



Policy Brief

Protected Areas Natural Solutions to Climate Change

Protected Areas are key in helping communities and nature face a changing climate. They can help buffer the impacts of extreme climate events, ensure maintained provision of ecosystem services that are fundamental for human wellbeing, such as clean water, facilitate the adaptation of people and nature to new climate conditions, and contribute to climate change mitigation. Integrating protected areas in global climate planning and finance within and outside the United Nations Framework Convention on Climate Change -UNFCCC- is an essential element in building resilience to climate change and supporting sustainable development globally.

Several technical and political arguments support the case for including protected areas in climate change strategies that can contribute to climate-resilient development and promote a safer climate future.

Technical arguments: Protected areas are effective and integrated solutions to climate change

Protected areas can contribute to climate change mitigation and facilitate adaptation to climate change risks by maintaining or increasing ecosystem health, integrity and connectivity in a climate change context. These areas can provide a wide range of ecosystem services such as climate regulation through carbon sequestration and storage, biodiversity conservation, nutrient cycling, agricultural pollination, protection from flooding and other natural disasters, cultural services and eco-tourism. Additionally, they provide food,

- fuel, building materials and medicines,
- as well as a significant proportion of the drinking water for a third of the world's 105 largest cities.^{2,3}

Benefits of protected areas for Adaptation:

- Protected areas can facilitate adaptation of nature and humans to climate risks by safeguarding ecosystem processes and ecosystem services.
- See Graph 1 in the next page.

Benefits of protected areas for Mitigation:

- Protected areas sequester and store carbon from the atmosphere into natural ecosystems and can help prevent the release of carbon from

"Protected areas are an essential part of the global response to climate change (...). Without them, the challenges would be even greater, and their strengthening will yield one of the most powerful natural solutions to the climate crisis."

Nigel Dudley, et al. 2010¹

"Protected areas not only provide us with a vital ecological safety net but also play a vital economic role through the valuable ecosystem services they provide, from supplying water and timber, to sustaining tourism"

Achim Steiner, UNEP⁴

"Protected areas are critical for the conservation of biodiversity in periods of rapid environmental change and are predicted to continue to play this role into the future"

Johnston et al. 2013⁵

Graph 1
Benefits of Protected Areas
for Adaptation

EbA and EbM

Ecosystem-based Adaptation (EbA) encompasses adaptation measures that use the contribution of ecosystems to maintain and increase resilience of socioecological systems and help nature and people adapt to climate change, while Ecosystem-based Mitigation (EbM) refers to mitigation measures based on ecosystems to maintain and enhance carbon capture and storage.

