



Nature-based Solutions to Climate Change

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About IUCN



Established in 1948 as a Union of Members (1,400+ members)

- States and government agencies at national and subnational levels
- Non-governmental organisations
- Indigenous peoples' organisations
- World Conservation Congresses are the highest organ of IUCN



Commissions (18,000+ volunteer experts)

- Species Survival Commission (SSC)
- World Commission on Protected Areas (WCPA)
- World Commission on Environmental Law (WCEL)
- Commission on Ecosystem Management (CEM)
- Commission on Environmental, Economic and Social Policy (CEESP)
- Commission on Education and Communication (CEC)
- Climate Crisis Commission (CCC) – *established 2021*



Secretariat (900+ staff)

- Headquartered in Gland, Switzerland
- 11 regional offices; 50+ country offices
- IGO observer status in the United Nations General Assembly and Rio Conventions
- Advisory body to the UNESCO World Heritage Convention
- Accredited agency to the Global Environment Facility (GEF) and Green Climate Fund (GCF)



What are Nature-based Solutions (NbS)?

Nature-based Solutions are: *“actions to protect, sustainably manage and restore natural or modified ecosystems, that address societal challenges (e.g. climate change, food and water security or natural disasters) effectively and adaptively, simultaneously providing human well-being and biodiversity benefits”*

- First used by World Bank and IUCN in 2008/2009
- Above definition adopted by 1,400+ IUCN members at the IUCN Congress in Hawaii, USA in 2016 ([Res. 69](#))
- Cited in 2000+ peer reviewed articles in recent years
- Cited by IPCC and IPBES in 2021
- Incorporated in the [UNEA resolution on NbS](#) in 2022





Nature-based
solutions



Nature-derived
solutions



Nature-inspired
solutions

“
NbS are often described as ‘no-regret’ options, providing benefits to people in a range of scenarios
”

“
Nature-based Solutions have a vitally important role to play in addressing both the causes and consequences of climate change
”

NbS for Climate Change Mitigation

THREE STEPS TO NATURAL COOLING

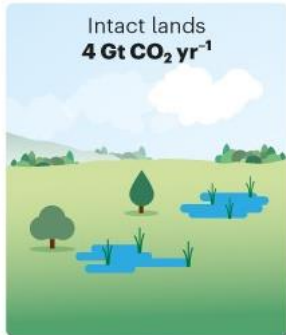
Protect intact ecosystems, manage working lands and restore native cover to avoid emissions and enhance carbon sinks.

Nature-based solutions could save **10 gigatonnes** of carbon dioxide equivalent per year

