



NERA

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over opschaling

Even opfrissen (1): wat is de situatie?

OSPAR quality status report 2023:

- 17 vd 18 indicatoren van benthische habitats: geen goede toestand en geen verbetering
- mariene voedselweb in zorgelijke toestand



(2): waarom riffen?



Records reveal the vast historical extent of European oyster reef ecosystems

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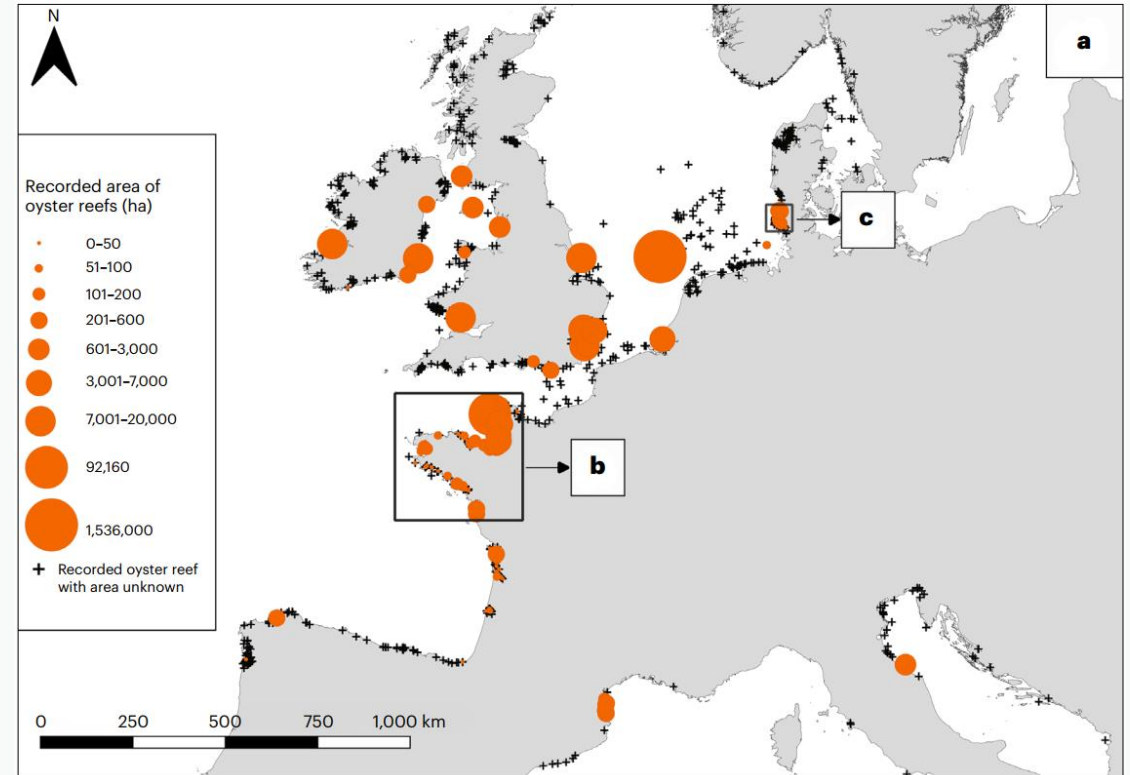
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Anthropogenic activities have impacted marine ecosystems at extraordinary scales. Biogenic reef ecosystems built by the European flat oyster (*Ostrea edulis*) typically declined before scientific monitoring. The past form and extent of these habitats thus remains unknown, with such information potentially providing valuable perspectives for current management and policy. Collating >1,600 records published over 350 years, we created a map of historical oyster reef presence at the resolution of 10 km² across its biogeographic range, including documenting abundant reef habitats along the coasts of France, Denmark, Ireland and the United Kingdom. Spatial extent data were available from just 26% of locations yet totalled >1.7 million hectares (median reef size = 29.9 ha, range 0.01–1,536,000 ha), with 190 associated macrofauna species from 13 phyla described. Our analysis demonstrates that oyster reefs were once a dominant three-dimensional feature of European coastlines, with their loss pointing to a fundamental restructuring and ‘flattening’ of coastal and shallow-shelf seafloors. This unique empirical record demonstrates the highly degraded nature of European seas and provides key baseline context for international restoration commitments.