Forests

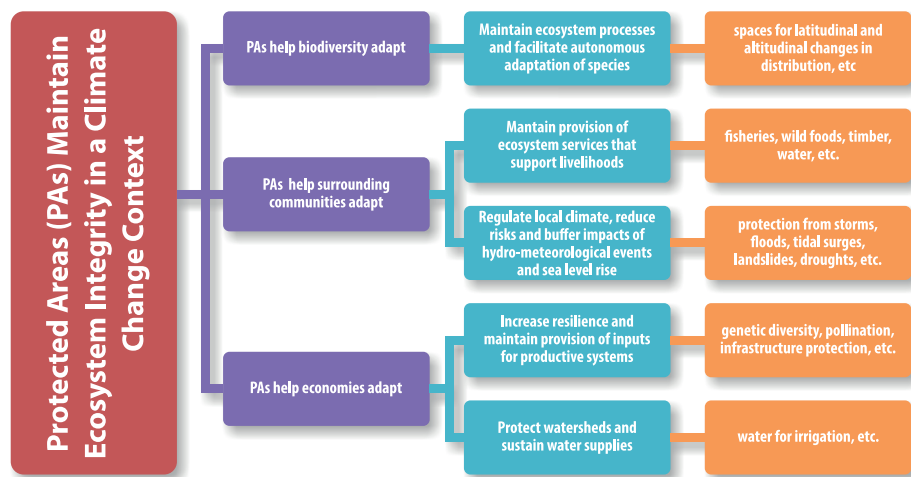
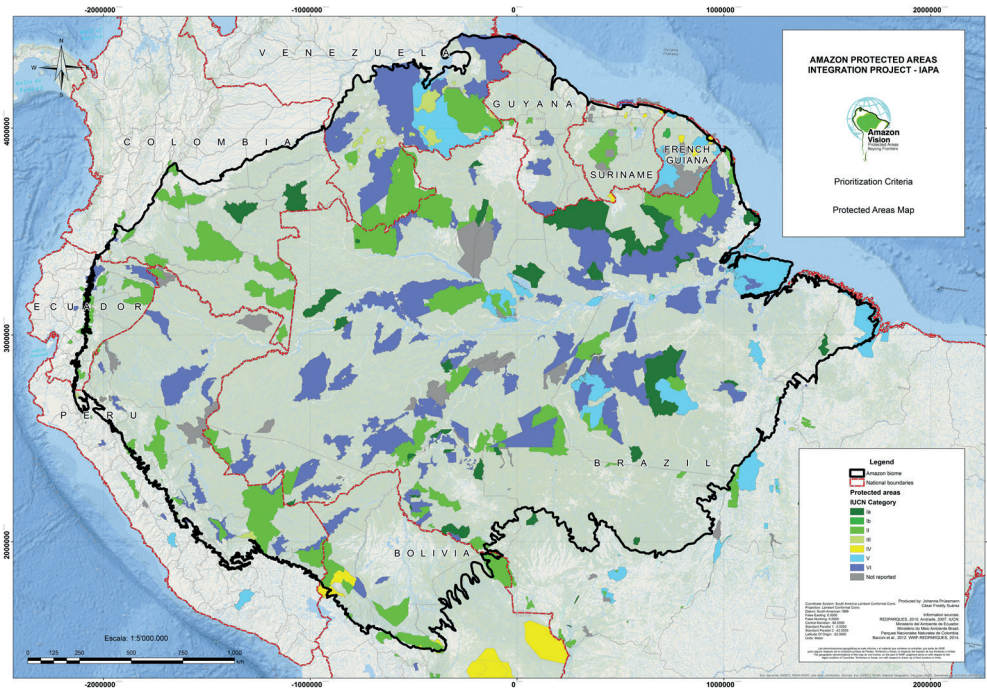
Forests are important carbon sinks and 7,8 million km² of forests, an area larger than Australia, are located inside protected areas⁸.

"The 'national parks' of the Amazon region depend on the integrity of the whole biome complex for long-term sustainability, maintenance of the hydrological cycle and resilience to climate change."

Sandra Charity,
WWF Living Amazon Initiative



Map 1
Amazon Protected Areas



vegetation and soils. Currently, protected areas store around 312 Gt, which is equivalent to at least 15% of global terrestrial carbon⁶. Protected areas provide an opportunity to increase carbon stocks, adding new sinks not previously protected by designating new protected areas, improving management of existing ones and expanding or modifying them.

However, carbon within protected areas is not guaranteed to stay on the ground as some of these areas are subject to pressures that result in greenhouse gas (GHG) emissions from

deforestation and degradation⁷. This means there is a potential to enhance carbon stocks of existing sinks in protected areas through Ecosystem-based Mitigation (EbM) actions such as reforestation and restoration.

The benefits for adaptation and mitigation often occur simultaneously when climate change strategies incorporate protected areas in their design. In addition, these areas offer the opportunity for mitigation and adaptation strategies to generate co-benefits for the wellbeing of surrounding communities, such as poverty alleviation.