Avoided emissions **5 Gt CO₂ yr⁻¹**

Enhanced sinks **5 Gt CO₂ yr⁻¹**

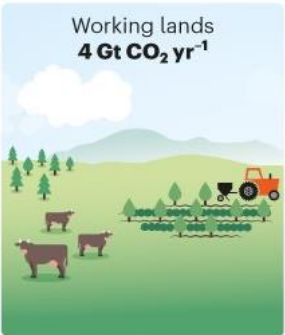
Intact lands
4 Gt CO₂ yr⁻¹



PROTECT

Forests, grasslands and more

Working lands
4 Gt CO₂ yr⁻¹



MANAGE

Land for crops, grazing and timber

Native cover
2 Gt CO₂ yr⁻¹



RESTORE

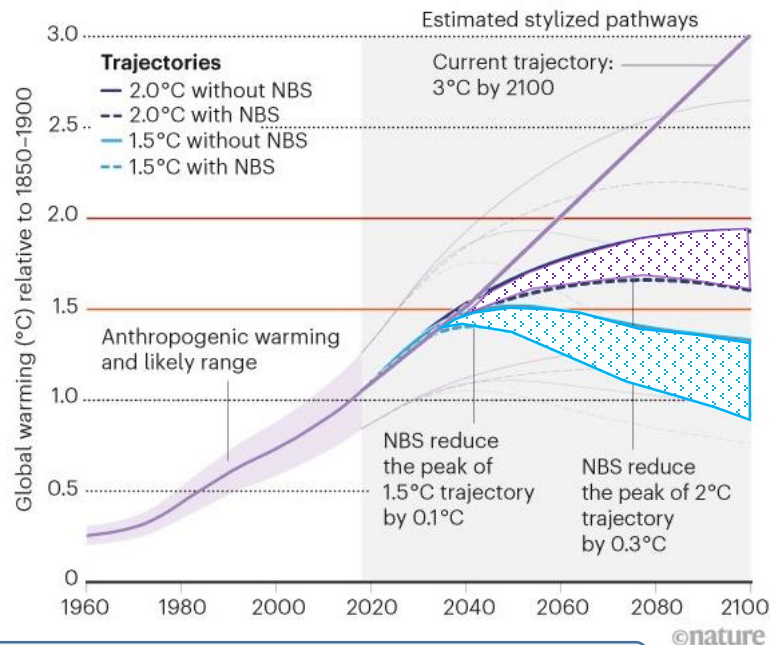
Forests, wetlands and more

©nature

Underlying data are in Supplementary information, Table S1.

THE LONG GAME

Nature-based solutions (NBS) could reduce the global peak temperature and suppress warming beyond 2100 — if they are ambitious and designed for longevity.



10 Gt CO₂ yr⁻¹ is more than the emissions from the entire global transportation sector

Nature-based Solutions are critical for achieving Net Zero

Net Zero by 2050

=

Ambitious Emissions Reductions
(decarbonization of global economy)

+

Nature-based Solutions
(protect, manage & restore ecosystems)

- **at least 5 GtCO₂e/year at 2030** (max est: 11.7 GtCO₂e/year)
- **at least 10 GtCO₂e/year at 2050** (max est: 18 GtCO₂e/year)

- [UNEP and IUCN \(2021\) Nature-based solutions for climate change mitigation](#)



NbS for Climate Change Adaptation and Disaster Risk Reduction

Mangroves → Coastal Resilience

- Mangroves provide over **\$65 billion in flood protection**, and **safeguard 15 million people against flooding per annum**¹
- Of all the world's ecosystems, mangroves are the **most effective per unit area at trapping and storing carbon**²

Green spaces → Urban Resilience

- Green spaces absorb **storm water run-off**, reduce **urban heat-island effect**, and lower **drought impacts** and **remove carbon**
- *Sponge City* – Xiamen, China
- *Green Cities, Clean Waters* – Philadelphia, USA

Wetlands helped to avoid US\$ 625 million in direct flood damages during Hurricane Sandy in 2012³

¹ Menéndez, P., Losada, I.J., Torres-Ortega, S., Narayan, S., & Beck, M.W. 2020. 'The Global Flood Protection Benefits of Mangroves', *Scientific Reports*, 10: 4044).

² Spalding, Mark D and Leal, Maricé (eds). 2021. [The State of the World's Mangroves 2021](#). Global Mangrove Alliance.

³ Narayan et al. 2017. 'The Value of Coastal Wetlands for Flood Damage Reduction in the Northeastern USA', *Scientific Reports*, 7(9463)



Established best practice for NbS implementation

Underpinned by four operational caveats

01

CUT EMISSIONS

02

**CONSERVE &
PROTECT EXISTING
ECOSYSTEMS**

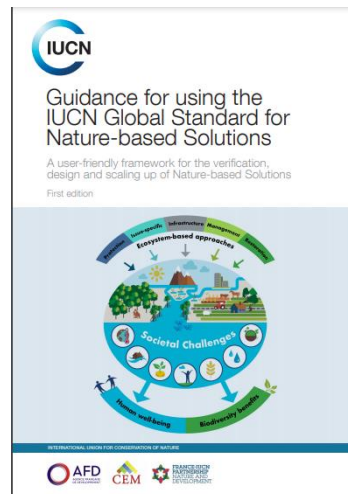
03

**BE SOCIALLY
RESPONSIBLE**

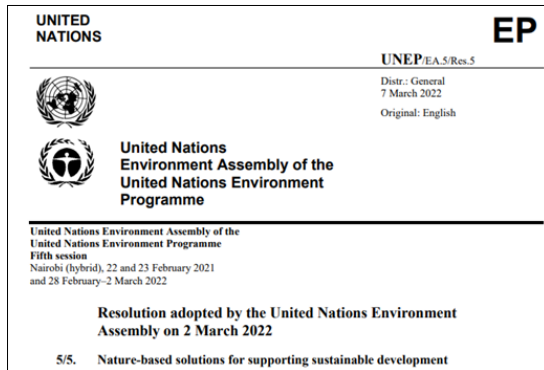
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**BE ECOLOGICALLY
RESPONSIBLE**

