



Rijkswaterstaat
*Ministry of Infrastructure and the
Environment*

OASE

NCK Theme Day

Nov 6, 2018

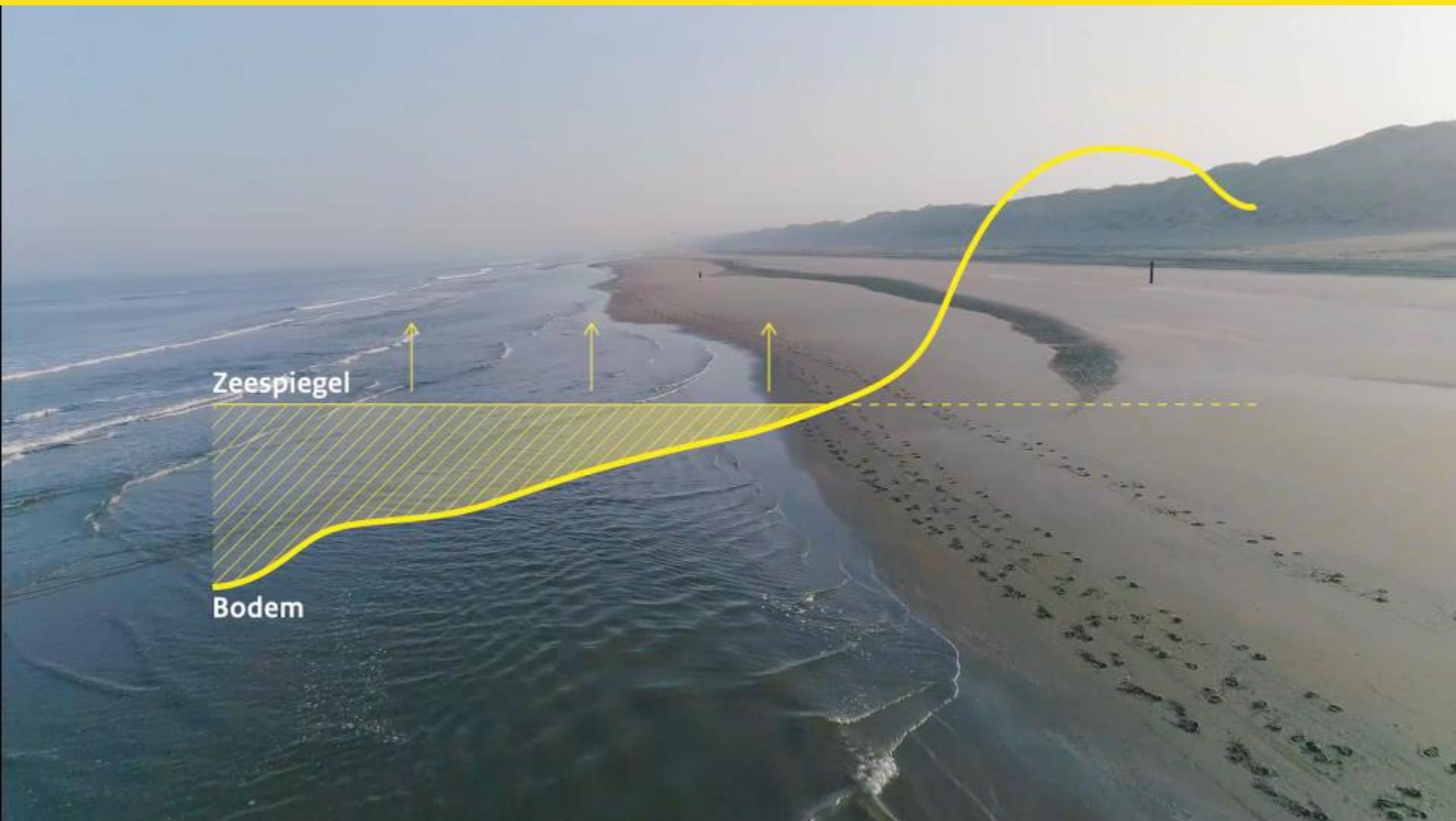
Quirijn Lodder

Rijkswaterstaat
TU Delft



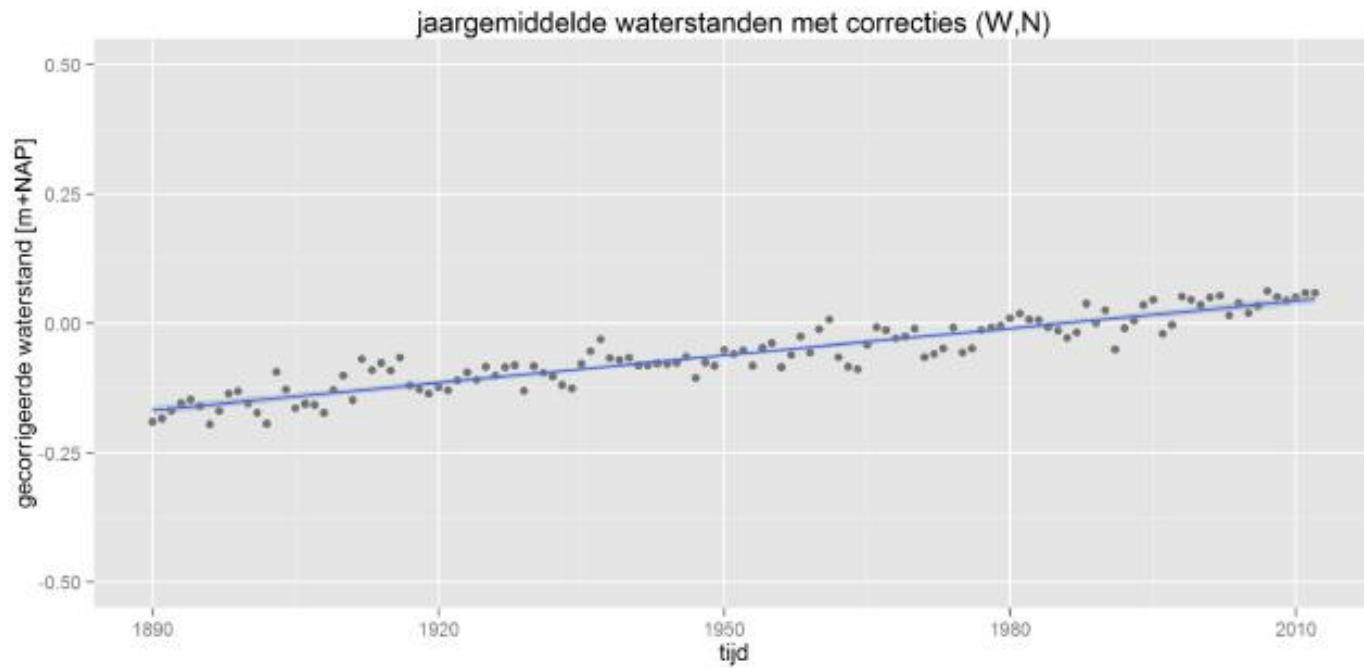
