



Dynamic dune management

For nature conservation and climate change adaptation



PWN dune area



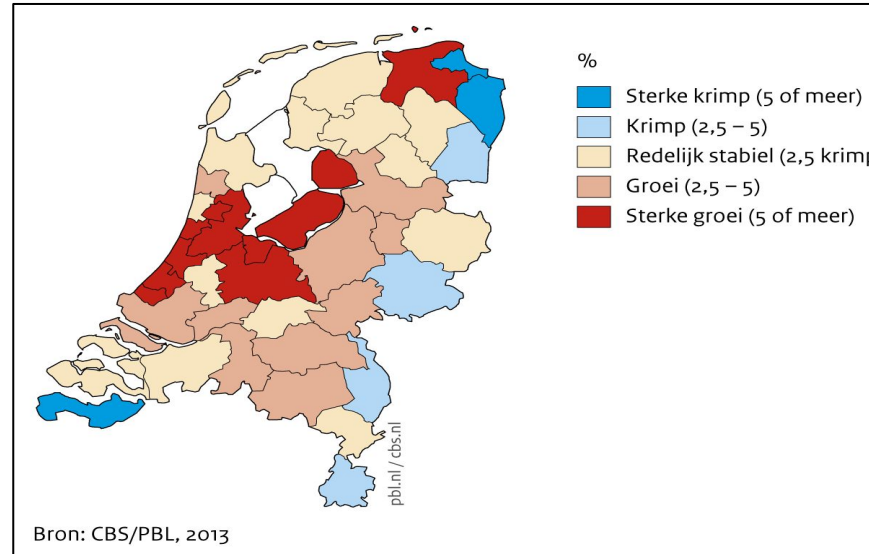
Multiple functions



Nitrogen deposition



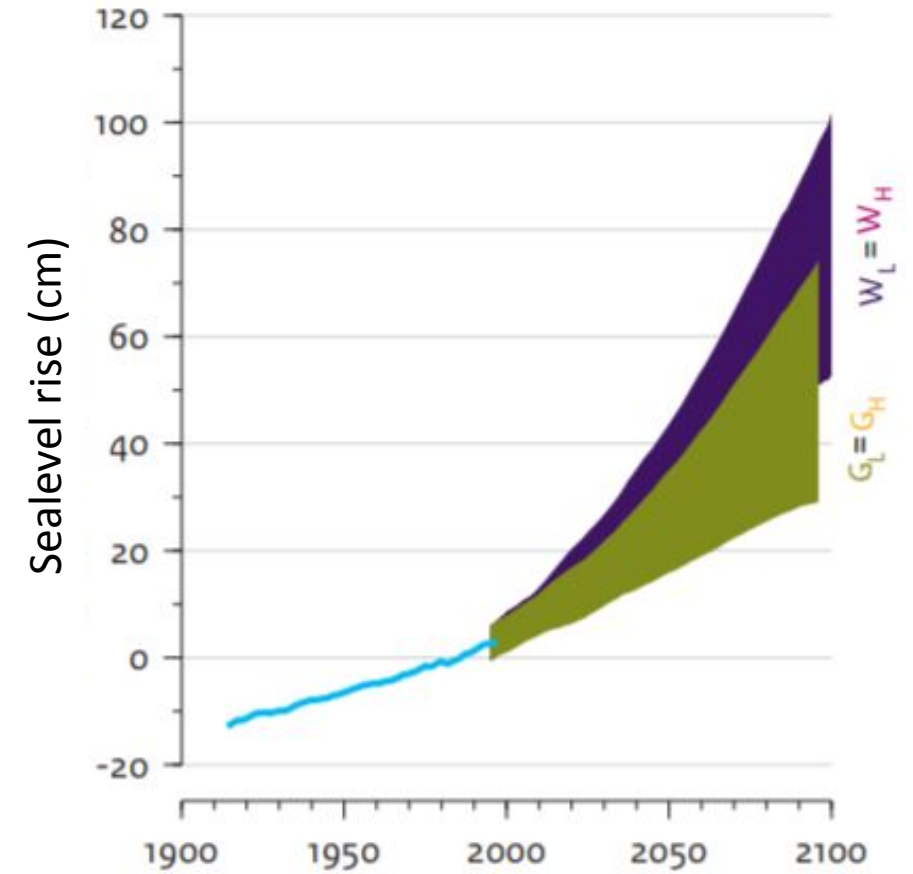
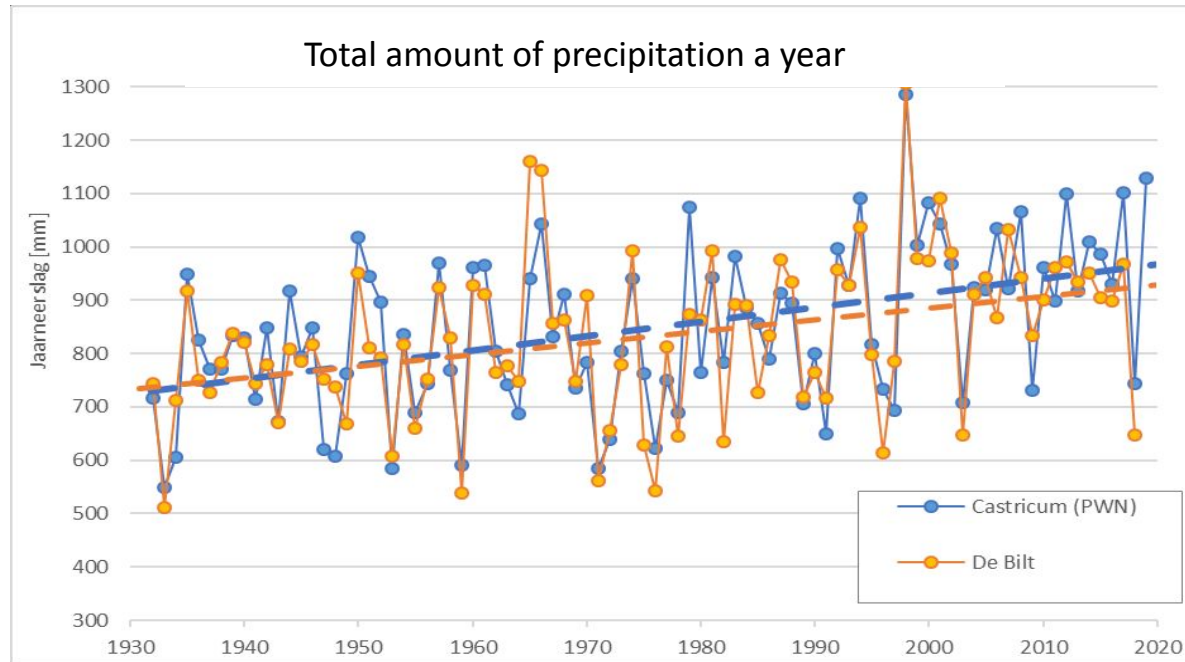
Urbanization



Climate change

Conservation challenges

Climate change



'Drowning of dune slacks'

Sealevel rise



Groundwater rise



Loss of adaptive capacity of the dune system



A close-up photograph of a person's hand gently holding a thin, light-brown tree branch. The branch has several small, vibrant green leaves. The background is a soft, out-of-focus bokeh of warm sunlight and green foliage, creating a peaceful and natural atmosphere.

Building with nature

Our job: restore, improve and use the adaptive capacity of nature

- Nature has a great capacity to adapt
- Use this capacity to make our living environment more climate resilient



How are we doing this?

Dunes need to be dynamic!