IUCN Global Standard for NbS™



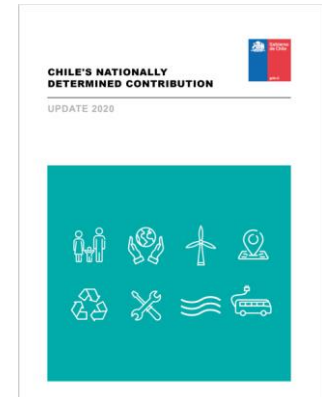
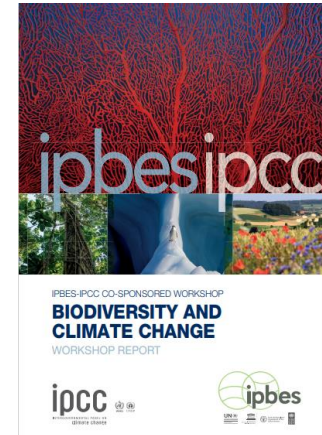
Growing policy uptake and recognition of NbS



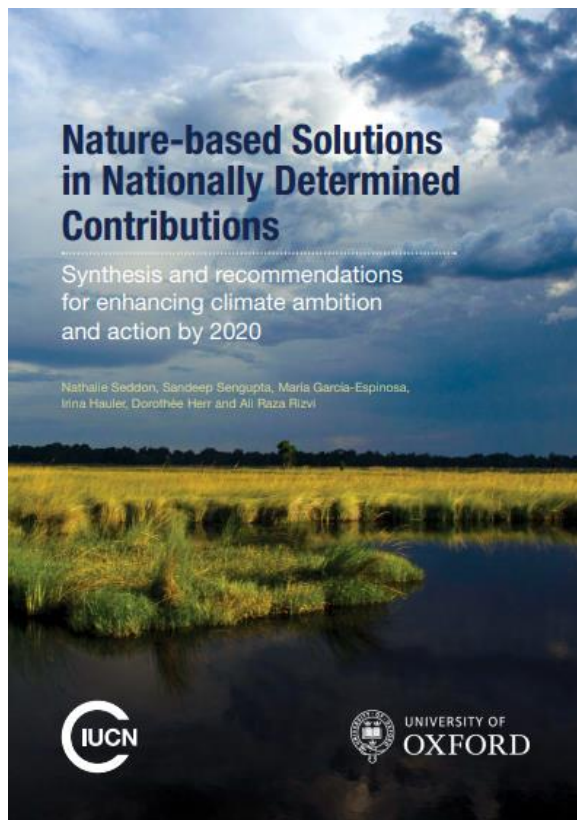
FACT SHEET: Biden-Harris Administration Announces Roadmap for Nature-Based Solutions to Fight Climate Change, Strengthen Communities, and Support Local Economies

New actions and recommendations announced at COP27 will make nature-based solutions a go-to option for fighting climate change and boost progress towards U.S. climate goals

Today at COP27 in Egypt, the Biden-Harris Administration is releasing the Nature-Based Solutions Roadmap, an outline of strategic recommendations to put America on a path that will unlock the full potential of nature-based solutions to address climate change, nature loss, and inequity. This marks the first time the U.S. has developed a strategy to scale up nature-based solutions.



NbS in Nationally Determined Contributions (NDCs)



Source: [IUCN and Oxford University \(2019\) Nature-based Solutions in Nationally Determined Contributions](#)