Zeespiegel

Bodem





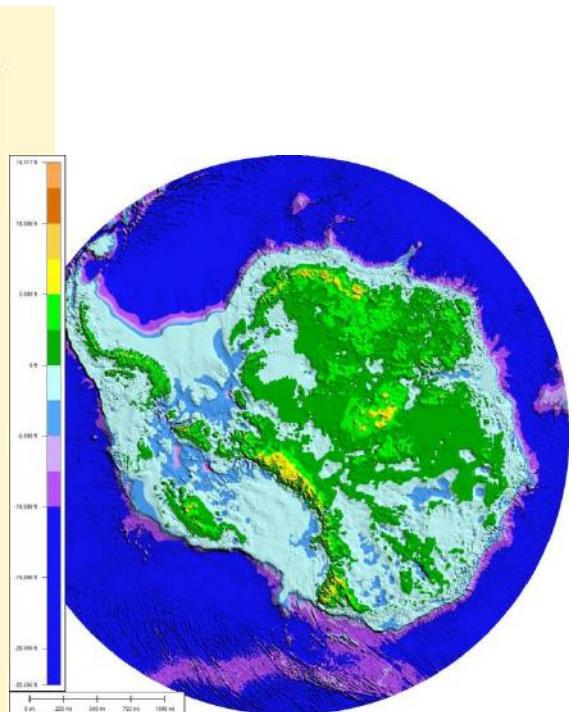
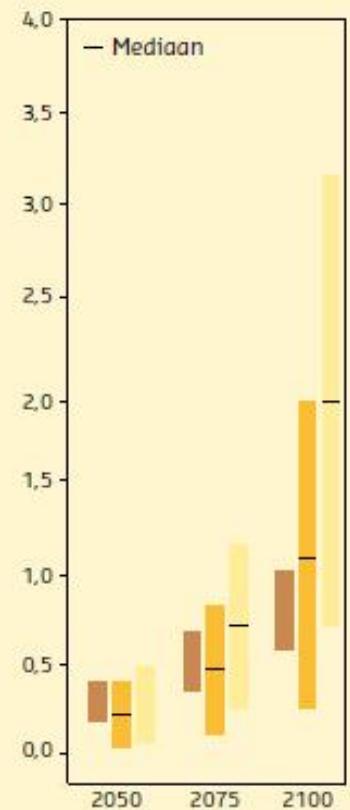
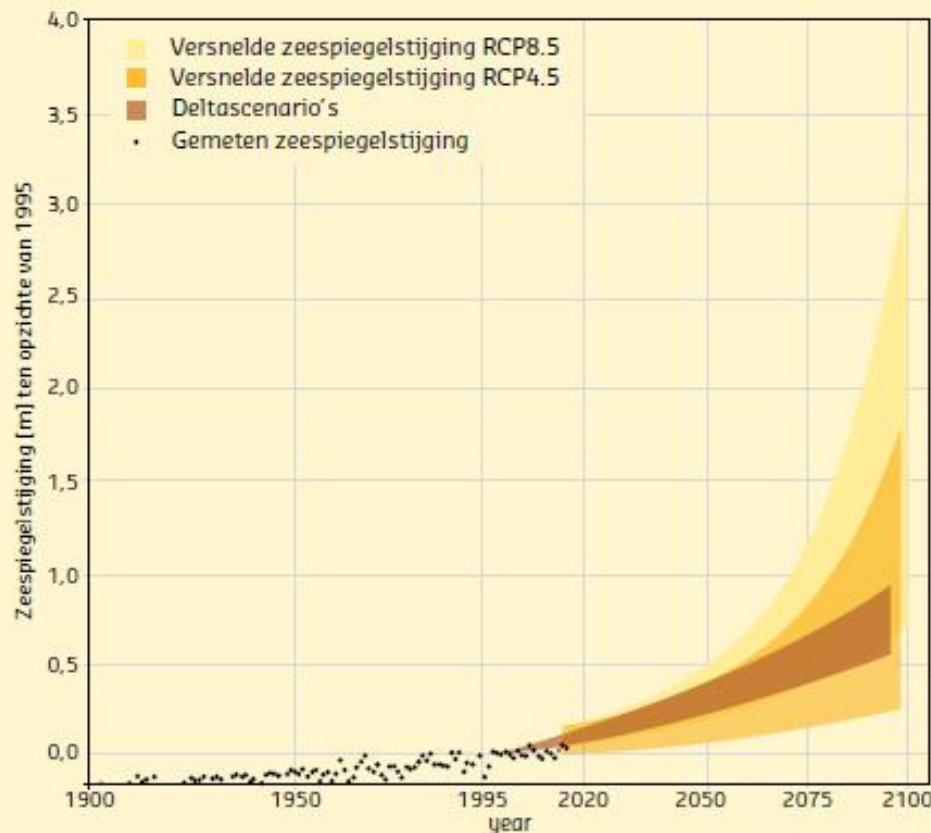
Average sea Levels: Now versus the (near?) future.