Activated parabolic dunes

5 notches

Benefits for nature

- Fresh lime rich sand counteracts soil acidification
- Rejuvenation of the vegetation
- Pioneer species return



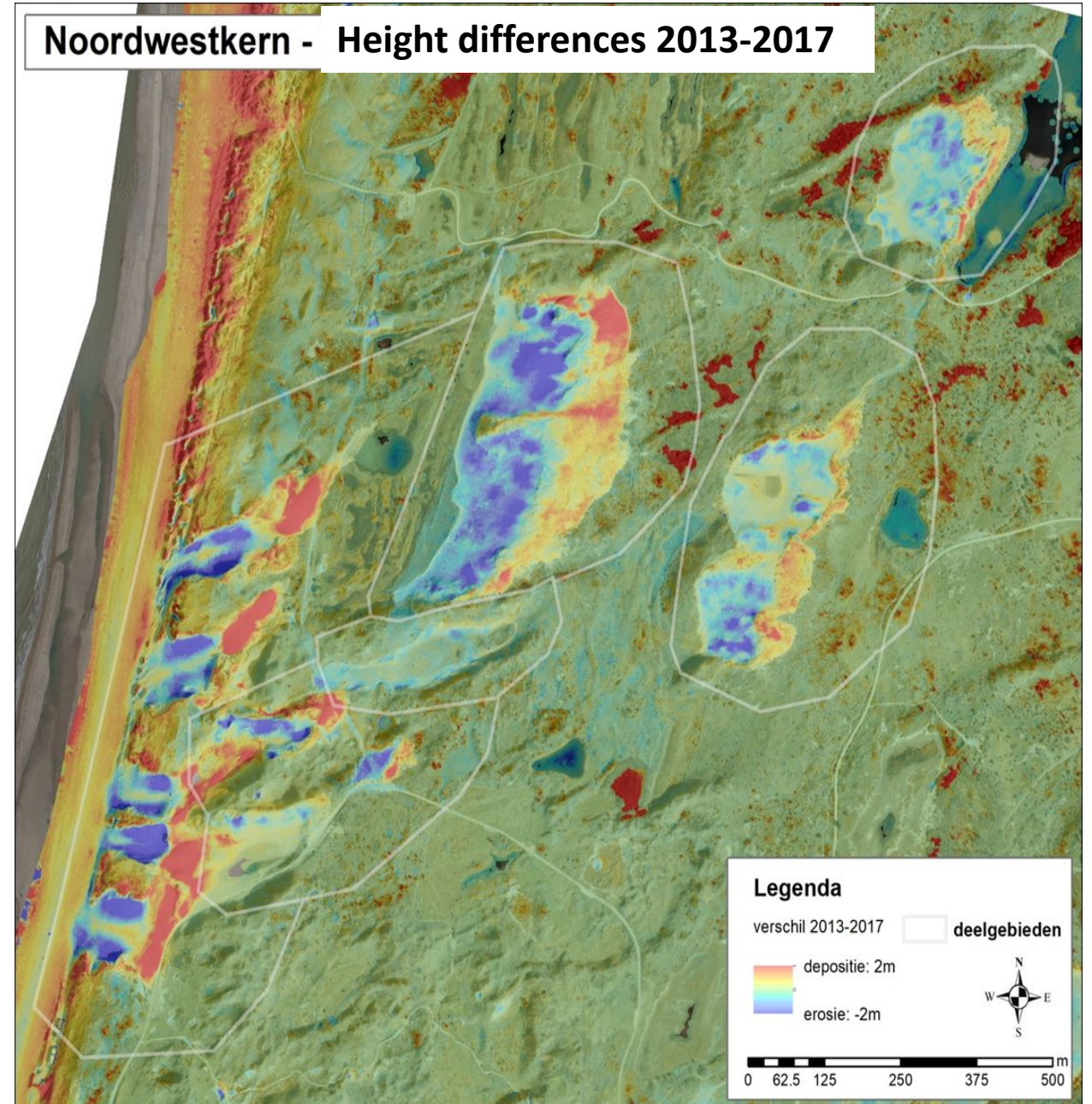
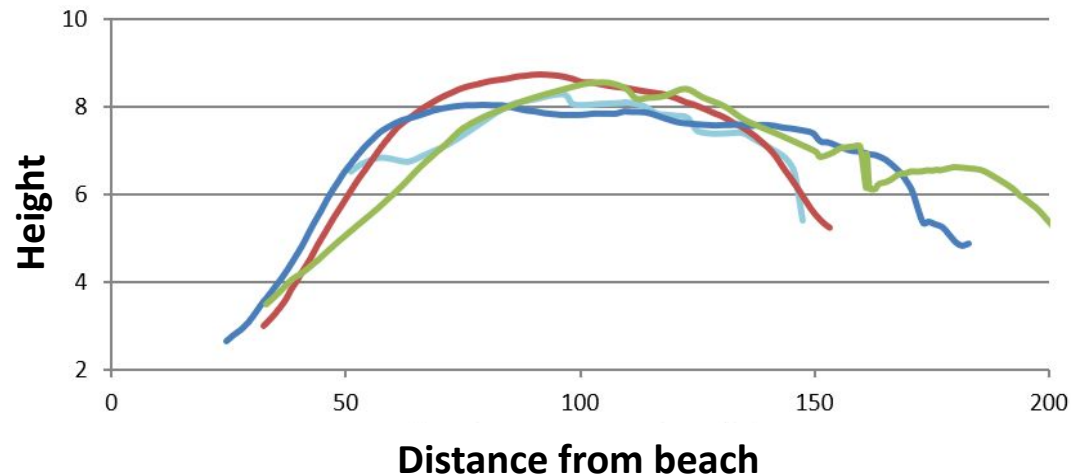
Ability to adapt to new groundwater levels