Destructive fishing activities, pollution and reclamation have resulted in large-scale marine and coastal habitat degradation and loss globally¹. European seas are among the most impacted marine environments², and there is common agreement on the urgency to conserve and restore habitats to support and recover key ecological functions^{3,4}. However, without an understanding of the full extent of ecological changes resulting from human influence, the setting of policy goals can be impeded or contested⁵.

Assessments of human impact are commonly restricted by the short time span of modern scientific data, which is typically limited to recent decades⁶. In contrast, activities such as fishing and coastal harvesting have occurred for centuries to millennia^{1,6}. The early, intense and geographically broad exploitation of marine resources in Europe presents a critical challenge for the identification of ecological baselines and requires substantially deeper time perspectives than those available from scientific monitoring data⁷.

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(3): missie NERA

- om gezonde, zichzelf in standhoudende biogene riffen in de Nederlandse Noordzee terug te laten keren
- op een schaal waarop deze hun essentiële betekenis voor de Noordzeenatuur teruggekregen hebben

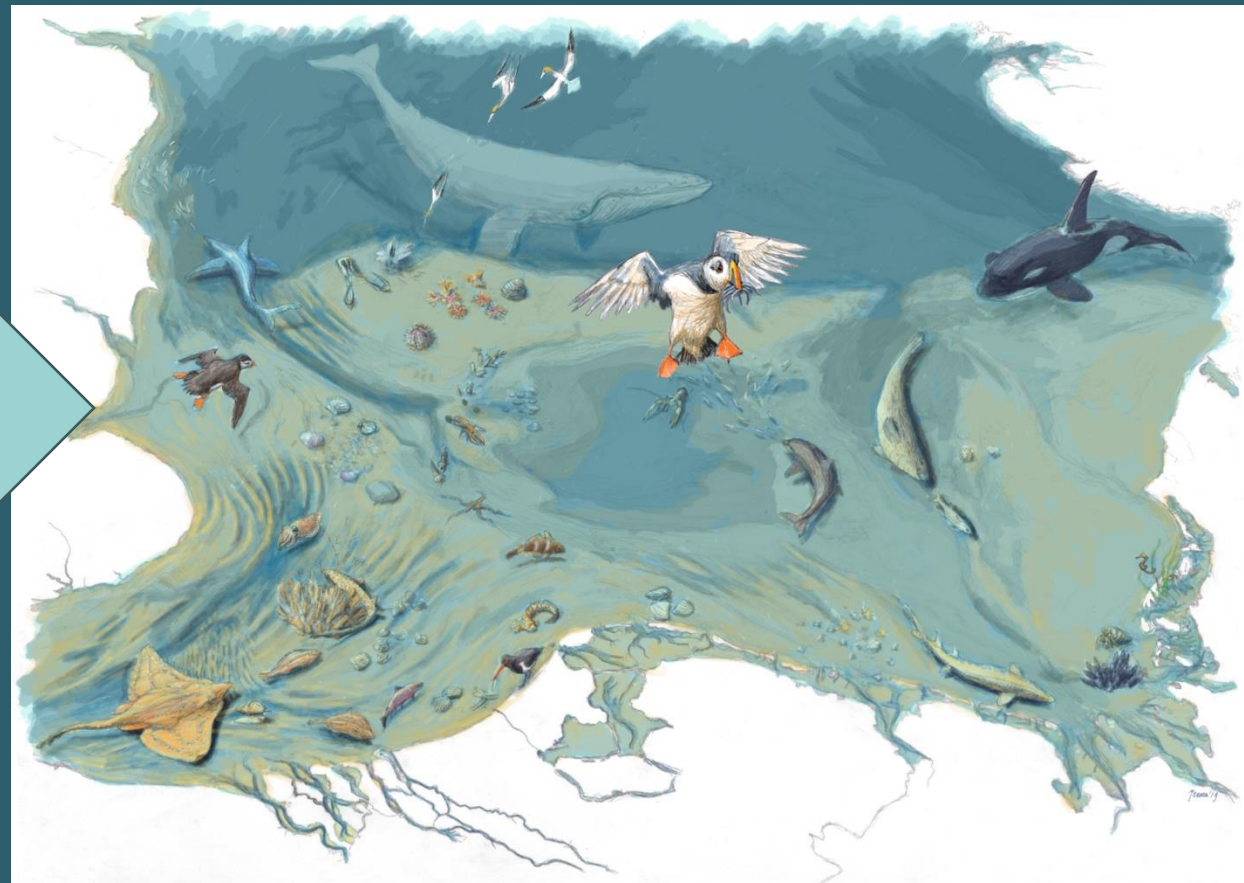
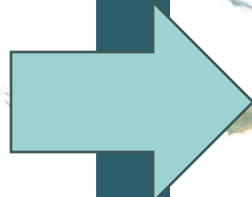