Figuur 3.6: Jaargemiddelde waterstanden op basis van β_0 en β_1 uit vergelijking 3.1 zonder (boven) en met (onder) wind correctie en 18,6 jarige getijcyclus.



Possible projections, a lot of uncertainty

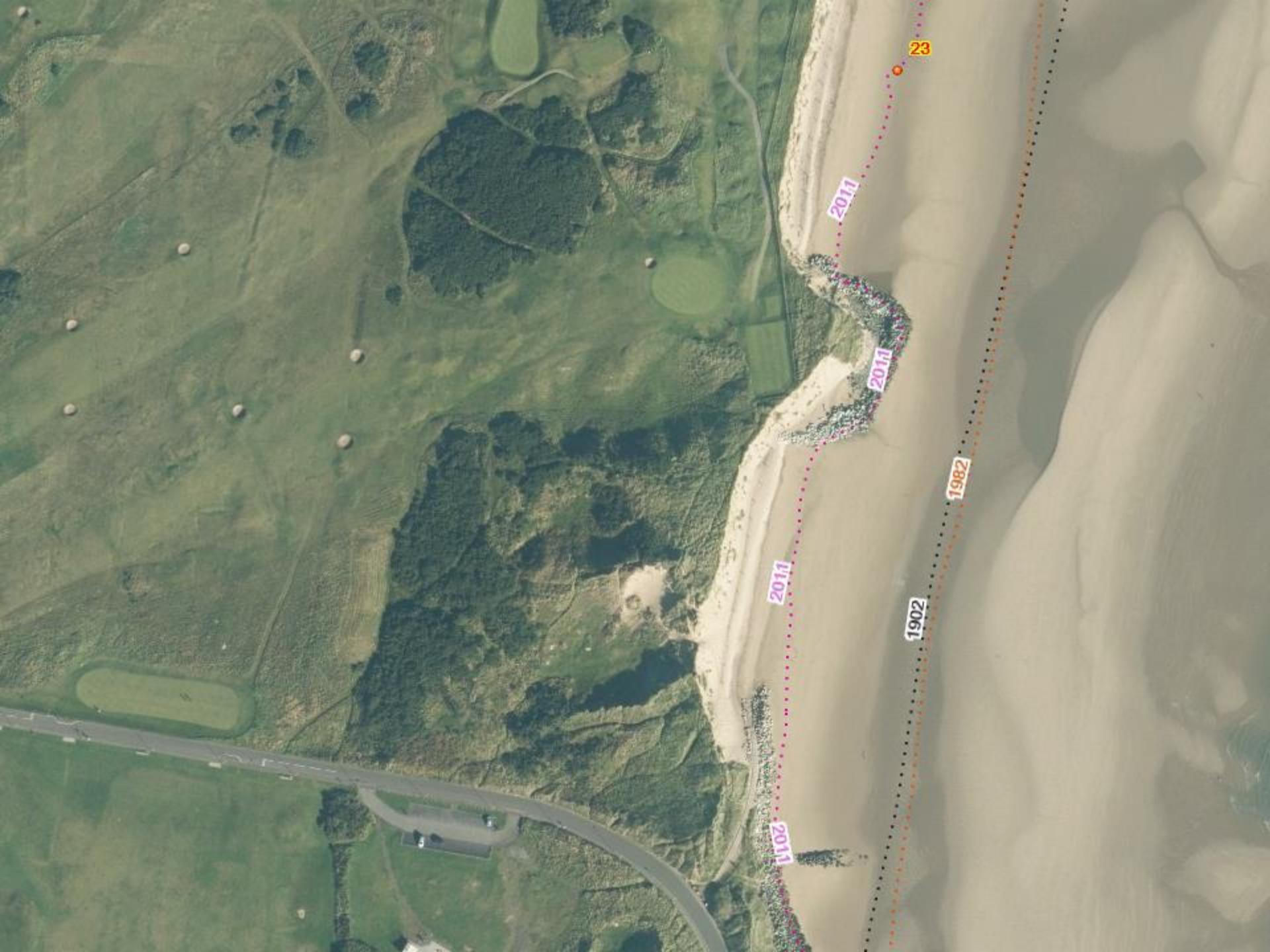


Paul V. heinrich - CC BY 3.0,
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Coastal erosion mitigation







