

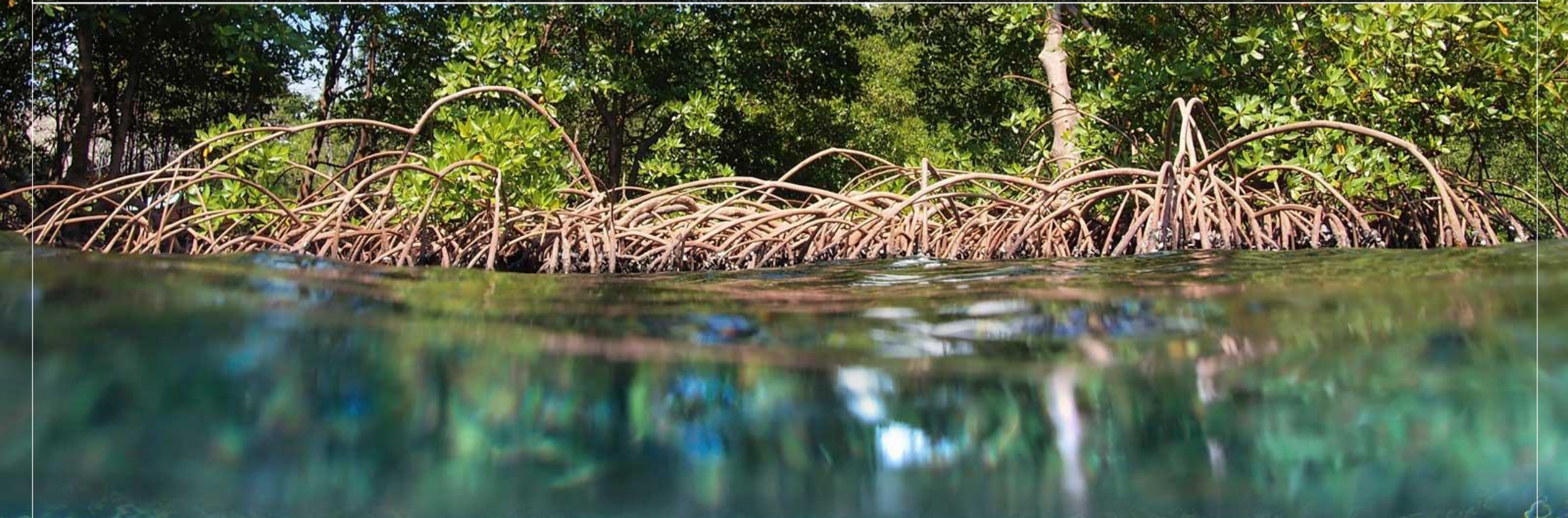


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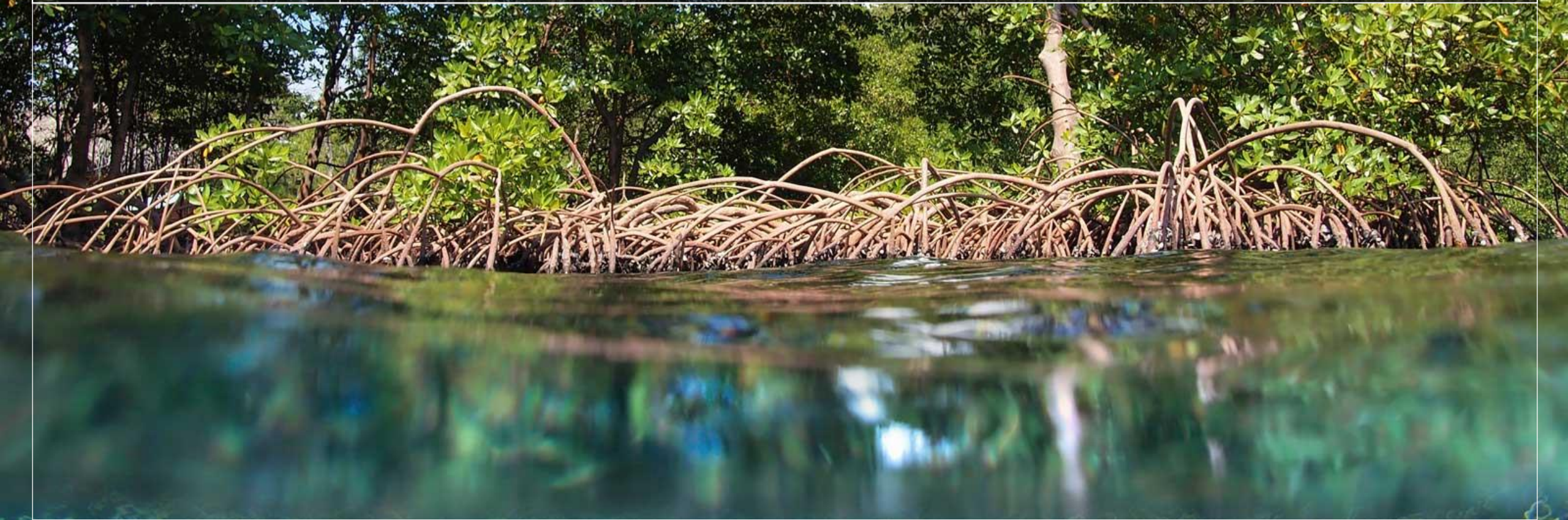
# PROTEUS ANNUAL MEETING