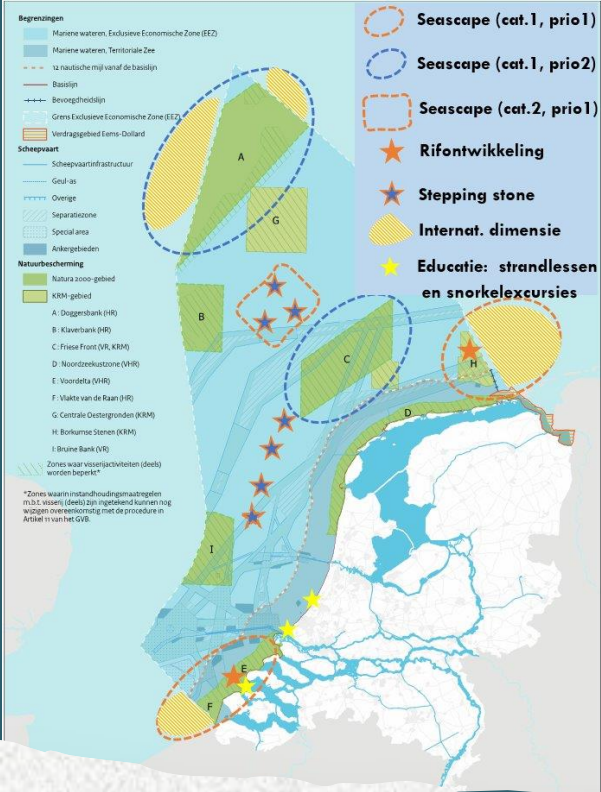
Wake-up call:

daar zijn we
nog lang niet

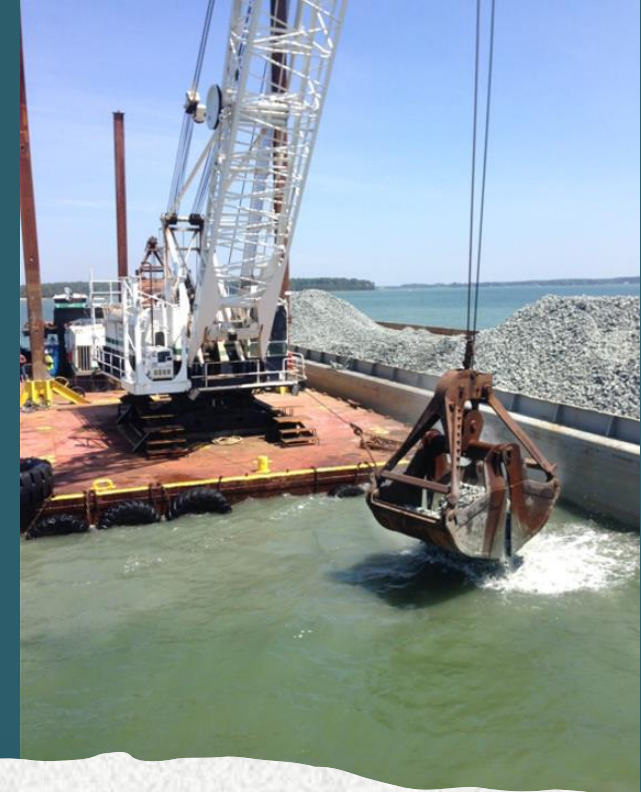


Opschaling





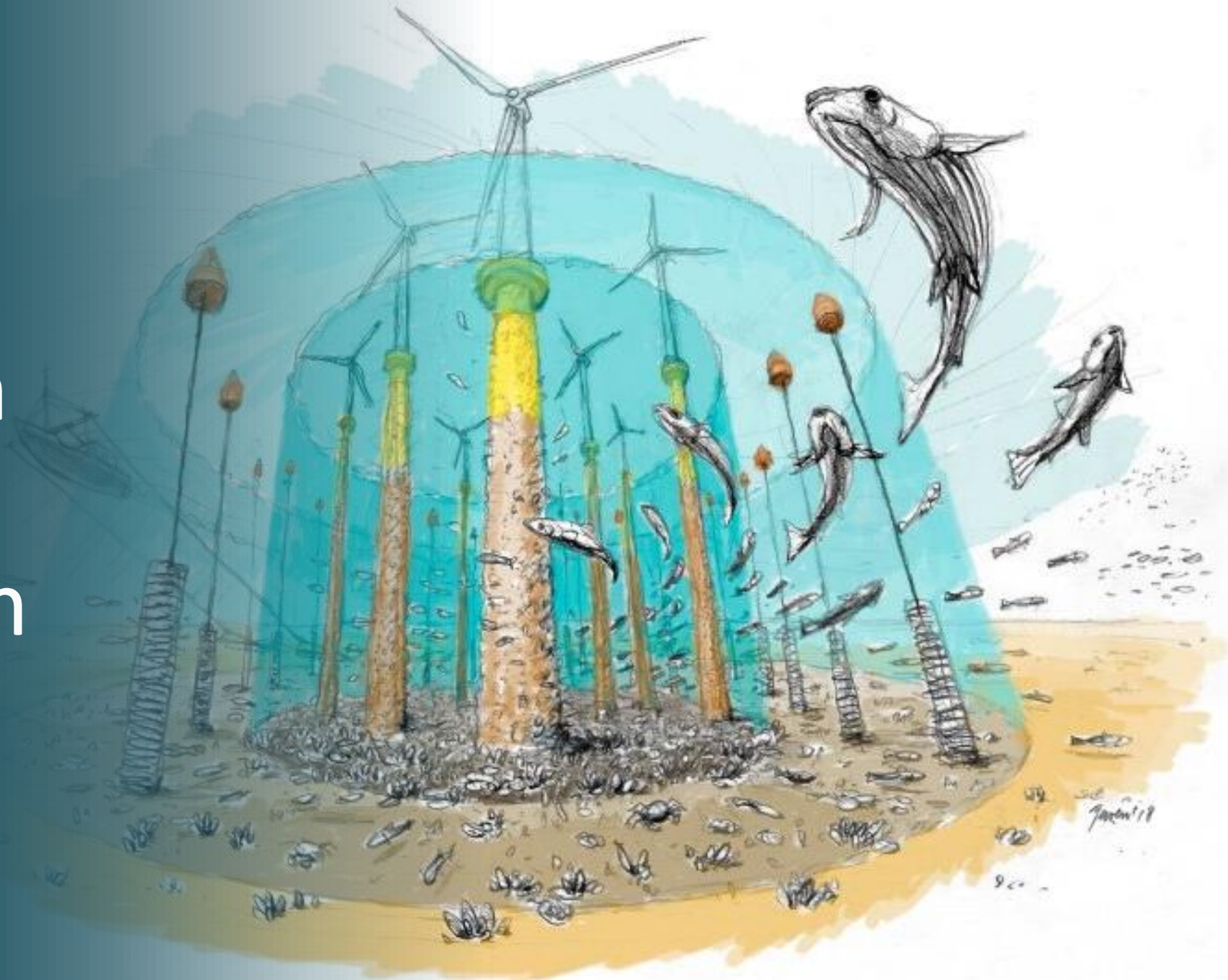
**Ik kan
het niet
alleen**



**ZONDER
STENEN,
GEEN
SUCCES**

Principes en hoofdlijnen voor opschaling