The Amazon Vision

The Ecosystem-based Biodiversity Conservation Vision for the Amazon Biome is a commitment by the protected areas systems' directors of the Amazon countries, through the Latin American Network on Protected Areas -REDPARQUES-, to ensure the maintenance of an ecologically healthy Amazon biome in the context of climate change and other pressures. One that sustains its environmental and cultural contribution to local communities, indigenous peoples, the countries of the region, and the world. The initiative was recognized in the CBD COP 10 Decision X.31.

"The Amazon is very important in terms of the interaction between the biosphere and the atmosphere, which is why it is crucial for regional and global climate regulation"

Claudio Maretti,
ICMBio Brazil



Amazon Deforestation

Recent estimates suggest that 27% of the Amazon biome will have lost its trees by 2030 if the average deforestation rate for the last 10 years continues. This would signify a loss of 23 million ha of forest—an area larger than Great Britain—from 2010 to 2030¹².

"Protected Areas and Indigenous Territories are the most proven mechanisms for conserving natural ecosystems and cultures"

WWF Living Forests Report¹³

"Studies show that protected areas are the most effective vehicles to prevent ecosystem decline, yet protected areas remain imperfect and often require additional support"

Nigel Dudley, 2010¹⁷



Case Study:
Amazon Protected Areas

The Amazon is a particularly important biome. It is the world's largest tropical forest—totaling 6.7 million km², which is about twice the size of India—it holds 10% of the planet's known biodiversity, and its rivers discharge 15% of the world's freshwater into the Atlantic Ocean. The biome is composed of several types of interlinked ecosystems such as tropical evergreen forest (80% of the landscape), savannas, swamp forests and water bodies. The Amazon has a population of 34 million people distributed in 8 countries and one overseas territory, including 2.7 million indigenous peoples from 385 ethnic groups, 60 of which live in voluntary isolation⁹. There are over 390 protected areas in the Amazon and they cover close to 25% of the Amazon biome; totaling some 167 million hectares (about the size of Alaska). If we consider this area together with indigenous territories in the Amazon, nearly 50% of the biome is under some type of sustainable management or conservation land use. However, the current areas under protection are not sufficiently representative of Amazon ecosystems, which undermines the biome's overall resilience to climate change¹⁰.

The biome's ecological structure and location in the equatorial zone of South America between the Atlantic Ocean and the Andes, generates a hydrological engine that creates favorable climate conditions in the continent. The Amazon's hydrological functions are also relevant at a global scale, and its ecosystems contribute to global climate stabilization by storing 166 Gt of carbon, of which around 50 Gt—around 40% more carbon dioxide than humans emit globally each year—are in Amazon PAs.¹¹ The Amazon biome, however, is sensitive to changes in its ecological structure due to deforestation and degradation, which combined with climate change can affect the biome's ability to regulate the climate.

Advantages of protected areas over other ecosystem-based approaches in addressing climate change:

- Large global land surface cover: there are over 160,000 legally-designated national protected areas that cover approximately 28.4 million km² and represent 13% of global land surface or 5.6% of the planet's surface (an area larger than all of North America)¹⁴.
- Proven conservation effectiveness: protected areas are "among the oldest and most widespread" strategies to "conserve ecosystems"¹⁵. There is evidence of these areas' conservation effectiveness from globally aggregated studies, from studies concentrating on tropical countries and from studies focusing specifically on the Amazon¹⁶.
- Co-benefits: there is evidence that protected areas can play a role in poverty alleviation and in the sustainable development of surrounding communities¹⁸.
- Cost-efficiency: investment in protected areas is economically efficient as well as socially and environmentally desirable. Enhancing the role of protected areas in climate change strategies involves low startup costs because of the existing protected areas' governing institutions, budgets, information systems, capacities and infrastructure¹⁹.
- Robustness: protected areas provide adaptation solutions that can function under a wide range of future climate change scenarios, given that Ecosystem-based Adaptation -and Ecosystem-based Mitigation- actions work "with, rather than against, ecosystems and biodiversity"²⁰.
- Legal status and safeguards: legally-established protected areas offer clarified land tenure and rights to resources as well as a long-term commitment to conservation and management²¹.
- Resilience: protected areas can help increase resilience of landscapes if their management and design incorporate climate change considerations and embrace concepts such