20<sup>th</sup> – 22<sup>nd</sup> June 2018, David Attenborough Building, Cambridge, UK





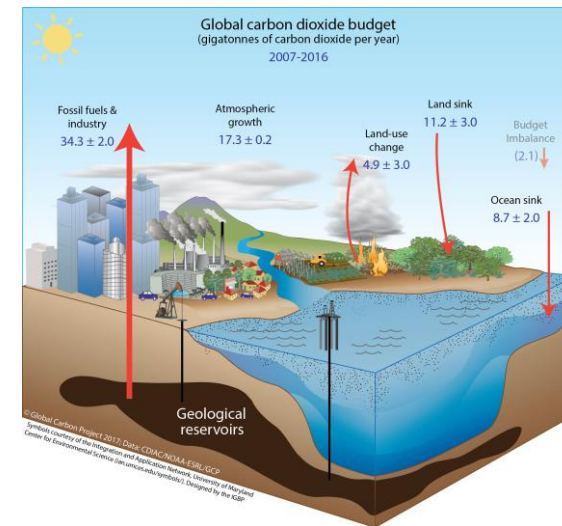
## **HORIZON SCANNING: EMERGING ISSUES AND NEW DEVELOPMENTS**



## **BLUE AND GREEN CARBON**

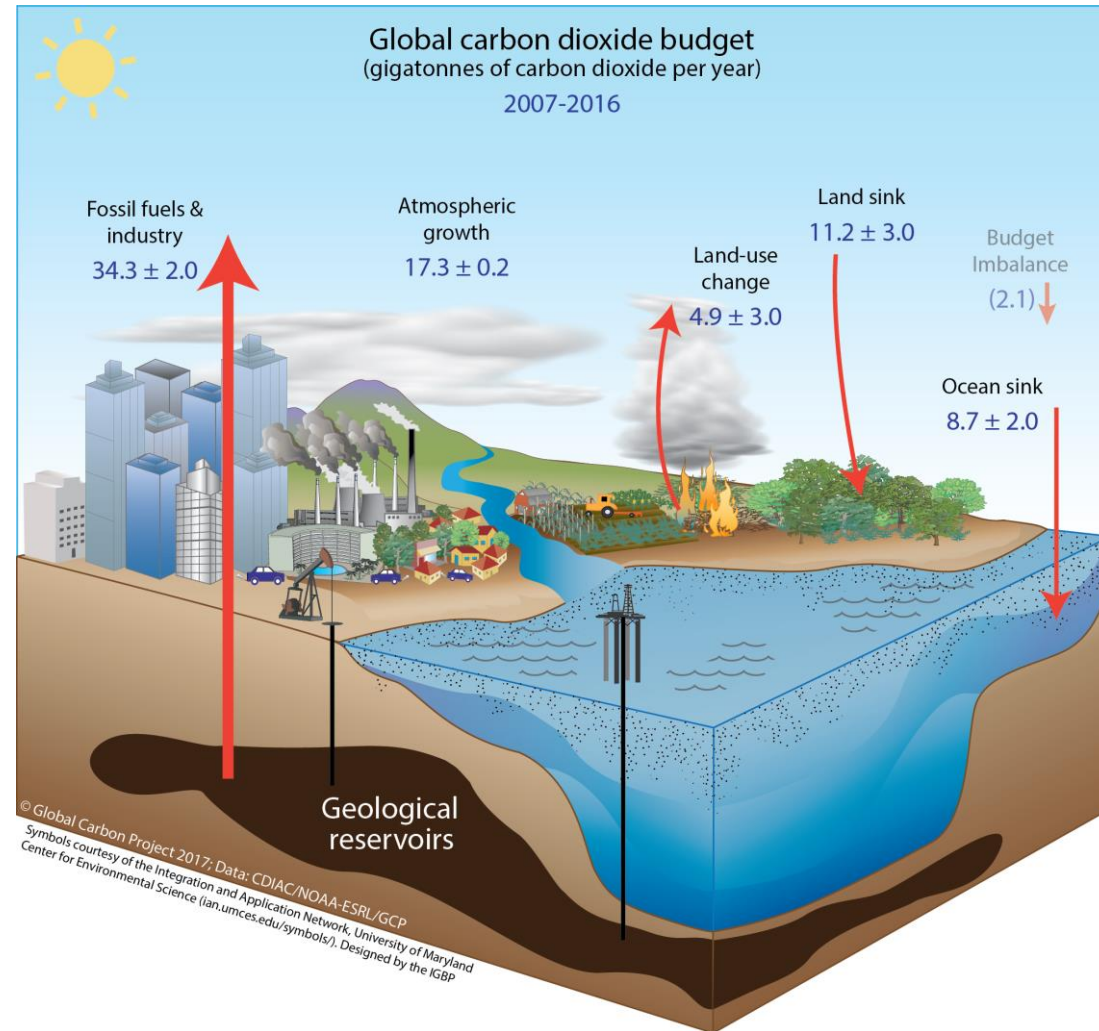
Lera Miles, Climate Change & Biodiversity Programme, UNEP-WCMC

