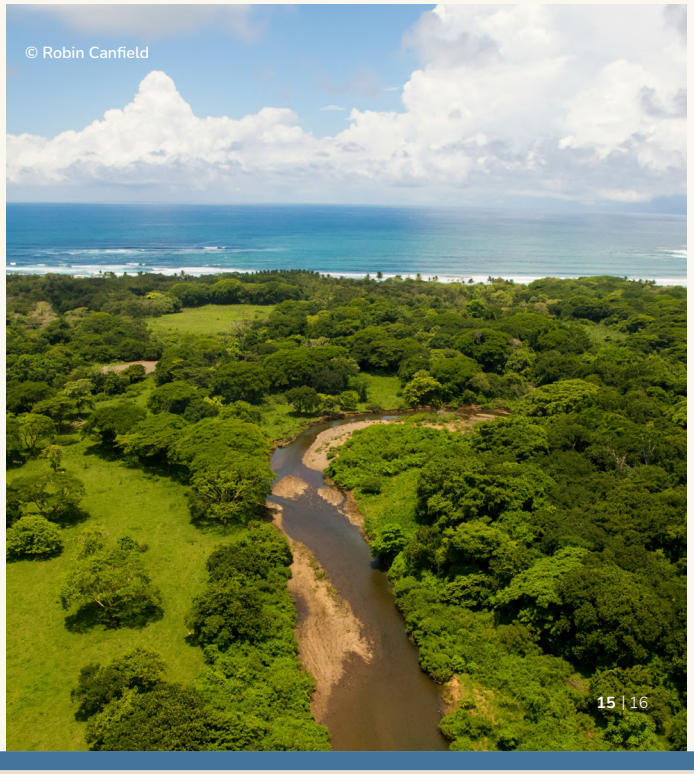
> "Ensure that by 2030 at least 30 per cent of areas of degraded terrestrial, inland water, and marine and coastal ecosystems are under effective restoration, in order to enhance biodiversity and ecosystem functions and services, ecological integrity and **connectivity**".

This study provides information on **where** restoration should take place, prioritizing areas that can recover degraded ecological corridors or rebuild lost ones. It also highlights the need for active restoration strategies in areas with high levels of degradation. In the case of areas with lost connectivity, the production model should be changed by introducing alternatives that promote and improve the quality of the ecological connectivity matrix. This can be achieved through sustainable and diversified production systems (ecological rehabilitation and regenerative systems).

Since the study highlights the significant role of Indigenous territories in safeguarding connectivity, traditional knowledge related to ecological restoration and food systems should be considered. This is essential for implementing restoration systems and methodologies that are appropriate for the region.

TARGET 3:
CONSERVE 30%OF LAND, WATERS, AND SEAS.

> "Ensure and enable that by 2030 at least 30 per cent of terrestrial inland water areas, and of marine and coastal areas, especially areas of particular importance for biodiversity and ecosystem functions and services, are effectively conserved and managed through ecologically representative, **well-connected** and equitably governed systems of protected areas and other effective area-based conservation measures, recognizing indigenous and traditional territories, where applicable, and integrated into wider landscapes, seascapes and the ocean, while ensuring that any sustainable use, where appropriate in such areas, is fully consistent with conservation outcomes, recognizing and respecting the rights of indigenous peoples and local communities, including over their traditional territories".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Fundación Gaia Amazonas

Este documento pone a disposición información sobre qué tan bien conectados están los ecosistemas terrestres amazónicos. Esto desde una perspectiva de conectividad funcional que demuestra que las áreas protegidas no son garantía de que los ecosistemas al interior de las mismas se encuentren en buen estado.

El estudio brinda elementos respecto a qué tan bien conectados, o no, están los sistemas de ANP y otras figuras de conservación. Lo que confirma la importancia de contemplar diversas estrategias de conservación para contar con sistemas bien conectados. También reafirma la relevancia del reconocimiento de los territorios indígenas como unidades de manejo que contribuyen a la protección de la biodiversidad. En la Amazonía, la única manera de salvaguardar la conectividad es integrando de manera efectiva a los territorios indígenas en las estrategias nacionales para la protección de la biodiversidad. Lo anterior desde el ejercicio pleno de su autonomía y a través de la implementación de sus derechos.

En una segunda fase, el estudio nos permitirá llevar conclusiones contundentes respecto al rol de los bosques amazónicos para el clima a la COP30 de Cambio Climático, que tendrá lugar en Brasil el próximo año, y seguir posicionando la importancia de la conectividad en sus tres dimensiones: ecosistémica, social y cultural. En este propósito, la Cumbre de Presidentes Amazónicos a realizarse en 2025 en Colombia, también será un escenario relevante para hacer seguimiento del compromiso adquirido por los presidentes de los países amazónicos en la Declaratoria de Belém: “garantizar la conservación, protección y conectividad ecosistémica y sociocultural de la Amazonía”.

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