“Well-designed protected area networks may be able to withstand climate change reasonably well”

Dudley & Stolton, 2010 ²²

Connectivity

Species distributions have shifted and will continue to shift under the effects of climate change, which is why connectivity between protected areas and with the wider landscape is critical for the conservation of biodiversity in the long term²⁴.

Aichi Targets

In 2010, nearly 200 countries committed to safeguarding in protected areas at least 17% terrestrial ecosystems and 10% marine areas by 2020 (Aichi Target 11). In 2015 only 13% of terrestrial and 2% of oceans and coastal waters were protected²⁷. Countries also committed to increase resilience of ecosystems and their contribution to climate change mitigation and adaptation (Aichi Target 15) In addition, parties agreed to “strengthen protected area networks including through the use of connectivity measures such as the development of ecological networks and ecological corridors and the restoration of degraded habitats and landscapes”²⁸.

“Certain places need greater protection because of their immense importance for the global ecosystem, or because they represent important water reserves and thus safeguard other forms of life.”

Pope Francis²⁹

as connectivity, representativeness, mobility, transboundary approaches and integrated landscape management.

- Integrated solutions: protected areas offer opportunities for climate change solutions that can simultaneously address the need for mitigation, adaptation and resilience building.

Adapting protected areas systems to resist the impacts of climate change

Protected areas will suffer impacts from climate change that can modify ecosystem functions and provision of ecosystem services, therefore undermining the ability of protected areas to offer natural solutions in terms of mitigation, adaptation and resilience.

Preparing protected areas to face climate change challenges the traditional notion of these areas as stationary places with fixed and impermeable boundaries. The distribution of ecosystems depends on precipitation, temperature and biogeographical patterns that will experience variations due to climate change, therefore modifying ecosystem distribution²³. As a consequence, the concept of protected areas will need to become much more flexible, and climate change considerations will have to be incorporated in management and design, in order for these areas to continue to fulfill their conservation objectives in a changing climate and to continue to provide benefits to society through ecosystem services.

Political arguments: global and national commitments regarding protected areas and climate change

- International instruments and agreements such as the 2030 Agenda for Sustainable Development recognize the need to conserve, restore and sustainably manage ecosystems (Sustainable Development Goals 14 and 15), and protected areas are the best know strategies to do exactly that, while addressing climate change at the same time.
- Their role in providing climate solutions is recognized in multilateral commitments such as the Aichi Goals of the Convention on Biological Diversity –CBD- COP 10, global civil society declarations such as the IUCN World Parks Congress’ Sydney Promise²⁵ and the REDPARQUES Declaration on Protected Areas and Climate Change, signed by 17 Latin American countries in August 2015²⁶ calling the UNFCCC to recognize and enhance the role of protected areas in global climate action.

- In addition, the New York Declaration on Forests (September 2014), the Lima Challenge (December 2014), Pope Francis’ ‘Laudato Si’ (Praise Be to You) encyclical letter issued in June 2015 and the 2015 report ‘A New Climate For Peace – Taking Action On Climate And Fragility Risks’ commissioned by the G7 members, contain elements that directly or indirectly

identify the role of protected areas in addressing climate change risks.

Protected Areas at the UNFCCC

The focus of the Climate Change Convention concerning ecosystems has mostly centered on reducing emissions from land use change and has relegated the role of protected areas for adaptation and resilience, and the need to adapt protected areas to climate change, outside any official UNFCCC recognition or support. This leaves a good amount of space for action, since the Convention’s own objectives call for the adoption of measures that allow ecosystems to naturally adapt to climate change and advocate for comprehensive, cost-effective and precautionary measures to address climate change³⁰.