- The climate change challenge
- Mitigation potential of ecosystems
- Private sector initiatives
- How extractive industry can contribute



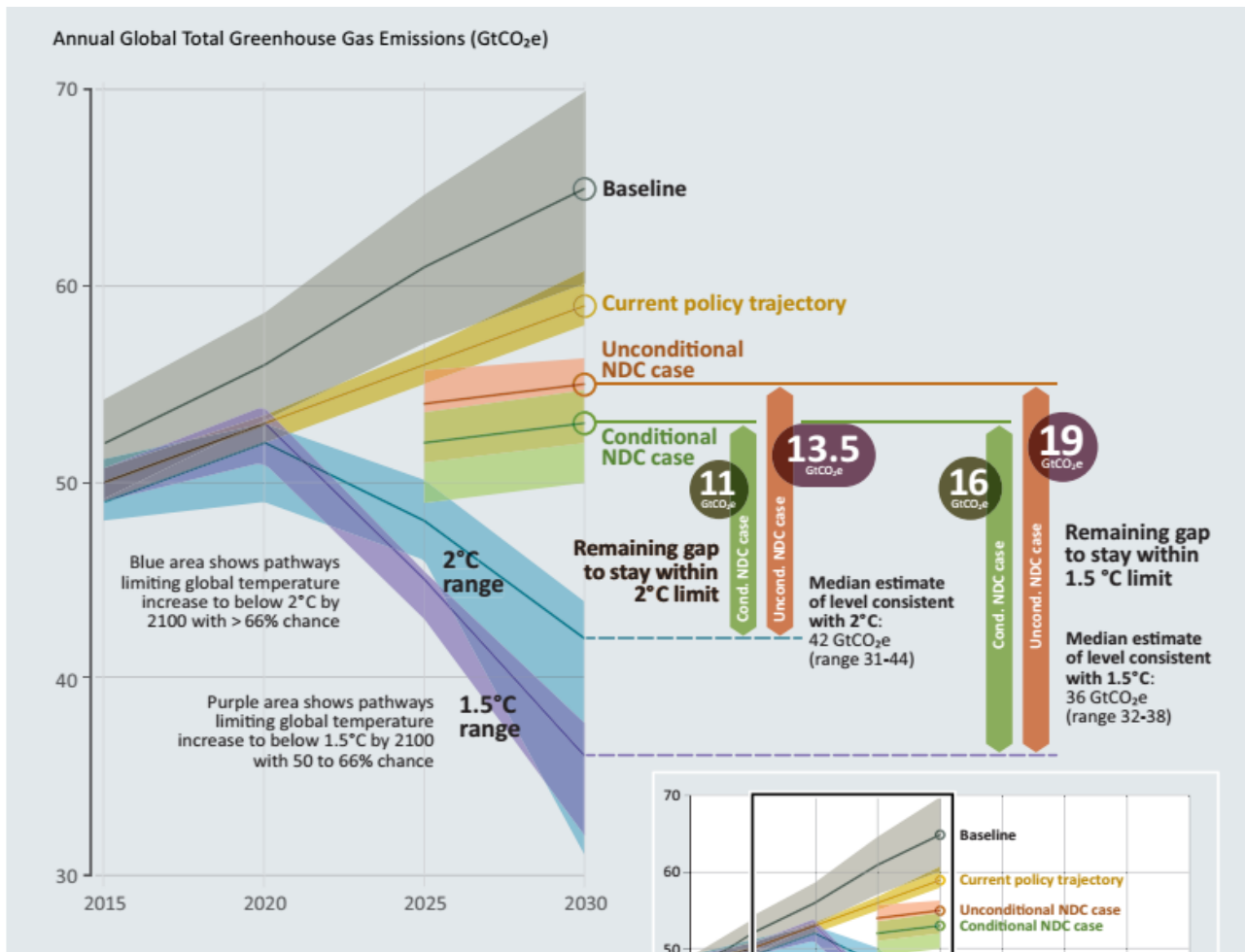
# Anthropogenic perturbation of the global carbon cycle

...averaged globally for the decade 2007–2016 (GtCO<sub>2</sub>/yr)

