Ecosystem-based approaches to climate change adaptation and mitigation – Green Infrastructure – Working with Nature

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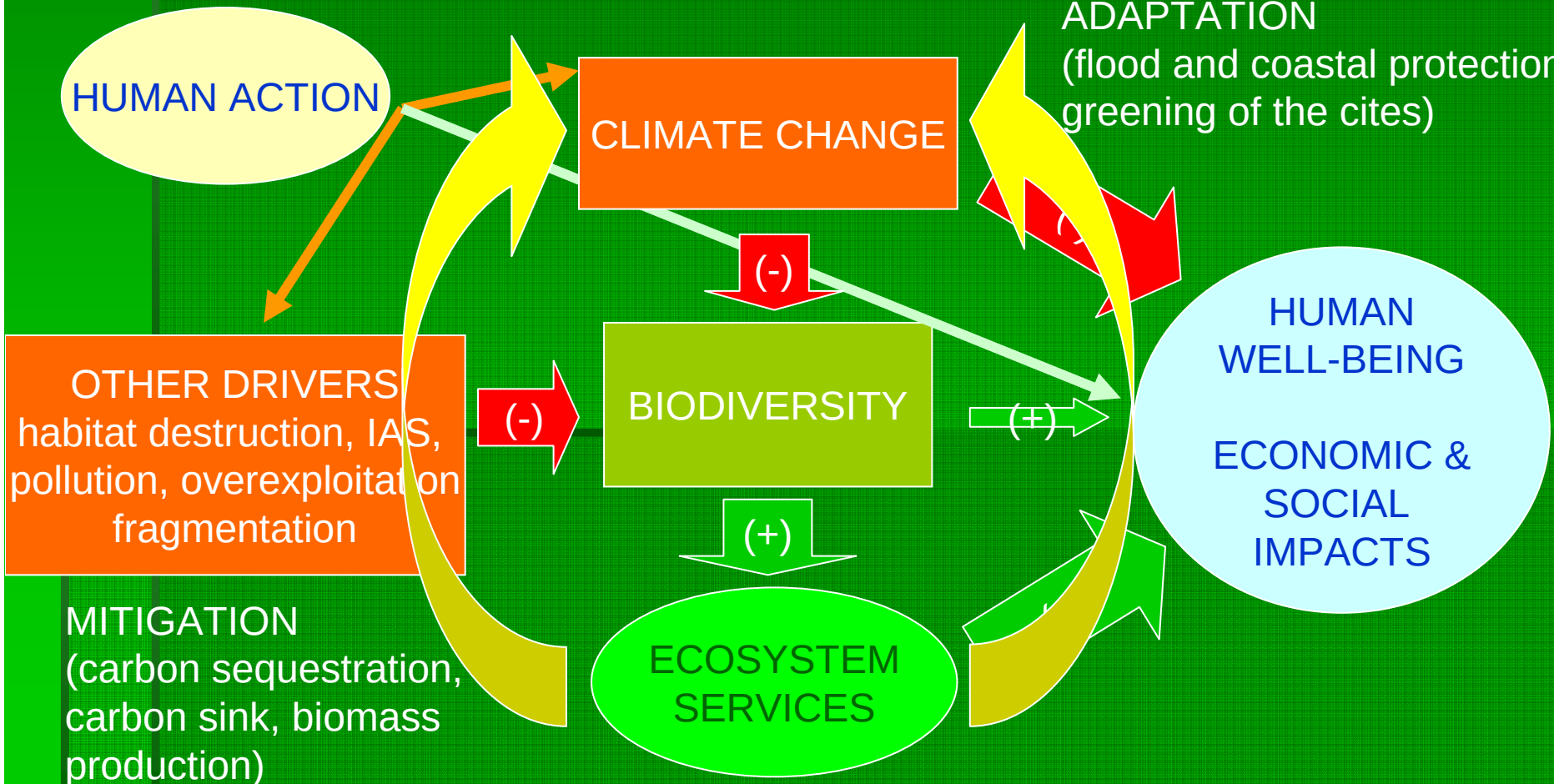
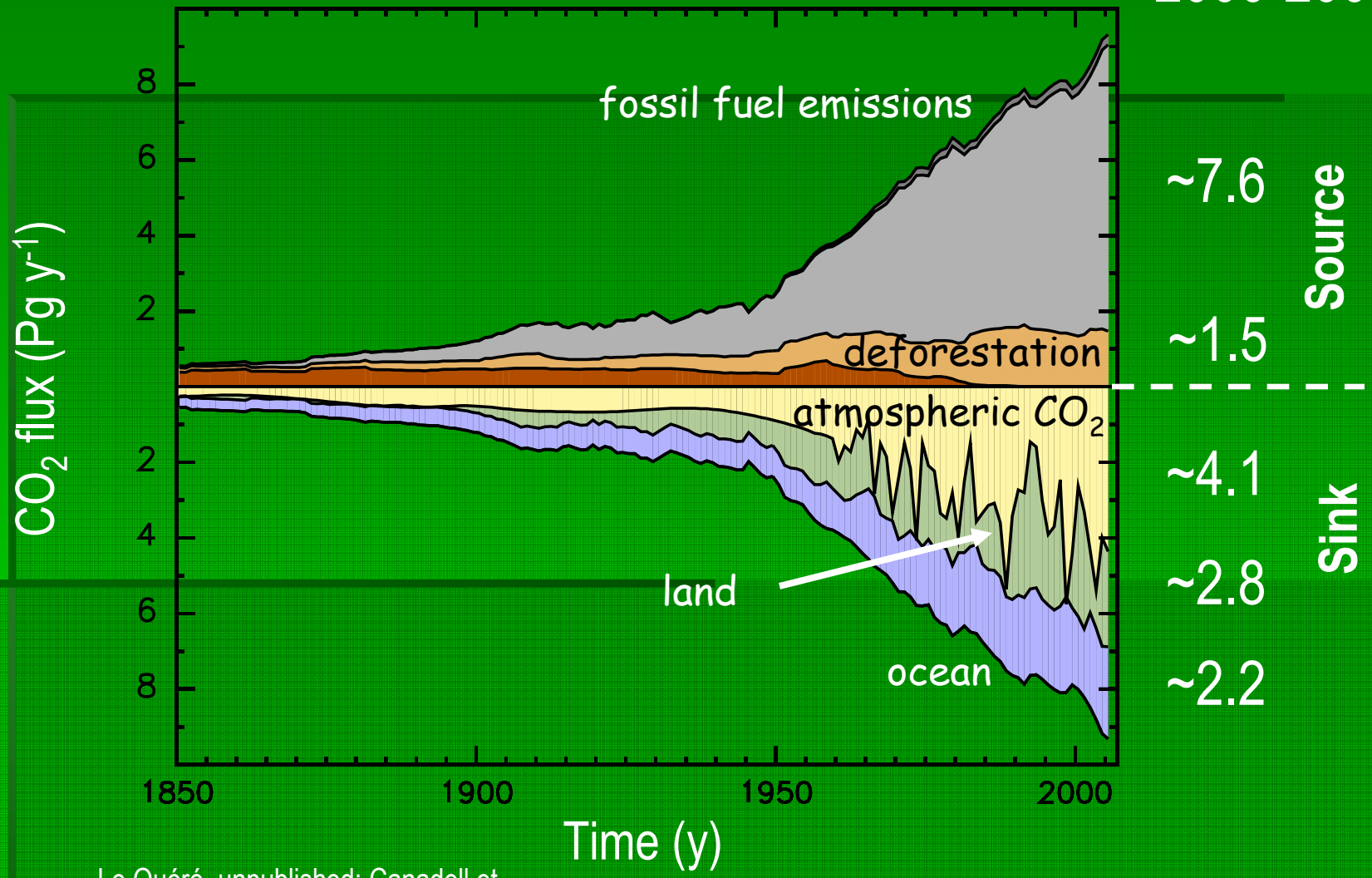
Biodiversity decline and climate change: two sides of the same coin



