Inspiration session: Natural Climate Buffers

EUROPARC Conference 2023
TRIBUTE TO OUR LANDSCAPE
WHERE NATURE AND PEOPLE MEET IN HARMONY

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What are natural climate buffers?

Areas:

- where natural processes prevail
- that contribute to nature restoration & conservation
- That provide climate-related services to society

Climate & biodiversity crises: solve both together!

Types of natural climate buffers

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Bio-builders | Carbon sinks | Green airconditioning | Natural sponges | Living coasts | Green & blue spaces

Example: peatlands and fens

The Netherlands:

- Highly human modified delta country
- Peatlands have declined by 99%
- Includes fens (ground & surface water fed peatlands)

Landscape morphology

- Lowland peat
- Clay, sand, peat layers
- Flat landscape
- Hilly landscape
- Coastal
- Inland

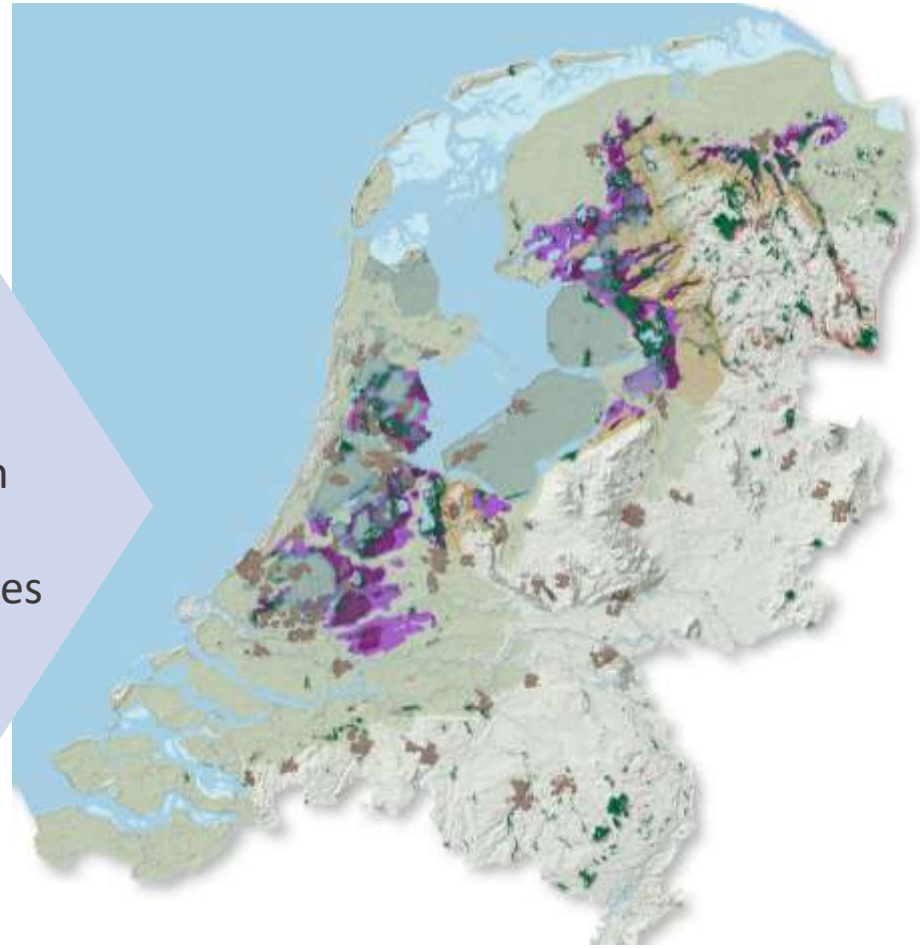
Hydrology

- Groundwater seepage
- Rainwater influenced
- Surface water:
  - Small streams
  - Large rivers
  - Brackish

Human land use

- Peat mining (>300 years)
- Overexploitation -> peat became lakes
- Drainage, polders
- (Intensive) agriculture
- Urbanisation