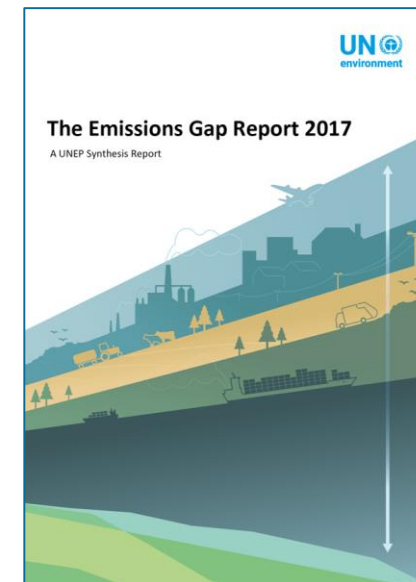
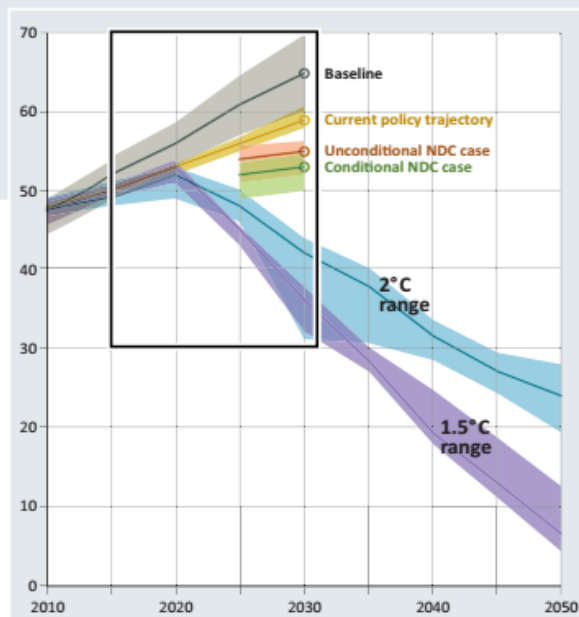


The budget imbalance is the difference between the estimated emissions and sinks.

Source: [CDIAC](#); [NOAA-ESRL](#); [Le Quéré et al 2017](#); [Global Carbon Budget 2017](#)