2011

2011

2011

2011

1902

1982

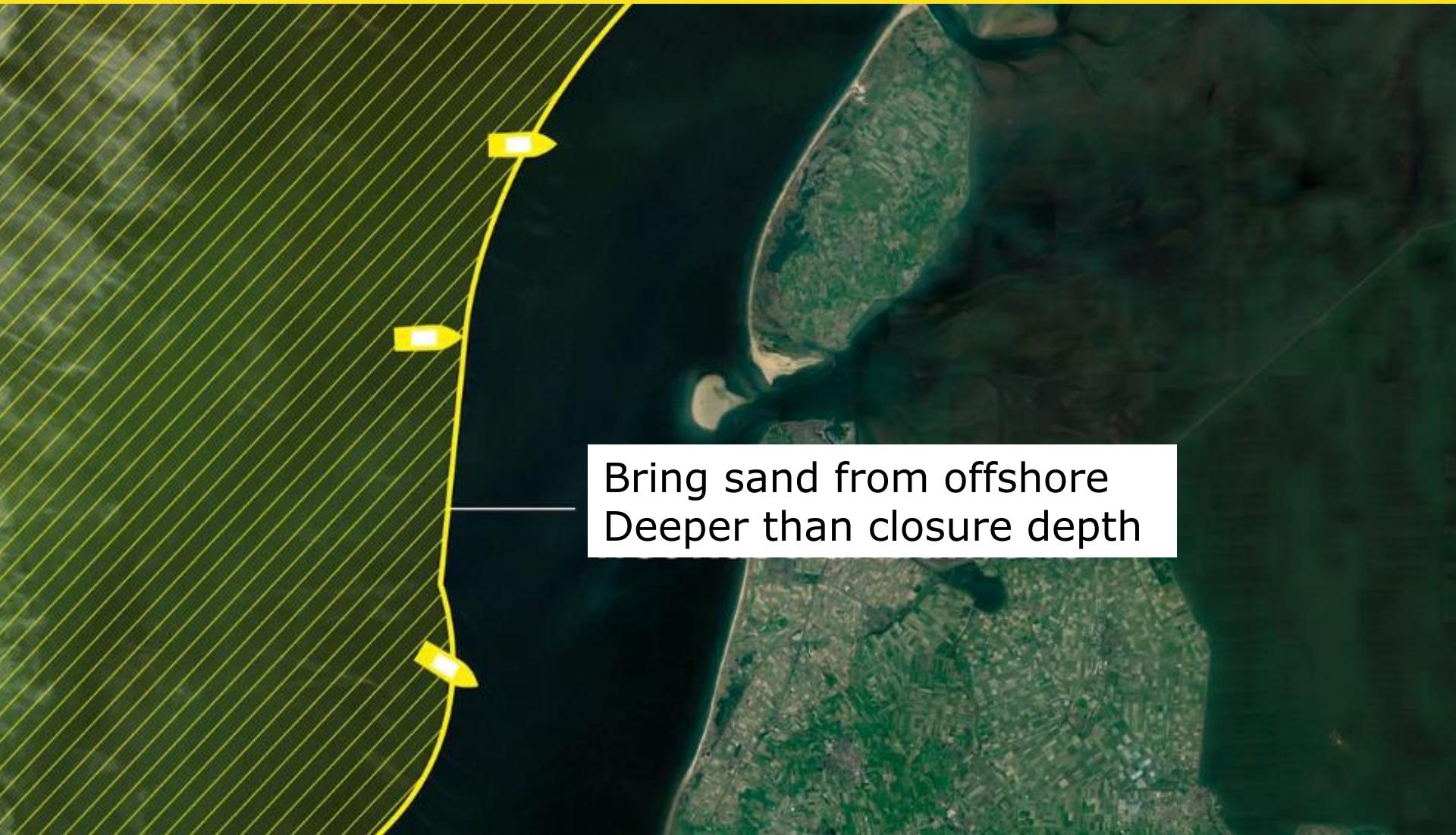