Great variety in different landscapes



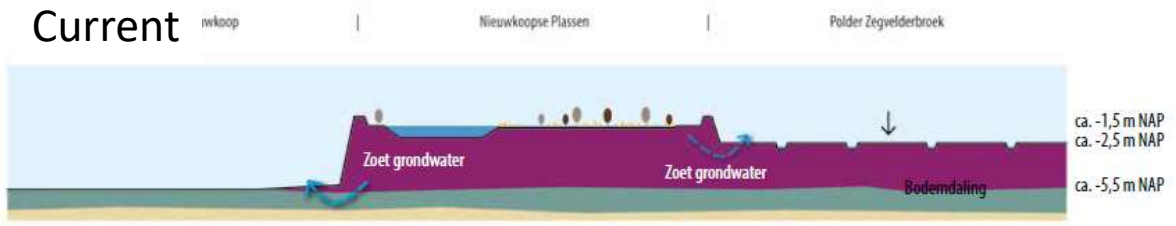
Issues in peatlands and fens

- Drained peatlands: carbon loss & release of CO_2 into the air.
- Leads to soil subsidence - several mm/year, meters in last centuries
- Climate change: extreme precipitation & drought
- Decrease of freshwater from rivers
- Sea level rise and saline groundwater influx
- Intensive land use & land/water use conflicts between stakeholders

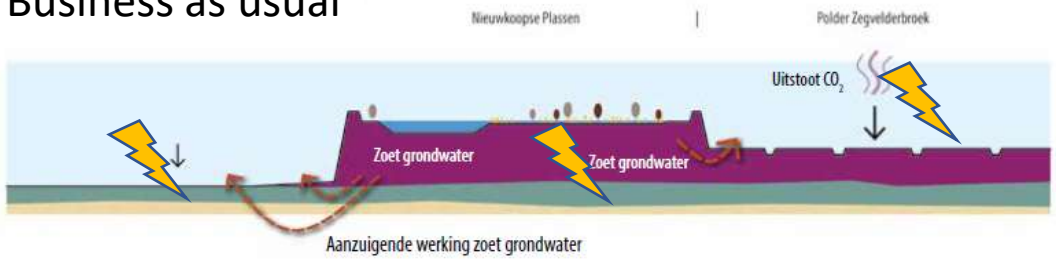
➢ *Water management in the Netherlands is becoming a severe headache!*