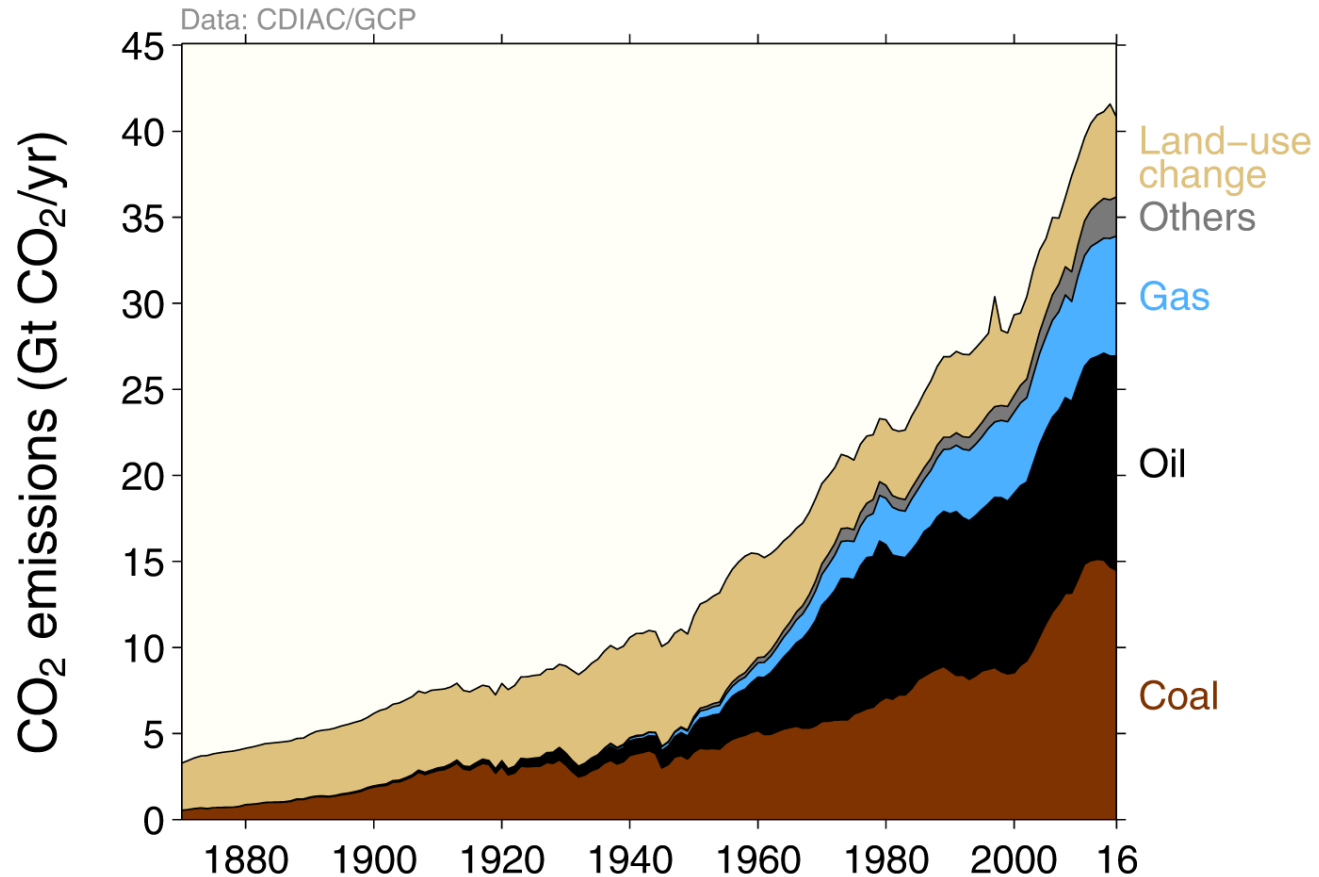


Note: the emissions range for 1.5°C is smaller than for 2°C, as a smaller number of studies for 1.5°C are available. For current policy, the minimum–maximum across all assessed studies are provided.



# Total global emissions by source

Land-use change was the dominant source of annual CO<sub>2</sub> emissions until ~ 1950



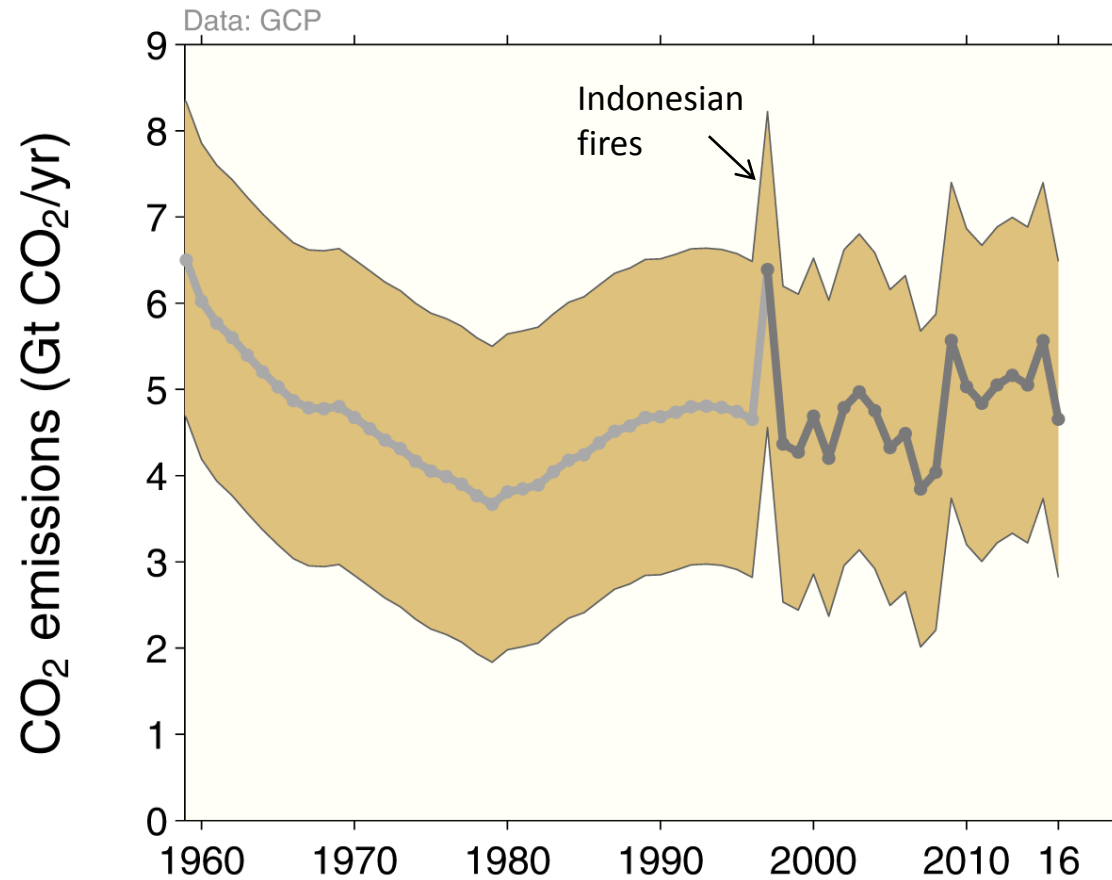
Others: Emissions from cement production and gas flaring

Source: [CDIAC](#); [Houghton and Nassikas 2017](#); [Hansis et al 2015](#); [Le Quéré et al 2017](#); [Global Carbon Budget 2017](#)

# Land-use change emissions

Land-use change emissions are large but highly uncertain.