Initial steps towards building support for a more explicit integration of protected areas within the UNFCCC inclu-

- ded a decision taken at the Sixteenth Conference of the Parties –COP– in Cancun, Mexico in 2010, to recognize the benefit for climate change strategies of taking account of the “spatially explicit information on biodiversity priority areas” developed under the PoWPA³¹, and the Fifth Assessment Report of the Intergovernmental Panel on Climate Change –IPCC–, which recognized that resilience must be at the center of climate action, and that protected areas are examples of Ecosystem-based Adaptation strategies in Latin America and the Caribbean³².
- At the national level, parties to the Convention are already contributing to climate resilience through the management and design of their national protected area systems, and countries such as Colombia, Ecuador, Jordan and Mexico, included protected areas-based climate actions in their Intended Nationally Determined Contributions –INDC- for COP21:

Protected areas-based action in INDC submitted for COP21

Colombia	Increase the area under protection by 2.5 million hectares in new protected areas.
Ecuador	Include protected areas maintenance and potential expansion as well as management with climate change criteria in the National Plan for Climate Change.
Jordan	Identify climate-vulnerable ecosystems within the National Network of Protected Areas, extend conservation efforts and design buffer zones for strengthening adaptive capacity.
Mexico	Conserve and restore ecosystems in order to increase ecological connectivity of all natural protected areas.

The Programme of Work on Protected Areas –PoWPA–

PoWPA is a program developed under the CBD (Decision VII/28) that highlights protected areas and other conservation schemes as essential to conserve global biodiversity, provide ecosystem services, preserve heritage, contribute to poverty alleviation and employment generation, and provide research opportunities including for coping with climate change. The PoWPA calls countries to integrate climate change adaptation in protected areas planning and management strategies, and in protected areas systems design (Goal 1.4). The CBD COP 11 in 2012 called for the attainment of all PoWPA goals that are lagging behind and for the mainstreaming and integration of protected areas into wider land- and seascapes, including using protected areas as natural solutions in ecosystem-based approaches to climate change adaptation and mitigation (Decision XI/24). PoWPA targets, however, do not go beyond 2015 and the Programme will soon need to evolve to include climate change issues in a better way.

“It is crucial to expand protected areas in a targeted manner—thus supporting efforts to tackle climate change, and protecting biodiversity and the ecosystem services that sustain all of us.”

Achim Steiner, UNEP.

“Until now, protected areas have not received the recognition they deserve in the international climate change negotiations. Forests, wetlands and coastal protected areas are our main shield against the current and future devastating effects of this phenomenon”

Mary Lou Higgins,
WWF Colombia

Protected Areas and Climate Change Declaration

The Latin American Network for Technical Cooperation on Protected Areas –REDPARQUES- issued a Declaration on the role of protected areas as natural solutions to climate change, to be presented at the UNFCCC COP 21 (Paris, 2015), at the CBD COP 13 (Cancun, 2016) and beyond. In the Declaration, countries commit to scale-up regional coordination and efforts for the design and management of protected areas with climate change criteria, and call for the UNFCCC to increase support for protected areas and to include them in the Conventions' discussions and actions. So far, 17 Latin American countries have signed the Declaration, including 7 of the 8 Amazon countries and the one overseas territory that share the Amazon biome: Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, French Guiana (France), Guatemala, Guyana, Honduras, Mexico, Nicaragua, Panama, Peru, Uruguay and Venezuela. WWF's Living Amazon Initiative supported REDPARQUES in the process.



A more explicit recognition of the role of protected areas as natural solutions to climate change would help scale-up efforts to a global level for the integration of these areas in climate change strategies and for facilitating protected areas' adaptation to climate change.

