



# The role of nature-based solutions in addressing climate change

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# What are nature-based solutions?



- **IUCN defines nature-based solutions as:** *“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”*

“

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

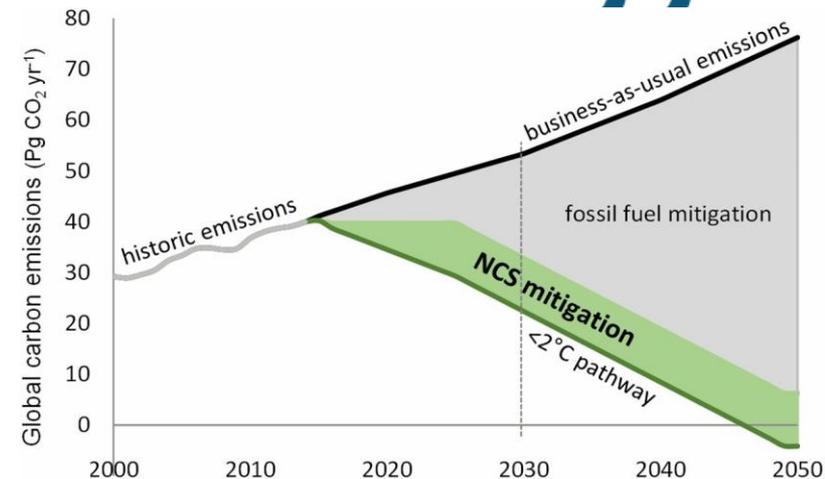
”

- Formally adopted by **IUCN’s 1,300+ State and NGO Members** at the *2016 IUCN World Conservation Congress* held in Hawaii, USA – **representing the broadest agreed view** of the global conservation community

# Benefits of nature-based solutions from a climate perspective

- Nature-based solutions can provide **over one-third of the cost-effective climate mitigation needed by 2030** to stabilize warming to below 2°C (PNAS 2017)
- **Land-based carbon removal options** – including forests, wetlands and soils – offer a **total annual emissions reduction potential of up to 12 GtCO<sub>2</sub>e** (UNEP 2017)

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



# World's largest tropical peatland found in Congo basin

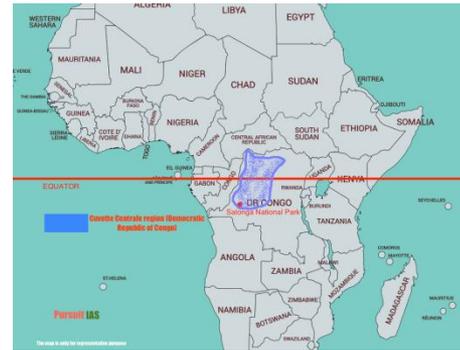
Carbon-rich peatlands could store three years' worth of world's total fossil fuel emissions, say scientists

© Kim Kjerstedt



*Cuvette Centrale peatlands in the Congo Basin*

Dargie, G. C. et al (2017) Age, extent and carbon storage of the central Congo Basin peatland complex, *Nature*, 542, 86-90.



**20 years**  
worth of US  
fossil fuel  
emissions



# Wetlands helped to avoid US\$ 625 million in direct flood damages during Hurricane Sandy in 2012

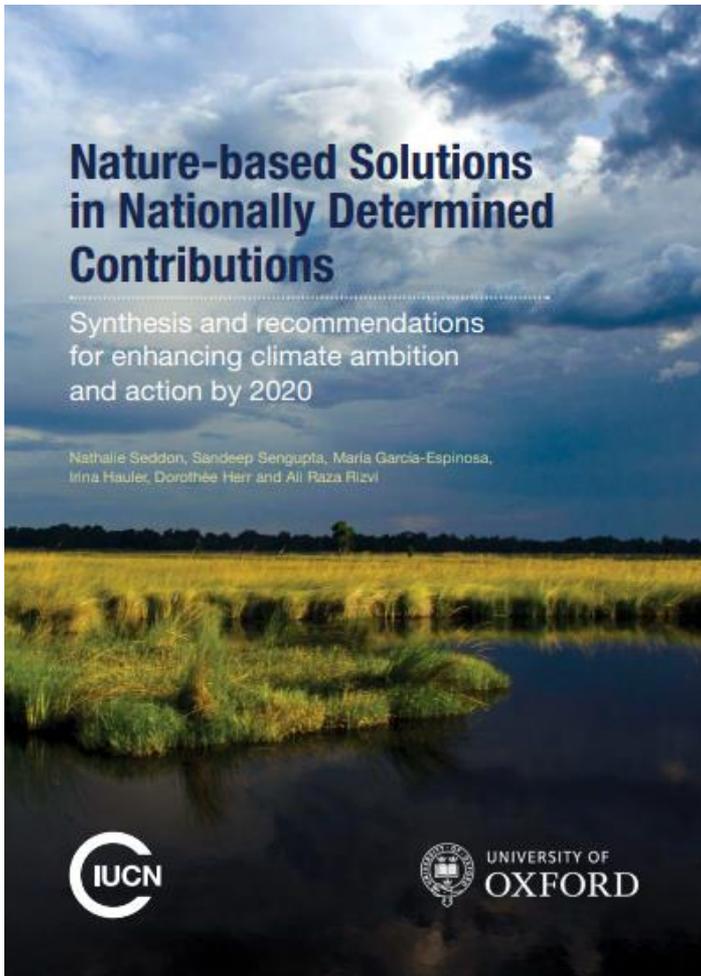


More generally, **coastal wetlands in the US** have been estimated to provide **storm protection services worth US\$ 23 billion annually**