Higher emissions in 2016 are linked to increased fires during dry El Niño conditions in tropical Asia



Estimates from two bookkeeping models, using fire-based variability from 1997

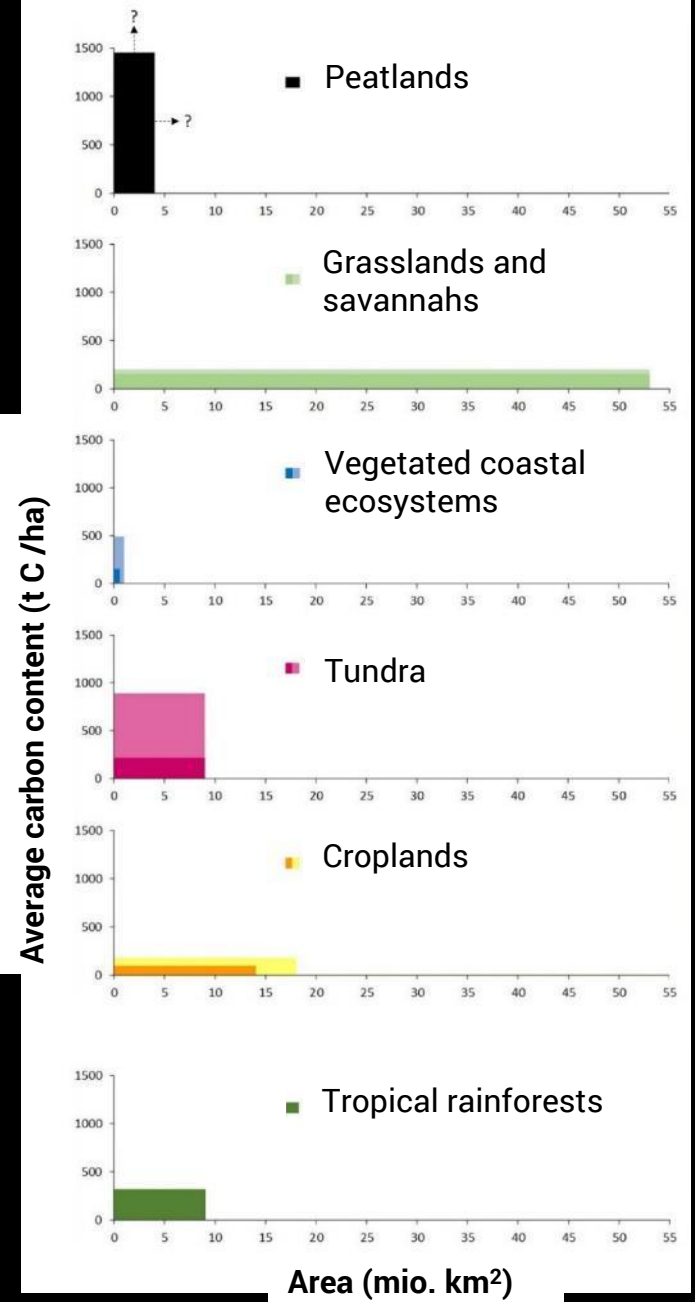
Source: [Houghton and Nassikas 2017](#); [Hansis et al 2015](#); [van der Werf et al. 2017](#); [Le Quéré et al 2017](#); [Global Carbon Budget 2017](#)

# Biodiversity and carbon stocks

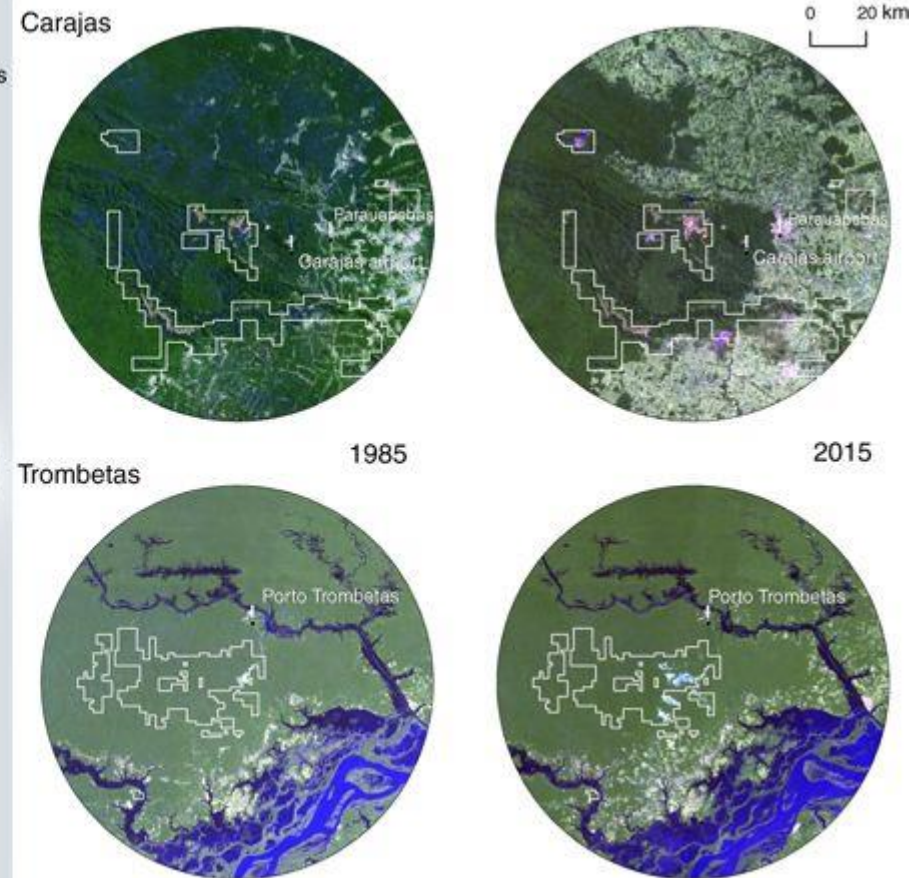
Available evidence suggests that **within ecosystem types, higher levels of biodiversity can increase resilience (and carbon sequestration)**. Planning ecosystem-based mitigation actions so that they maintain or restore more biodiversity can support their effectiveness.