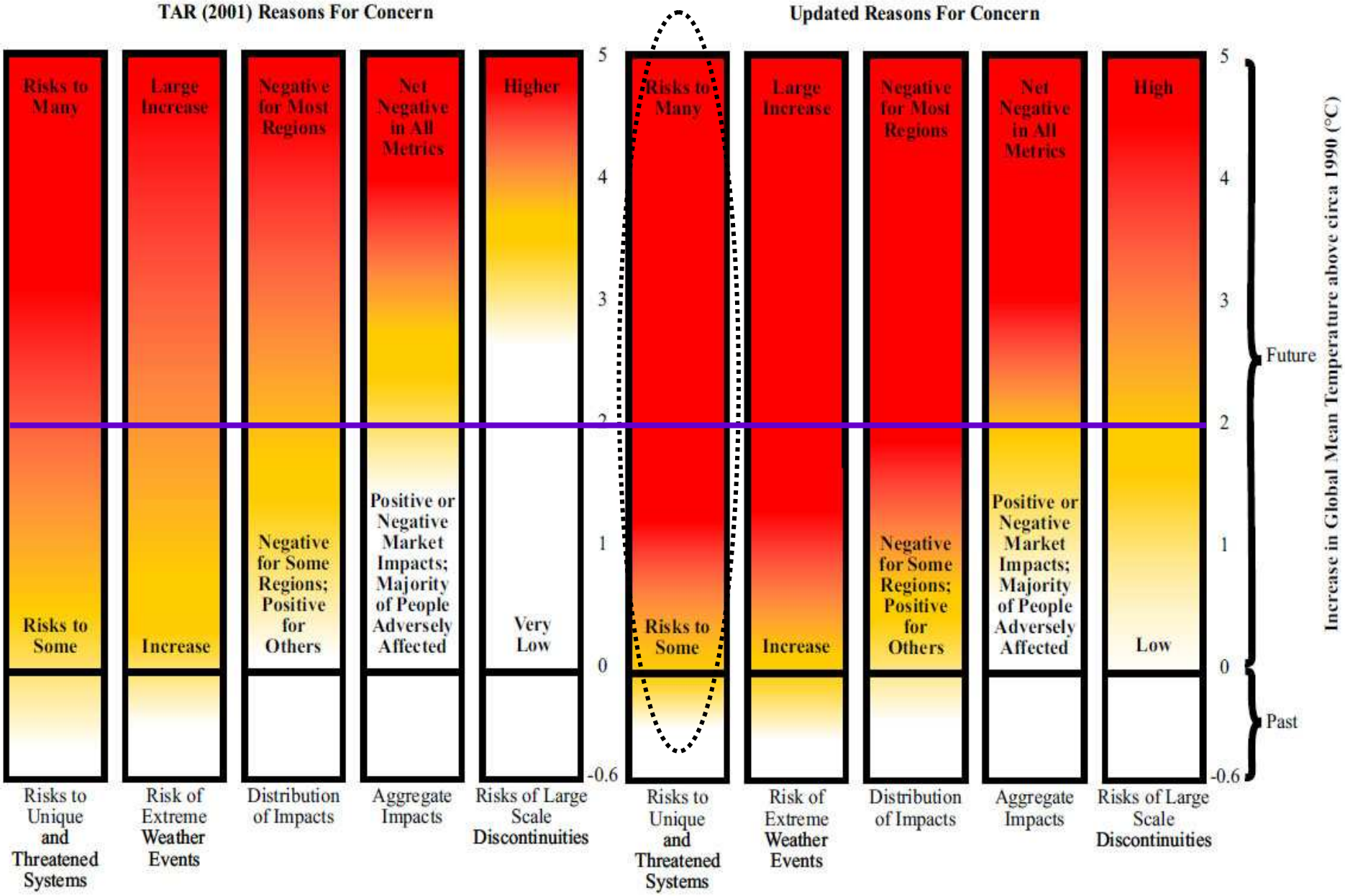
MORE BIODIVERSITY - LESS CLIMATE CHANGE

Flux of anthropogenic CO_2

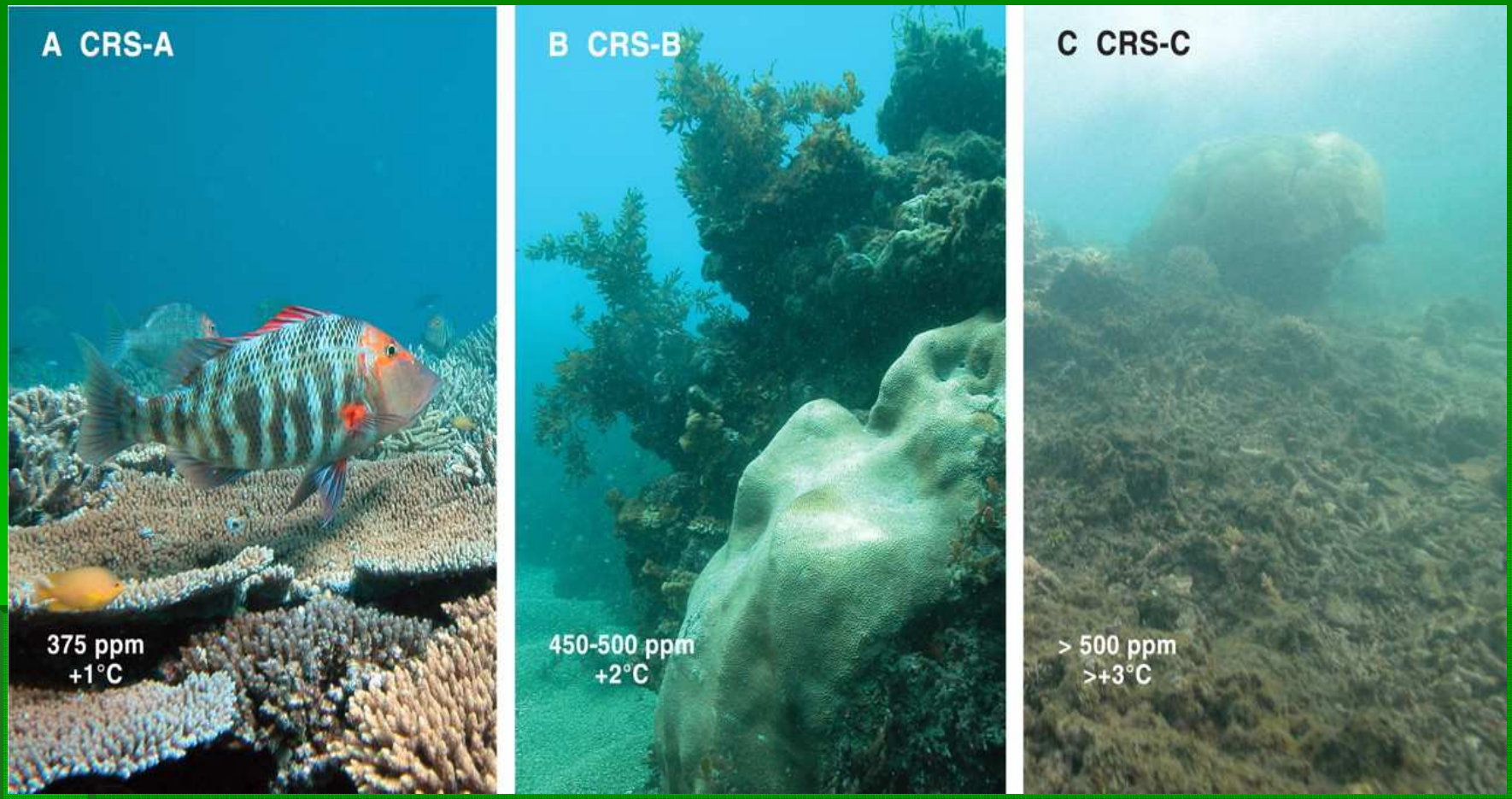


Le Quéré, unpublished; Canadell et al. 2007, PNAS