*Source: Costanza et al. 2008*

Coastal wetlands at Parker River National Wildlife Refuge in Newburyport, Massachusetts.  
Photo by Kelly Fike/U.S. Fish and Wildlife Service; Study cited: Narayan et al., 2017, *Scientific Reports*

# Nature-based solutions in Nationally Determined Contributions (NDCs)



- Presents an **overview** of the current level of ambition for NbS within NDCs
- Based on an **analysis** of 10 major comparative assessments of nature's prominence in NDCs to date
- Provides **recommendations** on how climate ambition within future NDCs can be raised through the more substantive inclusion of NbS

# Key findings

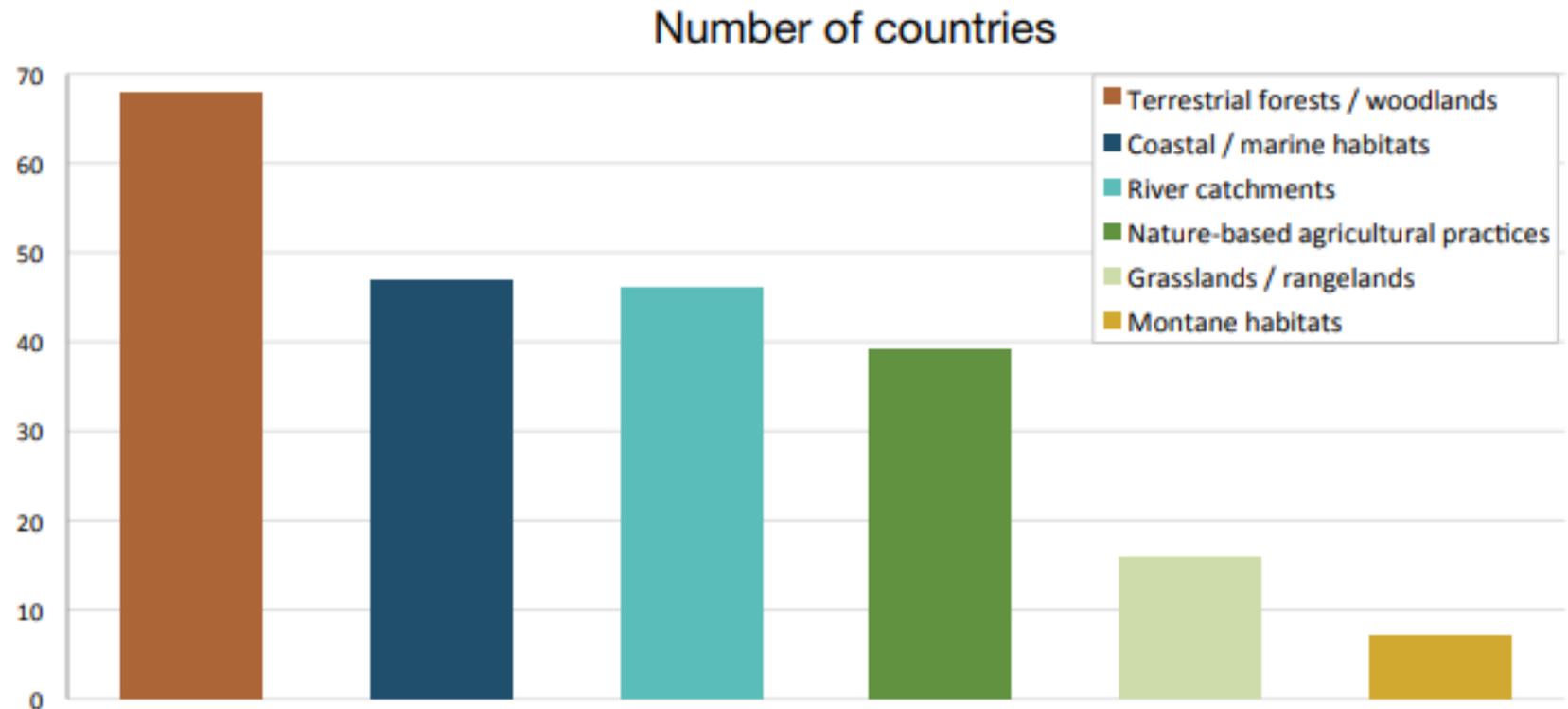
- **At least 66% of Paris Agreement signatories include NbS in one form or the other to help achieve their mitigation/adaptation goals**
- **But more concrete, evidence-based targets for NbS are urgently needed**
  - *E.g. over 70% of NDCs are estimated to contain references to efforts in the forest sector, but only 20% of these include quantifiable targets, and only 8% include targets expressed in tonnes of CO<sub>2</sub>e*
  - *E.g. only around 17% of NDCs with current or planned actions involving NbS for adaptation (i.e. ecosystem-based adaptation) set quantifiable and robust targets*
- **NbS that synergise adaptation and mitigation are underused**
  - *E.g. only 17 countries aim to address adaptation and mitigation together*