# A diversity of ecosystems



# Mining impacts on forest cover - Brazil

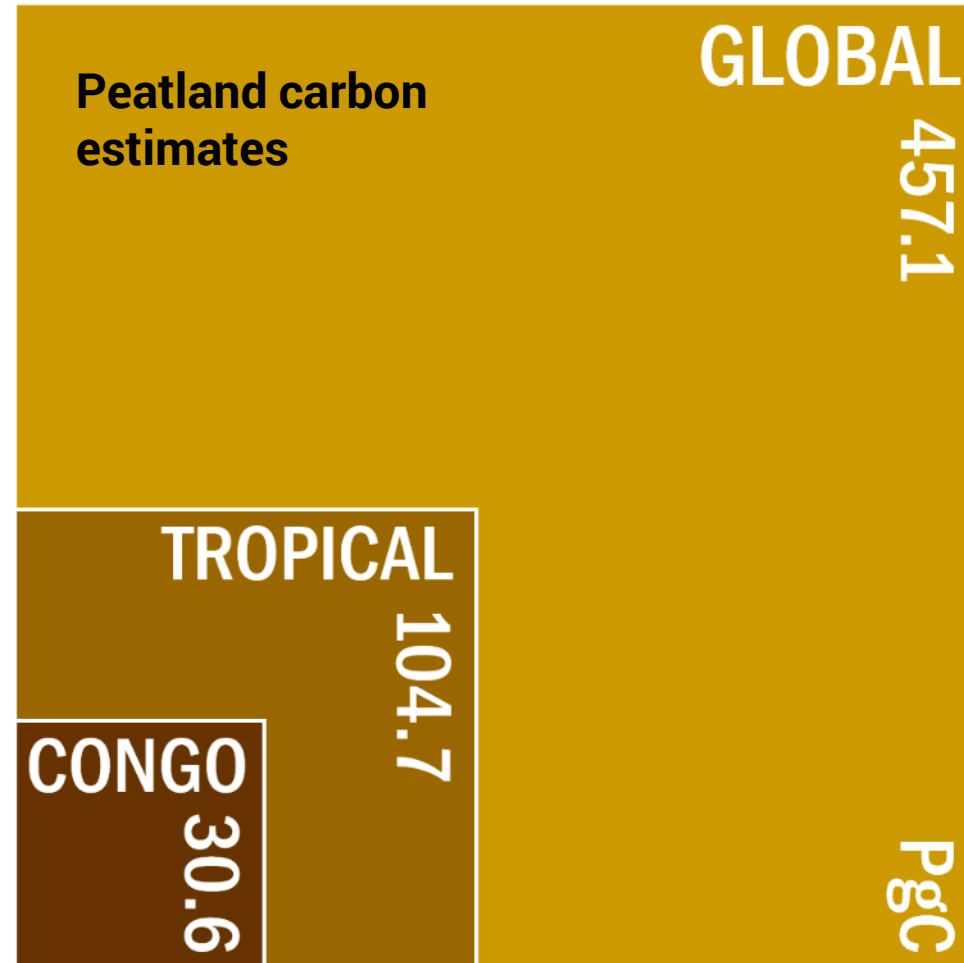
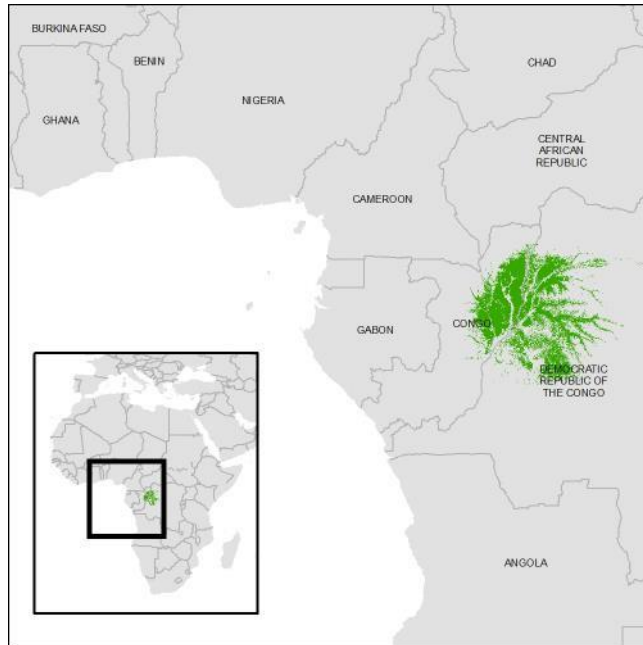