MORE CLIMATE CHANGE – LESS BIODIVERSITY

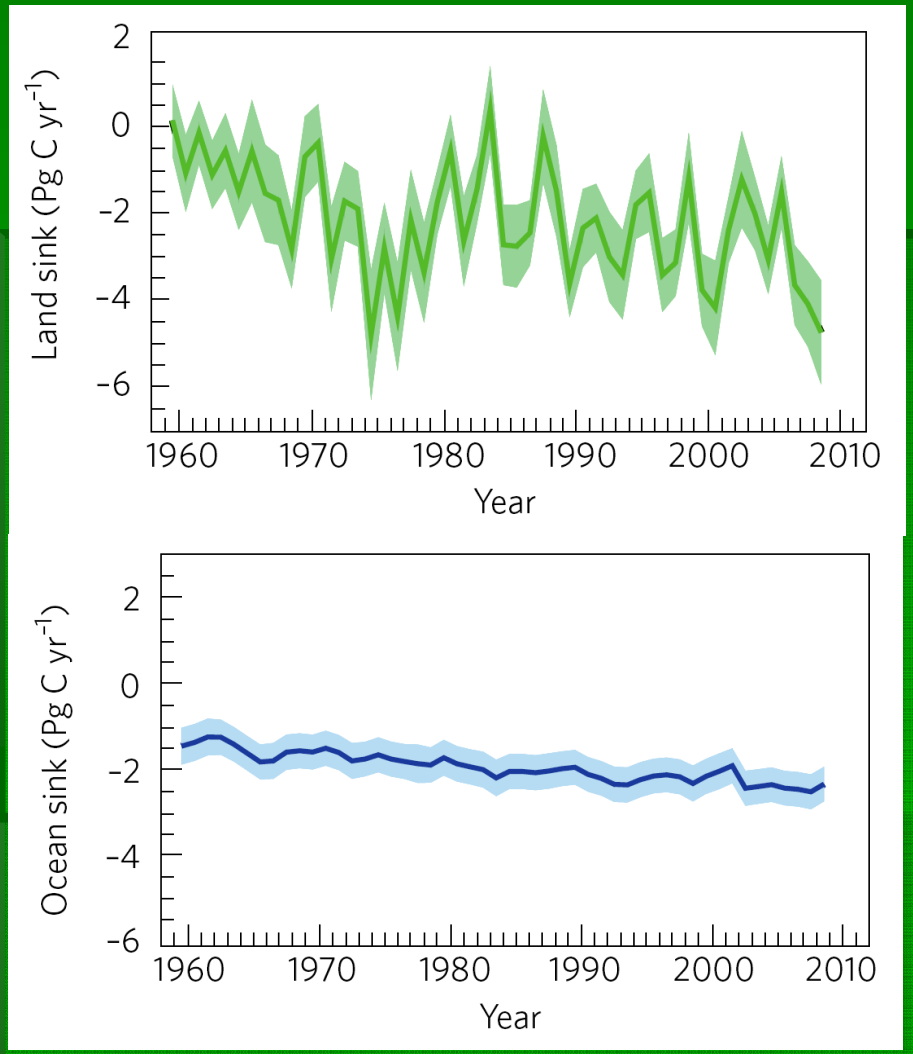


MORE CLIMATE CHANGE – LESS BIODIVERSITY



Reference: Hoegh-Guldberg et al. 2007

LESS BIODIVERSITY MORE CLIMATE CHANGE



The decline in natural carbon sinks has likely caused an increase in the airborne fraction of CO_2 by 5% over the last 50 years.