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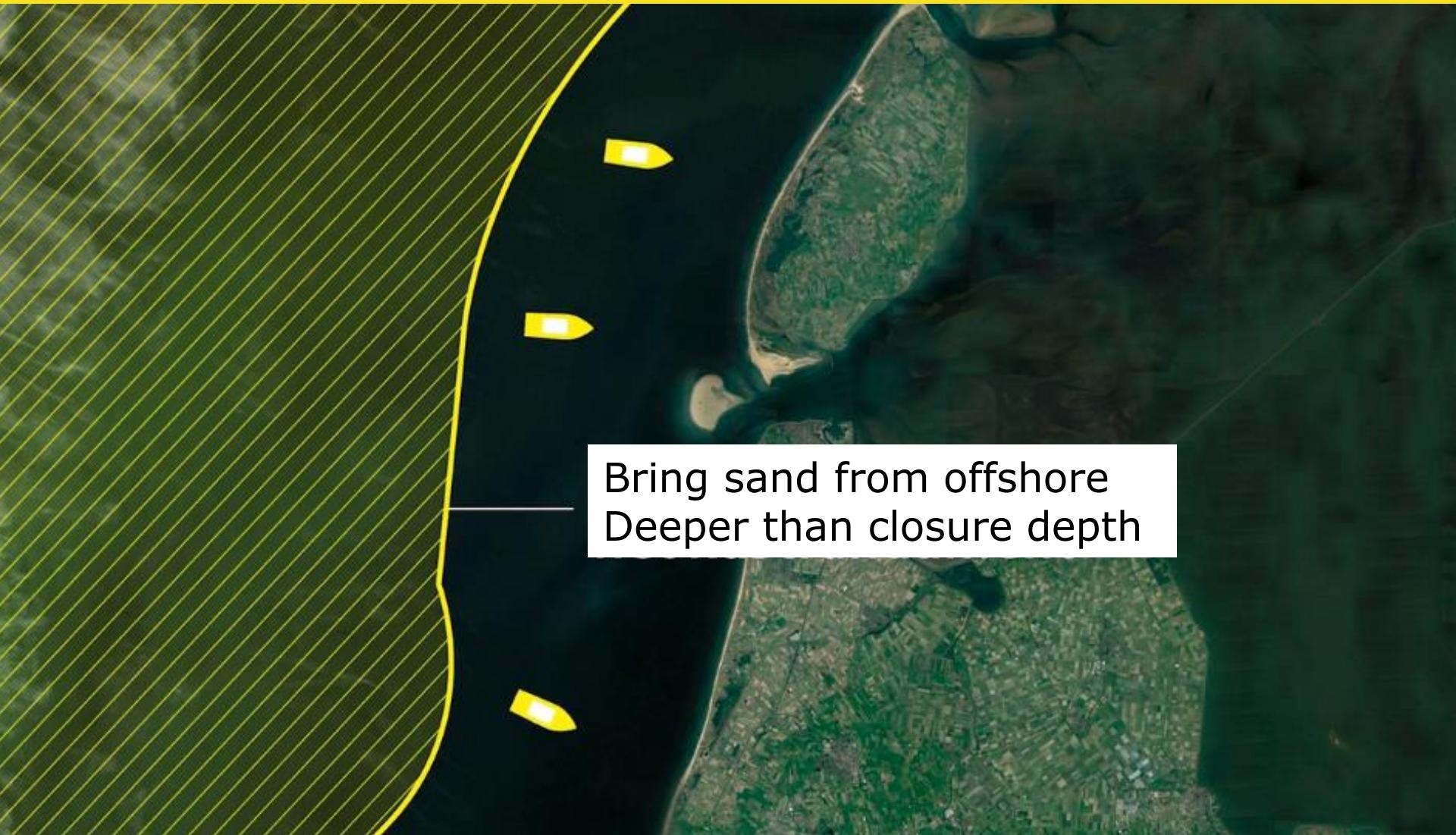