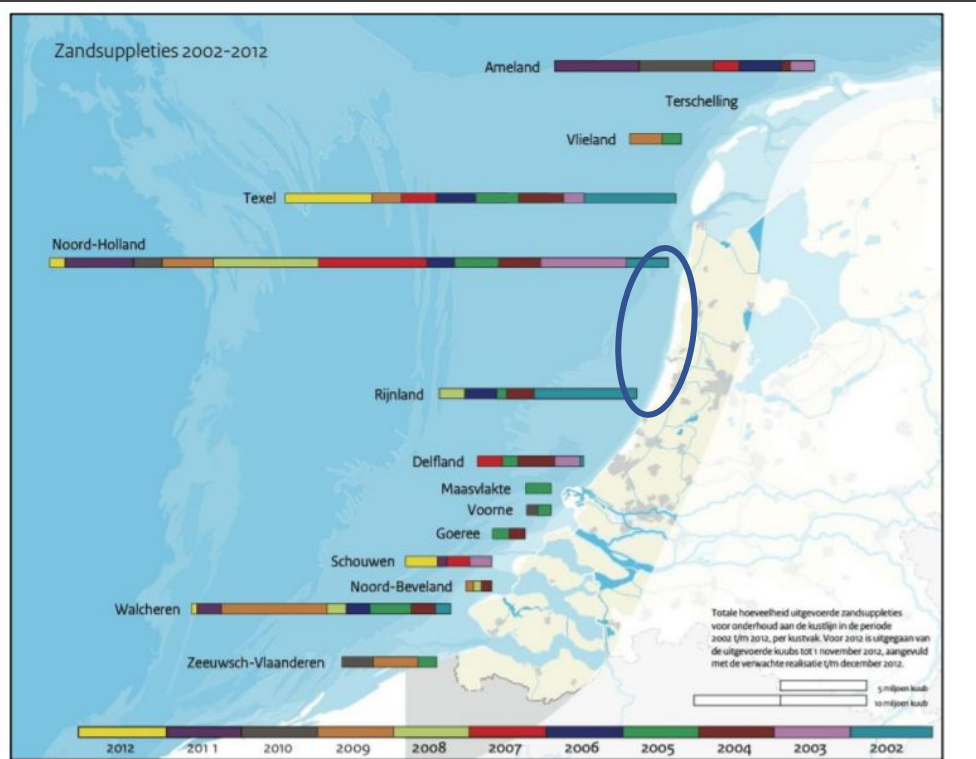


Leading strategy for coastal defence

Sand deposit of ca. 45.000 m³ landward

- (25.000 m³ from the notches and 20.000 m³ from the beach) □ dune system is growing!