Recommendations to Mainstream Protected Areas in Climate Change Strategies

At the UNFCCC

- Include protected areas in National Contributions and submissions to the UNFCCC.
- Include protected areas in project bids to the Green Climate Fund and other multilateral and bilateral cooperation efforts.
- Develop research on the potential contributions of protected areas to mitigation, adaptation and resilience, and on adaptation of protected areas through the Nairobi Work Program and/or other relevant spaces.
- Encourage integration of National Biodiversity Strategies and Action Plans with National Adaptation Plans.
- Support action based on protected areas for implementation of National Contributions.

Nationally

- Include climate change mitigation and adaptation criteria in protected area design and management including connectivity, representativity and redundancy.
- Integrate the role of protected areas in climate change mitigation and adaptation plans at the national and local levels.
- Promote research to monitor, verify and report the contribution of protected areas to domestic climate change mitigation and adaptation strategies and international commitments.
- Raise awareness among people and decision-makers on the role of protected areas for mitigation, adaptation, resilience and sustainable development.
- Integrate existing protected areas through landscape approaches.
- Expand, reshape, increase level of protection and/or create new protected areas to cover ecosystems that are key for facing climate change.

REDD+ in Protected Areas

REDD+ can be implemented to conserve or restore carbon stocks by improving the ecological health, integrity and connectivity of ecosystems in existing protected areas. This is the case for both protected areas that are degraded (particularly those exposed to threats, vulnerable to climate change and/or that lack sufficient resources or management capacity to maintain good levels of conservation), and for protected areas with well-conserved mature forests that have the capacity to sequester additional carbon³³. Activities can include improving management effectiveness and restoring degraded areas, among others³⁴.

REDD+ can also be implemented for the establishment of new protected areas in carbon-rich landscapes.

The Green Climate Fund -GCF- and protected areas

The GCF strives to fund a balanced portfolio of impactful adaptation and mitigation actions, while promoting social and other co-benefits³⁵. The GCF's Results Management Framework, which is the basis for its resource allocation, considers funding nature-based solutions that are compatible with protected areas for mitigation and adaptation. These include "reduced emissions from (...) deforestation, forest degradation, and through sustainable forest management, and conservation and enhancement of forest carbon stocks"; as well as "increased resilience of health and well-being, and food and water security" and "increased resilience of ecosystems and ecosystem services". Examples cited of possible performance indicators are area of coastline rehabilitated, restored or protected, number and area of ecosystems-based adaptation systems established or enhanced.³⁶

"The probable cost of adaptation for existing terrestrial and marine protected areas networks amounts to \$65 to \$80 billion dollars"

Parry et al, 2009³⁷

"About 90,000 (more than two-thirds) of the world's protected areas do not have management plans. Of those plans that do exist, only a miniscule fraction incorporate climate change issues"

Jamison Ervin, UNDP

Regionally

- Promote transboundary protected areas to increase resilience of key ecosystems and biomes.
- Use regional and biome-level approaches for the design and management of ecological networks of protected areas.
- Share knowledge and exchange experiences on protected areas' management with climate change criteria and on integrating protected areas' role in climate change strategies.

Countries and organizations that support greater recognition of Protected Areas' role as Natural Solutions to Climate Change include:

- Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, French Guiana (France), Guatemala, Guyana, Honduras, Mexico, Nicaragua, Panama, Peru, Uruguay and Venezuela.
- CBD Secretariat
- HRH Prince Charles and the International Sustainability Unit of the Prince's Charities
- IUCN
- REDPARQUES
- World Commission on Protected Areas
- WWF

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This is another contribution to the Amazon Conservation Vision developed by the Amazon Countries under the CDB framework's program related to Protected Areas (CBD – PoWPA). To find out more about the Amazon Conservation Vision and the 'Protected Areas, Natural Solutions to Climate Change' (NASCC) project implemented by REDPARQUES with WWF's Living Amazon Initiative, thanks to funding from the German Ministry of Environment –BMUB- and WWF Germany, click here: <http://bit.ly/1F99ezO>

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