Current strategy

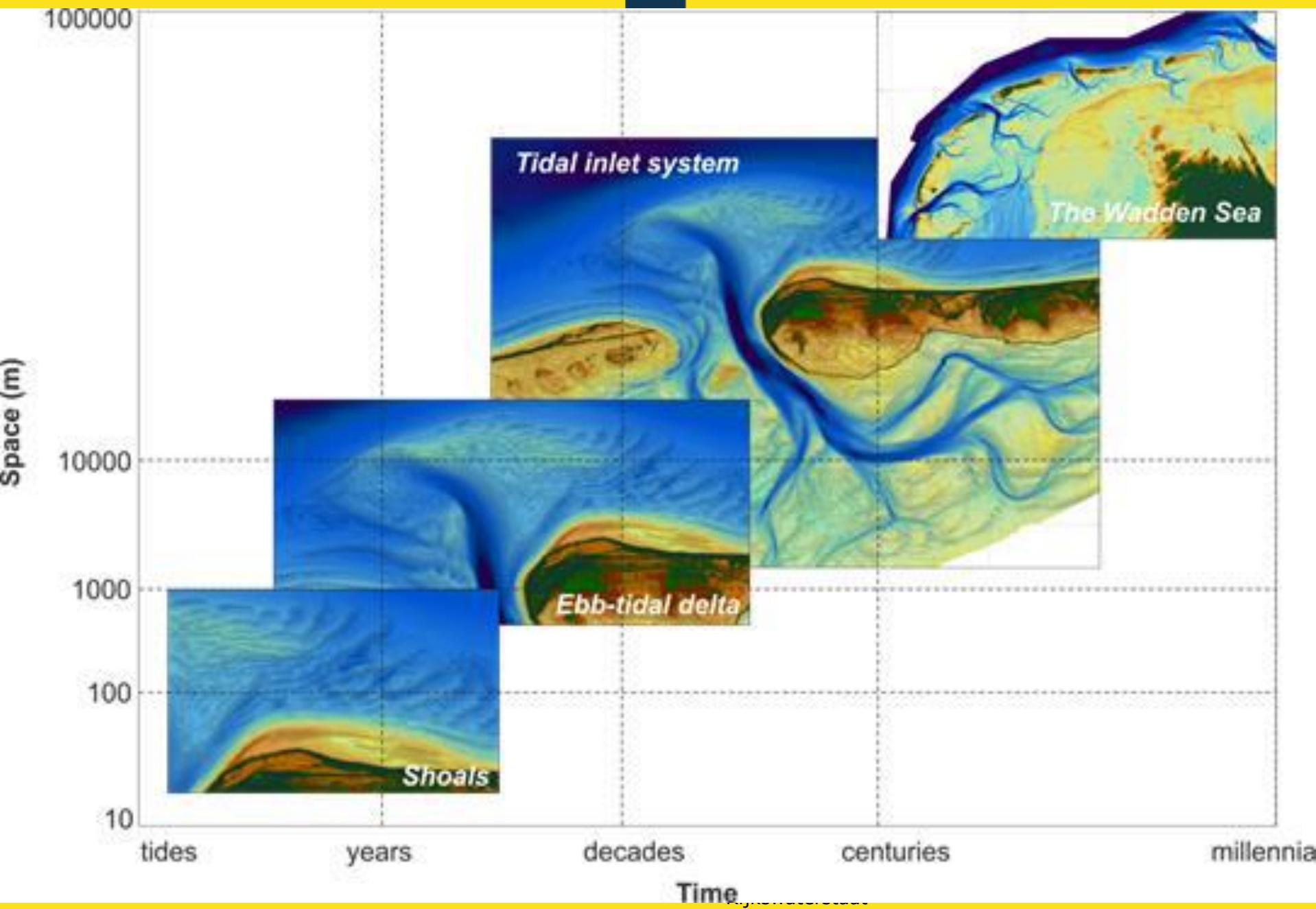
Feed the most active part of the coast with sediments.

These sediments mitigate local erosion and are allowed to spread so that the whole coast can grow with sea level.