Kaart 4 Uitgevoerde zandsuppleties in de periode 2002-2012 voor onderhoud van de kust.
Bron: Deltaprogramma (2013) Nationale Visie Kust



Important preconditions

- Sand nourishments to sustain coastline
- Uninterrupted primary flood defense
- Minimum height of +7 m NAP

Close collaboration with waterboards and national government (water management)!

Conflicts with other functions

- (Innovative) solutions needed for infrastructure
- Important for support for future measurements



Building with nature - adaptation and conservation



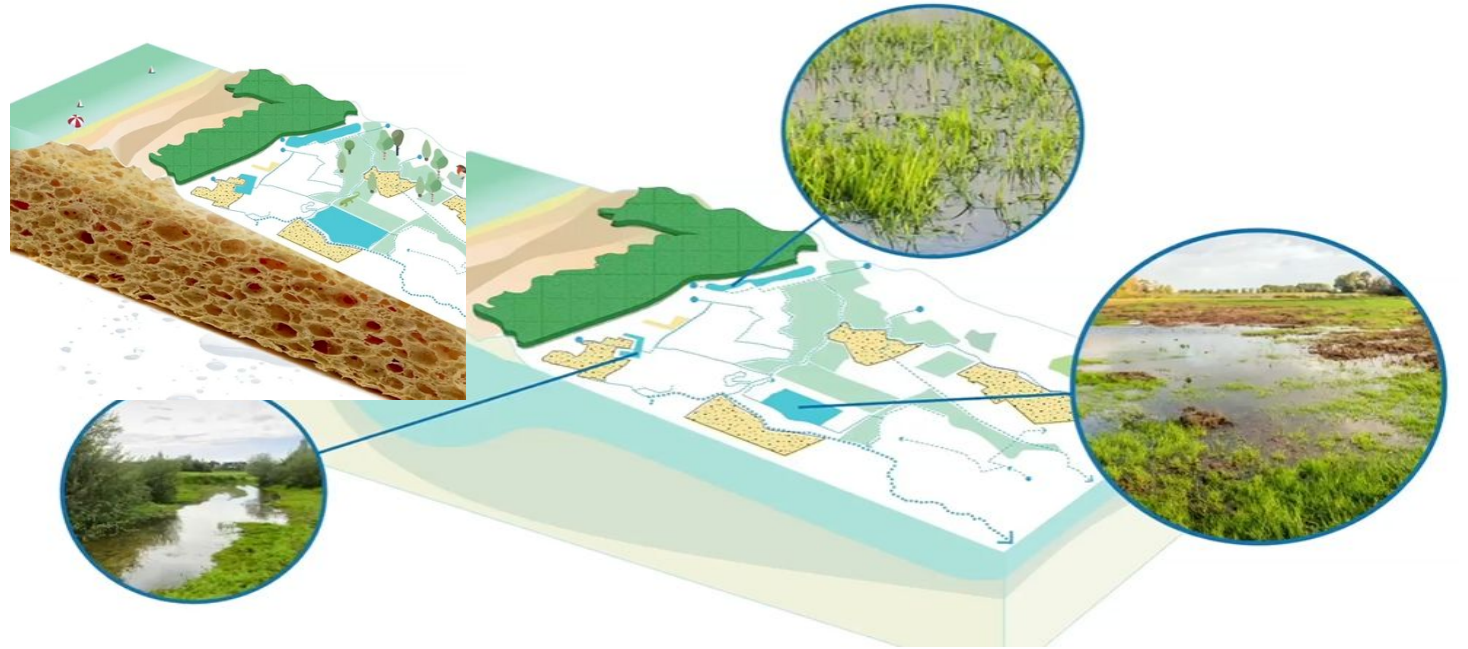
Sustainable coastal defence



Increased adaptive capacity



Benefits for biodiversity



And there is more...

A climate resilient future

- Use the adaptive capacity of nature
 - Benefits natural ecosystems and biodiversity
 - But also many other functions
- Nature conservation and ecosystem services can be combined in a sustainable way
 - Stronger foundation under nature protection, preservation and development





Questions?