Le Quéré et al. 2009, Nature Geoscience

LESS BIODIVERSITY – MORE CLIMATE CHANGE IMPACTS

grabs
green and blue space adaptation for urban areas and eco towns

therefore

- It is impossible to solve biodiversity loss without addressing climate change
- It is equally impossible to solve climate change without addressing biodiversity and ecosystem services

Poly-crisis needs integrated approaches

- Commissioner Hedegaard: ”***We need both green technology and natural solutions***”
- UNEP Chief Scientist: ***”More creative thinking is needed about policy options for strongly reducing greenhouse gas emissions and enhancing carbon sinks”***

Green Infrastructure
Working with Nature

'Green infrastructure' is – inter alia - an interconnected network of natural areas, including agricultural land, greenways, wetlands, floodplains, urban green spaces - parks, green walls, green roofs, - forest reserves, native plant communities and marine areas that naturally regulate storm flows, temperatures, flood risk and water, air and ecosystem quality as well as Working with Nature –

Developing and using ecosystem-based approaches to climate change adaptation and mitigation



RECREATION

GOODS e.g. TIMBER

SPACE FOR NATURE

FLOOD PROTECTION

INCREASE QUALITY OF LIFE

MITIGATION

Trees & Green spaces
Green roofs
Green walls
help to cope with hot weather through **shading & evaporation cooling,**

help save energy

Green rooftops and walls

Lower temperatures – summer
Increased temperatures – winter
(c 2°C Toronto)

Lower energy use/reduced emissions

IMPROVE LOCAL MICROCLIMATE

Remove 0.2 to 2 kg dust/m²

Health benefit

Reduce wind chill 75%
Heating demand 25%

Green rooftops and walls

Lower runoff – 100% summer
50% winter

Example:
New York City Green Infrastructure Plan:
reduction of sewer overflows by more than
12 billion gallons/year by 2030

Lower flood risk

Remove pollutants

Improve water quality → Improve (river) biodiversity

Sequester carbon ($375 g/m^2$)

Working with nature part of the solution

- **Ecosystem-based approaches**
  - are ready for use and easily accessible
  - involve people and build responsibility
  - **bring multiple benefits**
  - are cost efficient and make economic sense
  - **are to be an integral part of the overall adaptation and mitigation effort**
- **EU post 2010 biodiversity strategy**
  - to include ecosystem service dimension
  - **sub target on Green Infrastructure**

CBD COP 10

Nagoya, 18-29.10.2010

- **Strategic Plan**
  - **20 targets for 2020**
    - **including restoration target**
- **Decision on Biodiversity and Climate Change**
  - highlights **the role and multiple benefits of ecosystem-based approaches to adaptation and mitigation**
  - invites Parties ***"to consider the role of biodiversity and associated ecosystem services when climate-proofing / enhancing the climate resilience of investments, projects and programmes and to develop such strategies for biodiversity-related investments, projects and programmes".***
- **Decision on Protected Areas**
  - highlights the **role of protected areas with regards to climate change adaptation and mitigation**
  - explores…*financial and technical assistance through climate-related financial mechanisms*

adopted by 193 Parties

Investing in ecosystem-based approaches - green infrastructure

- provides business and job opportunities
- contributes to green economy and sustainable development
- contributes to maintaining and restoring healthy ecosystems
- promotes creativity
  - discover “undiscovered solutions”
- valorises traditional knowledge
- helps building trust and partnerships

Conclusion

The present poly-crisis needs solidarity and swift implementation of integrated measures, such as

Ecosystem-based approaches to climate change adaptation and mitigation, which

- are cost-efficient and ready for use
- bring multiple benefits
- complement technological approaches
- should be an integral part of the overall adaptation and mitigation effort.

Promoting Green Infrastructure - “working with nature” - is an investment (rather than a cost); this should be recognised on international, EU and national levels.

THANK YOU FOR YOUR ATTENTION