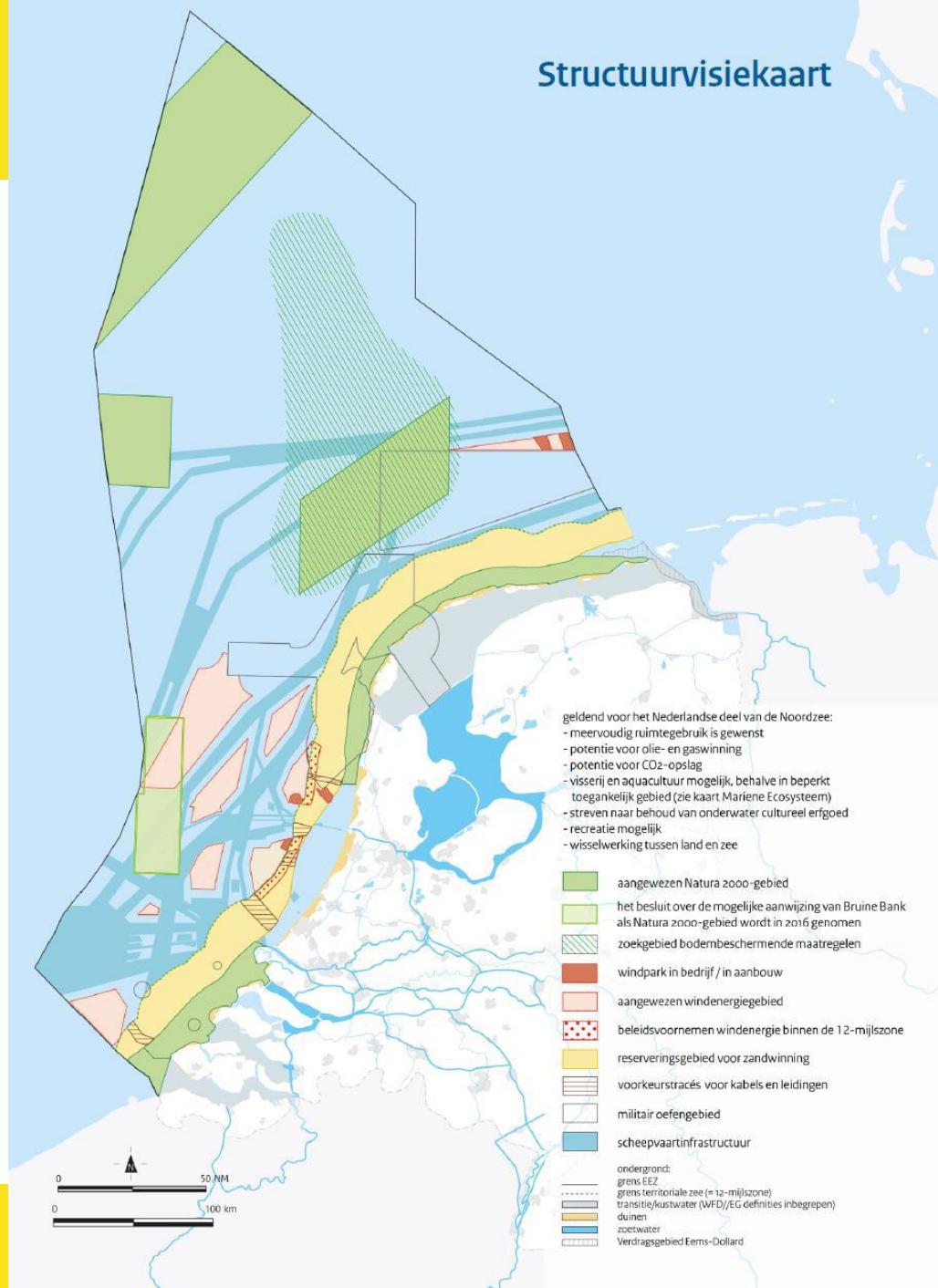
Spatial Planning



Beleidsnota Noordzee
2016-2021

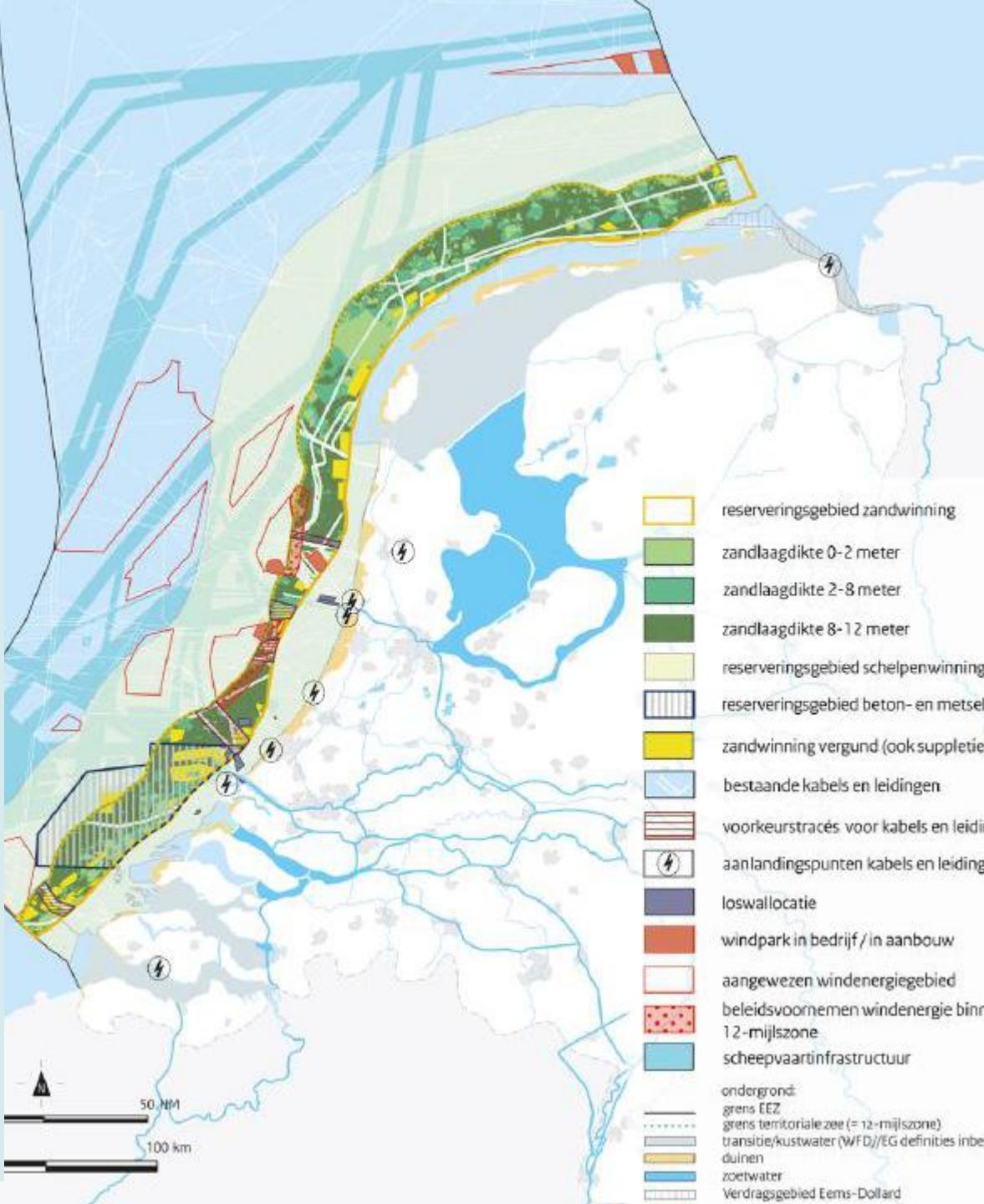


Structuurvisiekaart



Current insight between 1B and 1.5B m³ sand available and reserved for long term use:

- Coastal Maintenance
- Building Infrastructure
- No real competition between Sand Extraction and Windfarms (no overlap)
- Land cables are, if possible, planned such that competition with Sand Extraction is low





Is there enough sand?

- Certainly for the coming decades
- Long term future depending on:
 - Sea Level Rise
 - Possible changes in wave climates
(average and extreme)
 - Societal demands and resulting coastal policy
 - Spatial planning of the North Sea
 - etc.

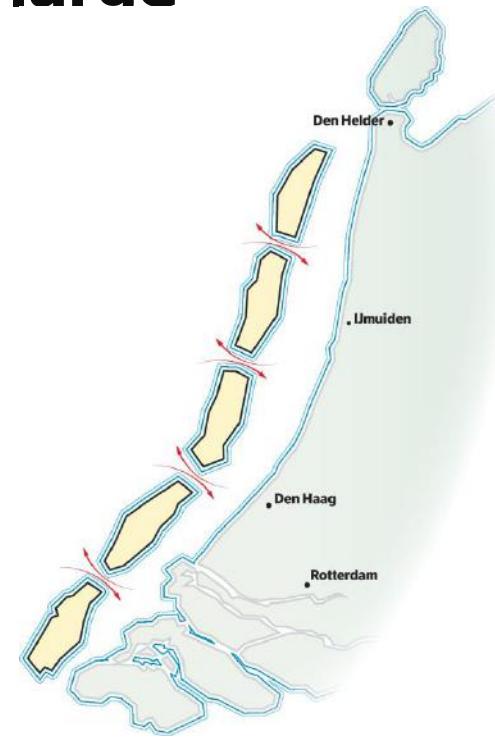
Spatial Planning

- Larger reservation area's needed?
- Deeper extraction?
- Interaction with other functions?





While I have your attention:
We need gradual plans, we do not need large scale infraplans like:





Examples of questions for the national government are:

- What are possible cumulative effects of all current and future activities in the North Sea?
- How do we minimize negative effects of use of the North Sea?
- How do we make sure enough sediments remains (economically) available for coastal maintenance and infrastructure development on land?

Part of our NCK tasks is to make sure the most up to date scientific insights are available when policy decisions are made.



Quote for today

“Whether it today becomes **red** or **blue**,
may some integrated NCK North Sea
Research come through”





Contact information

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