# Need for more concrete targets



**Figure 2.** Global distribution of countries that included in their NDCs: (a) NbS in the mitigation component; (b) NbS in the adaptation component; (c) explicit mention of synergies between mitigation and adaptation actions; and (d) several quantitative adaptation targets. Figures generated using the Nature-based Solutions Policy Platform in August 2019 ([www.nbspolicyplatform.org](http://www.nbspolicyplatform.org)).

# Major opportunity to scale up NbS in non-forest, carbon-rich, ecosystems



**Non-forest ecosystems – grasslands, drylands, mangroves and peatlands, etc. – are relatively poorly represented in NDCs**

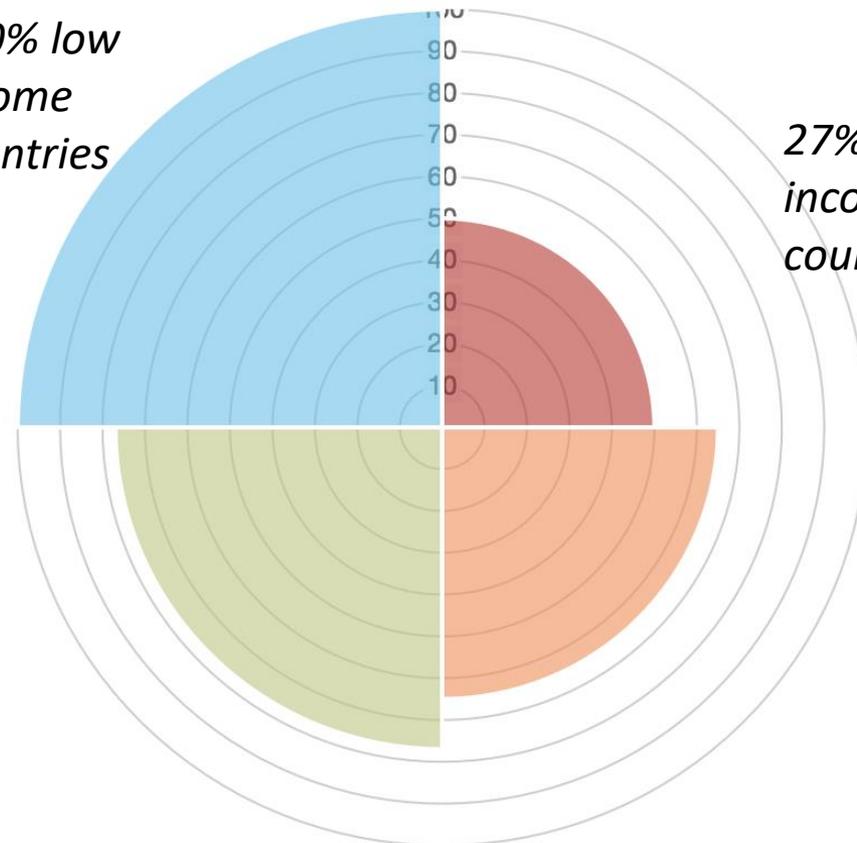
*E.g. only 19% of NDCs from countries with coastal ecosystems include them in their mitigation components, and only 39% in their adaptation components*

# 'Low income' countries, as classified by the World Bank, currently include NbS actions more prominently in their NDCs

- High income
- Upper middle income
- Lower middle income
- Low income

*100% low income countries*

*27% high income countries*



This could be, in part, due to the implicit rather than explicit inclusion of NbS by higher-income/developed countries in their NDCs

# All countries can strengthen their future NDCs by substantially incorporating NbS in them

1. *Include NbS actions across a **wide range of naturally occurring ecosystems***
2. *Step up NbS actions that address **climate change adaptation and mitigation** as well as support **sustainable development and biodiversity conservation***
3. *Include more **specific, measurable and robust NbS targets** in NDCs and associated national implementation plans*
4. ***Align NDCs with other relevant national plans and international processes***
5. ***Mobilise greater funding for NbS to climate change***

# Reasons for optimism

- **Growing global awareness of the role and importance of nature-based solutions**
  - UN Climate Action Summit
  - NbS track co-chaired by China & New Zealand (*NbS for Climate Manifesto*)
  - UNFCCC COP25, Madrid
- **Increasing NbS investments by countries and other social actors**
- **2020 ‘super year’ for Nature** – to continue the momentum for global and national ambition and action





# Thank you

**IUCN**

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