Scenarios for (former) peatlands

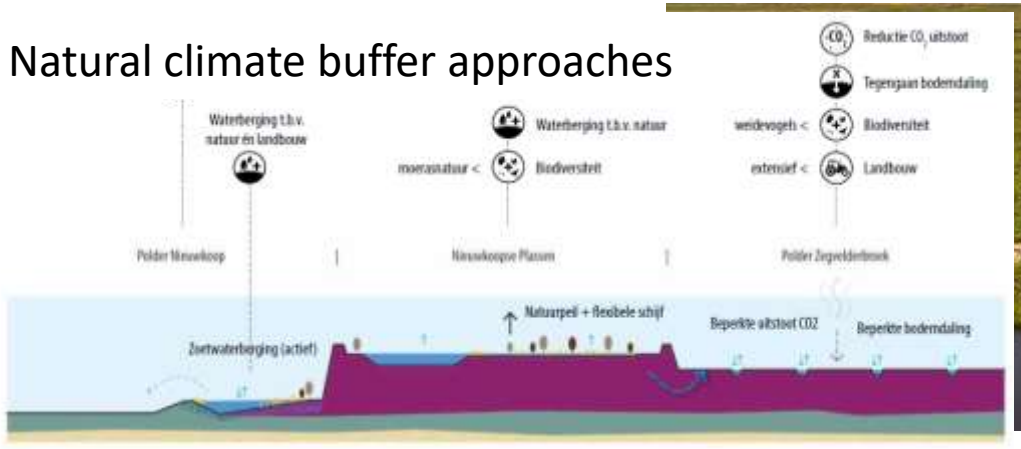
Current



Business as usual



Natural climate buffer approaches



Case: Onlanden - Groningen

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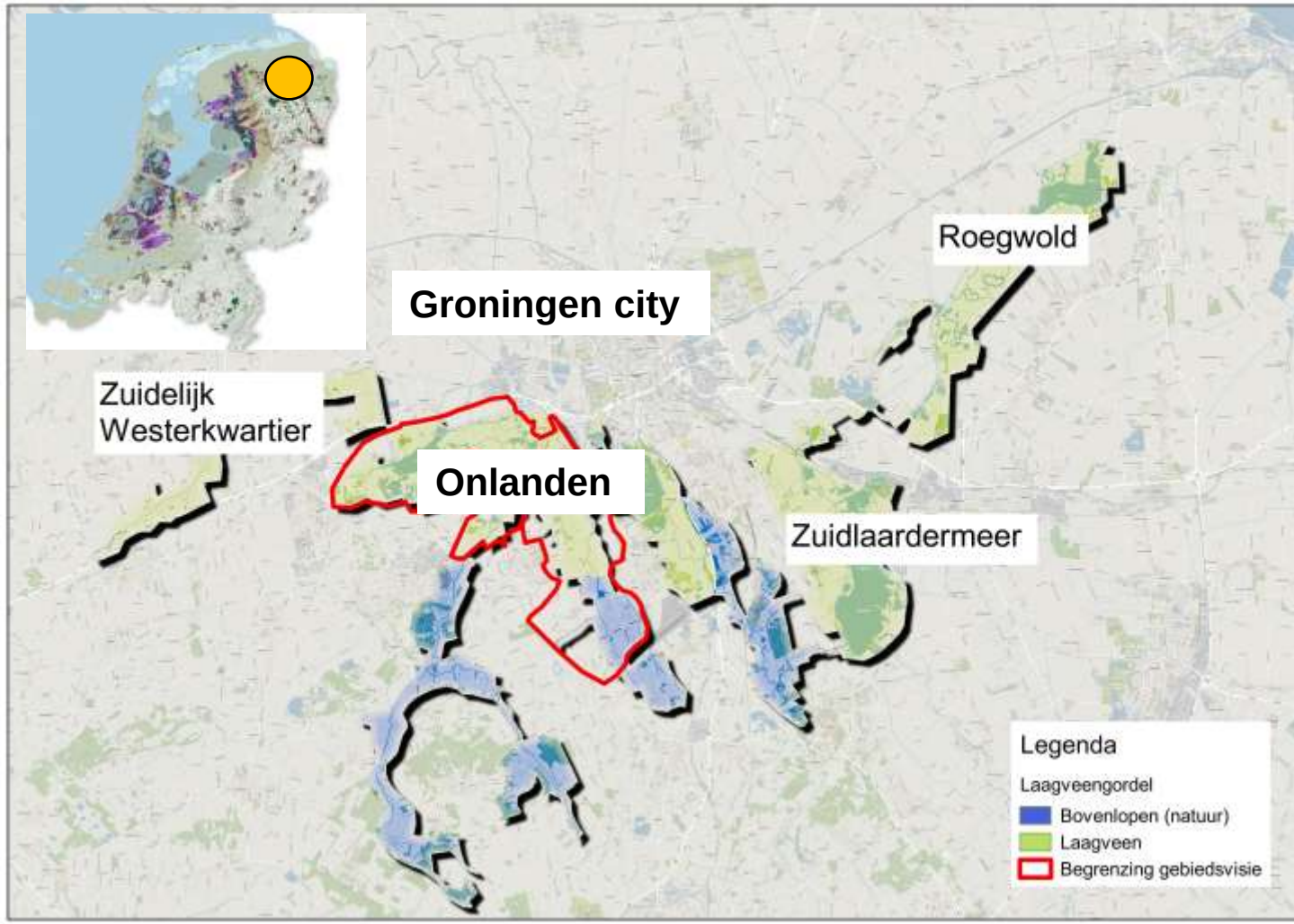
Onlanden – Natural water retention

- 2200 ha partly Ramsar & Nature 2000
- 10 mio m3 retention
- € 33 mio purchase & realization
- € 9 mio recreation facilities
- Alternative: dike renovation € 155 mio
- 1st use 2012: 30-40 cm waterlevel reduction



Gains for biodiversity!