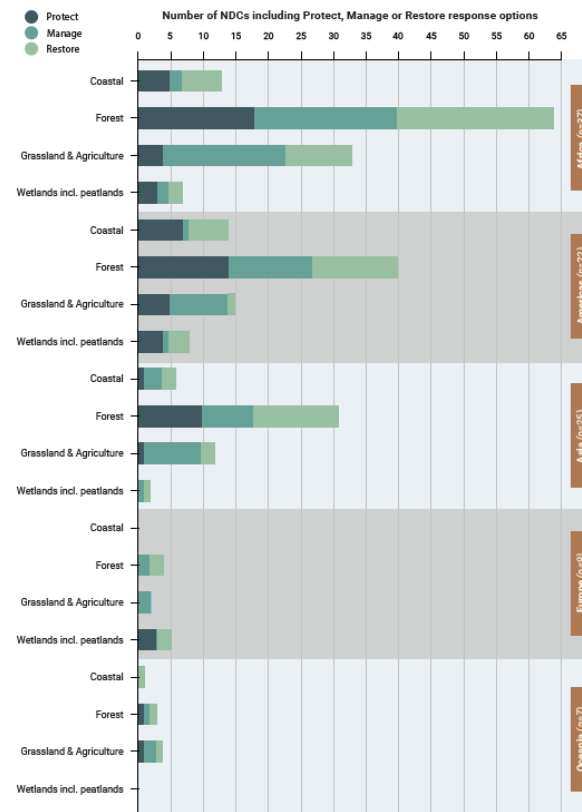


Figure 4: Nature-based solutions in NDCs more often focus on forest than on other ecosystems
(Source: own summary based on a review of 100 NDCs)
Protect, Manage and Restore actions counted once per ecosystem; n=number of NDCs reviewed per region.

Source: [UNEP and IUCN \(2021\) Nature-based Solutions for climate change mitigation](#)

Recognition of nature in recent UNFCCC COPs

- **2019 – Decision 1/CP.25 “Chile Madrid Time for Action”**

Para 15: Underlines the essential contribution of nature to addressing climate change and its impacts and the need to address biodiversity loss and climate change in an integrated manner



- **2021 – Decision 1/CP. 26 “Glasgow Climate Pact”**

Preamble: Recognised the interlinked global crises of climate change and biodiversity loss, and the critical role of protecting, conserving and restoring nature and ecosystems in delivering benefits for climate adaptation and mitigation, while ensuring social and environmental safeguards



- **2022 – Decision 1/CP.27 “Sharm el-Sheikh Implementation Plan”**

Preamble: Underlines the urgent need to address, in a comprehensive and synergetic manner, the interlinked global crises of climate change and biodiversity loss in the broader context of achieving the Sustainable Development Goals, as well as the vital importance of protecting, conserving, restoring and sustainably using nature and ecosystems for effective and sustainable climate action



Para 48: Encourages Parties to consider, as appropriate, nature-based solutions or ecosystem-based approaches, taking into consideration United Nations Environment Assembly resolution 5/5, for their mitigation and adaptation action while ensuring relevant social and environmental safeguards

Enhancing Nature-based Solutions for an Accelerated Climate Transformation (ENACT)

VISION

Enhanced protection and **resilience of at least 1 billion vulnerable people** (including at least 500 million women and girls)

Up to 2.4 billion hectares of healthy natural ecosystems secured through protection of 45 million ha, sustainable management of 2 billion ha, and restoration of 350 million ha

Significantly increased global mitigation efforts through protecting, conserving and restoring carbon-rich terrestrial, freshwater and marine ecosystems

THE PARTNERSHIP WILL

- **Bring coherence** to and strengthen collaboration between existing partnerships and initiatives working on different areas of NbS.
- **Amplify and support accelerated implementation** of current and new partners' NbS commitments through documenting, profiling, and promoting promising practices and success stories as well as challenges to be overcome.
- **Facilitate NbS policy dialogue** to inform negotiations across the Rio Conventions.
- **Build a united, collective narrative** of the global value and impact of NbS, including through publication of an annual State of Nature-based Solutions report for the COP Presidencies.

Recognition of NbS in CBD COP15?



❖ We need an **ambitious post-2020 Global Biodiversity Framework** with concrete goals and targets to halt and reverse biodiversity loss by 2030, including to:

- Conserve at least 30% of terrestrial, inland water, and marine and coastal ecosystems globally, including all key biodiversity areas (KBAs)
- Have distinct targets for restoration of degraded ecosystems globally aligned with the *UN Decade on Ecosystem Restoration*
- Increase financing for biodiversity to at least US\$ 200 bn/year and reduce at least US\$ 500 bn/year in harmful subsidies
- For more, see IUCN position paper for CBD here: www.iucn.org/cop15



2020 UN BIODIVERSITY CONFERENCE
COP 15 - CP / MOP 10 - NP / MOP 4
Ecological Civilization-Building a Shared Future for All Life on Earth
KUNMING – MONTREAL

❖ An **explicit reference to NbS in GBF targets 8 and 11** can help to:

- Ensure **clearer policy alignment for joint delivery** across 3 Rio Conventions
- Facilitate **stronger implementation at scale** of NbS
- Provide **greater confidence** to ongoing NbS efforts undertaken by both state and non-state actors
- Enable Parties/governments to exercise **greater oversight and accountability** on the use of NbS

Thank you for your attention

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