# Mangroves, seagrasses, saltmarshes



- Very small area ( $\approx 0.1$  % of Earth surface)
- High carbon content per area ( $> 1,000$  tC/ha for some mangroves)
- Very high pressure (losses of 1-2 % per year)
  
- Co-benefits for livelihoods, fisheries
- Coastal protection

# Central Congo basin peatlands



Source: Dargie *et al.* 2017



# Private sector initiatives

## New York Declaration on Forests

- End deforestation by 2030 + 8 related goals
- >50 large companies, 40 governments...

## Soft Commodities Compact

- Similar goals from banking sector
- Palm oil is driver most widely tackled

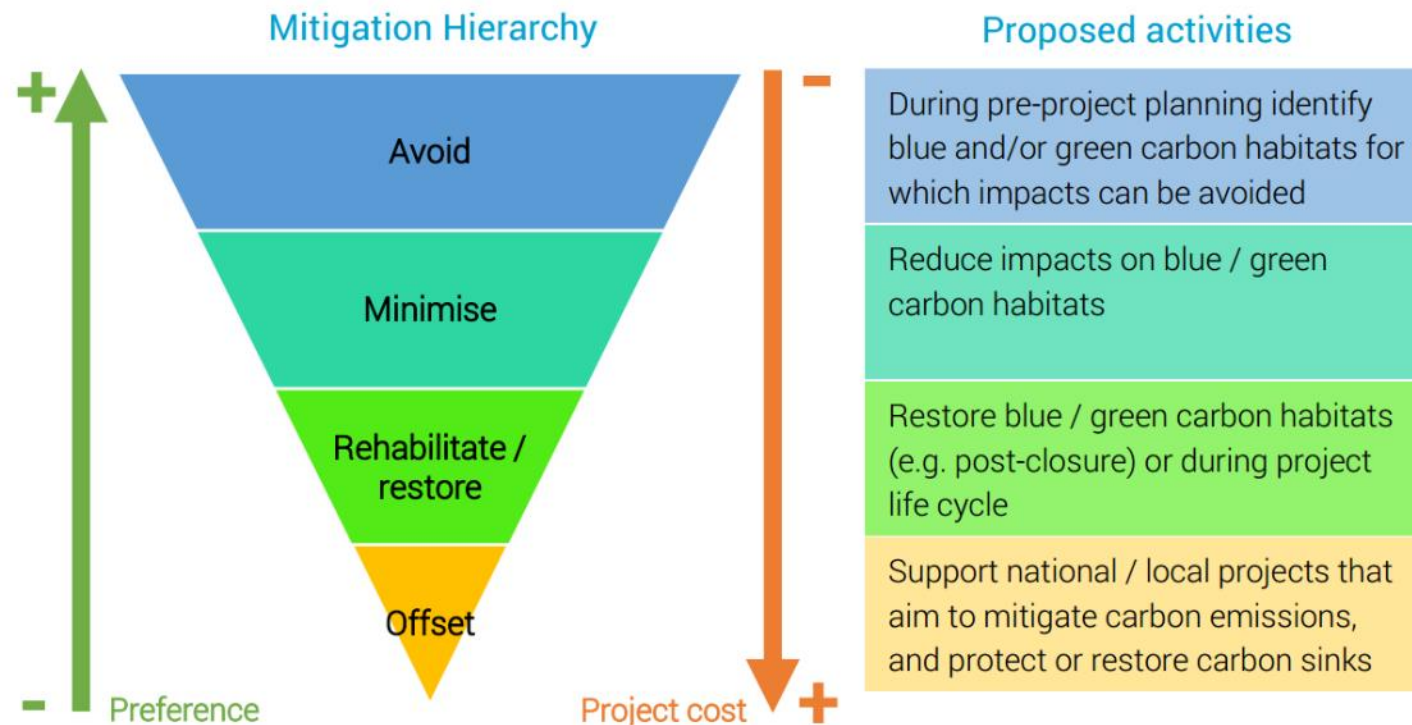
## Oil and Gas Climate Initiative

- Energy sector focus
- Investment fund

# How can extractive companies contribute in their operations? #1

## Protection & wise use of carbon-dense ecosystems

- E.g. use HCV/HCS frameworks and share results
- Mitigation hierarchy



# How can extractive companies contribute in their operations? #2

## Limit impacts in wider landscape

- Infrastructure - new roads, railways, pipelines, ports + canals have direct impacts AND fragment + increase access to large areas -> substantial emissions
- Special attention needed for peatlands, tundra

## Support national emissions reduction goals

- Support national green growth / REDD+ / low-carbon development strategies, be an active stakeholder

## Communicate successes

- Carbon savings of biodiversity conservation and v/v



UN Environment  
World Conservation Monitoring Centre

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# Global Carbon Project

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