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Urban oasis!

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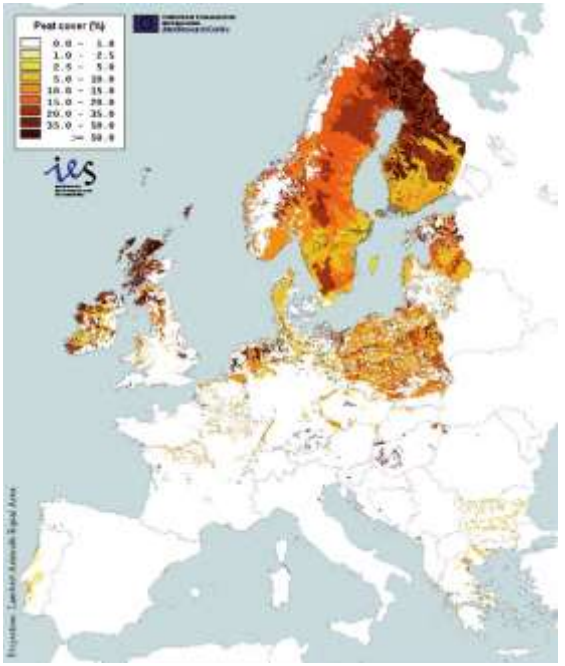
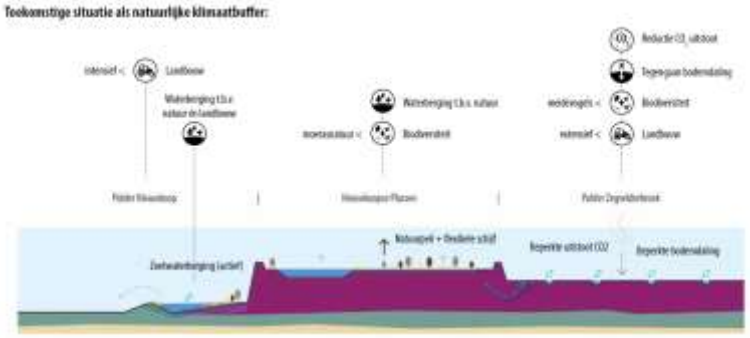
Natural Climate Buffers

- Solution for climate & biodiversity issues
- Always system-based
- Landscape level: approach means you will also need to look at and work OUTSIDE your protected area/NP
- Including the stakeholder landscape
- Co-address other issues: economic, agriculture, tourism …





More information

- Dutch Coalition on Natural Climate Buffers: https://www.klimaatbuffers.nl/climate-buffers-english

- Eurosite working group Wetlands & Climate Change: https://www.eurosite.org/wetlands-and-climate-change-wcc-working-group/

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Discussion

Stakeholders

- “The” National Park
- Nature conservation organisation
- Farmers
- Tourism sector
- Water management authority
- Local community / residentials
- Businesses

Statement 1

Natural climate buffers are a landscape-level approach to finding solutions to multiple issues in peatland areas.

Statement 2

Better understanding of ecosystem services provided by nature strengthens the support for protected areas.

Statement 3

A '*National Climate Landscape Park*' can unite stakeholders around issues of water and climate, nature conservation, agriculture, business, and tourism in fen and peatland areas.

Statement 4

The hydrological system determines the size of the protected area or national park and can perfectly include both strictly protected areas and economic activities.