Lijn 1:
scour
protection
wordt
larvenbron



Aquaculture zone

Restored reef zone

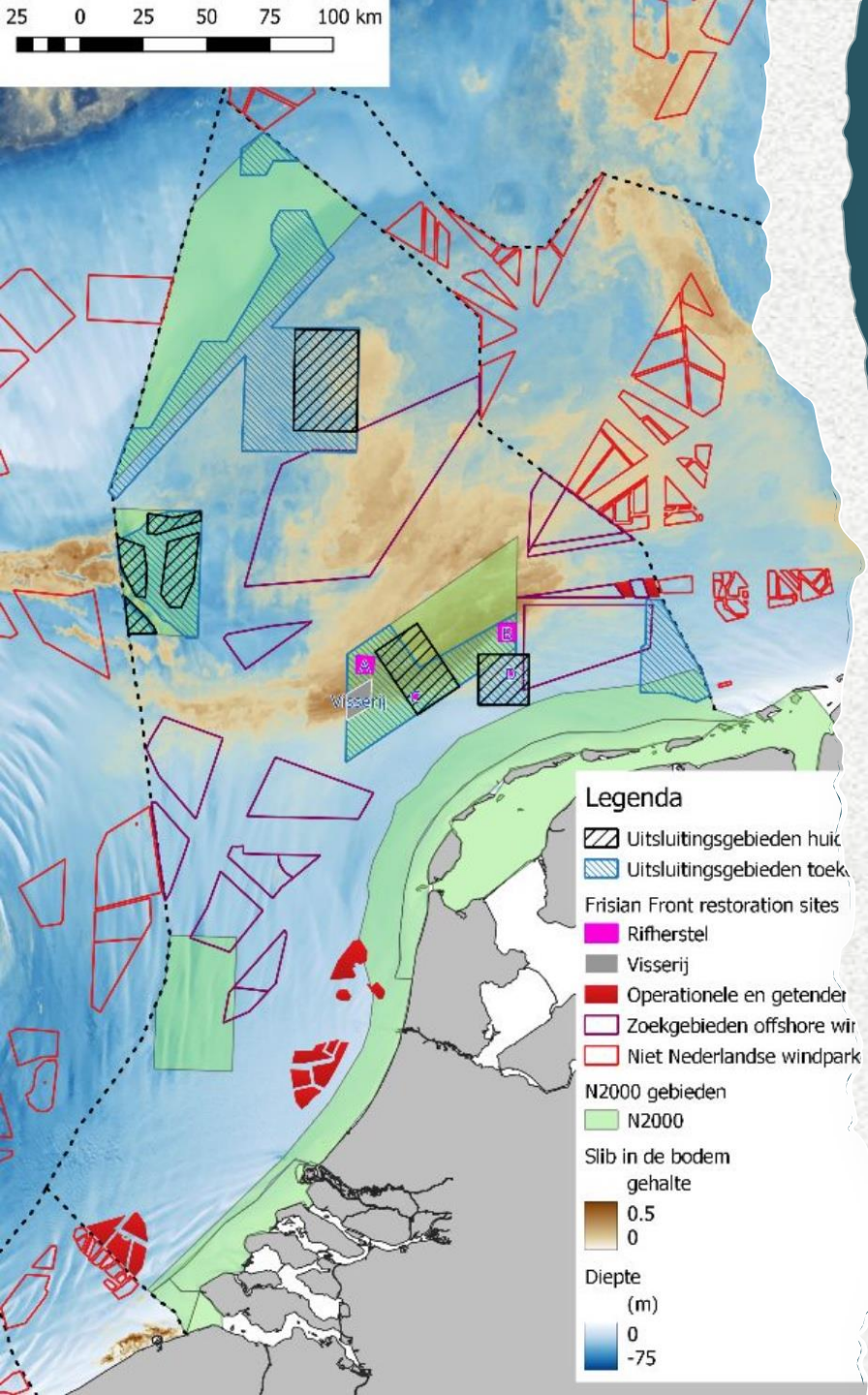
Aquaculture zone

Fishery zone





25 0 25 50 75 100 km



Lijn 2:
riffen in beschermd
gebieden

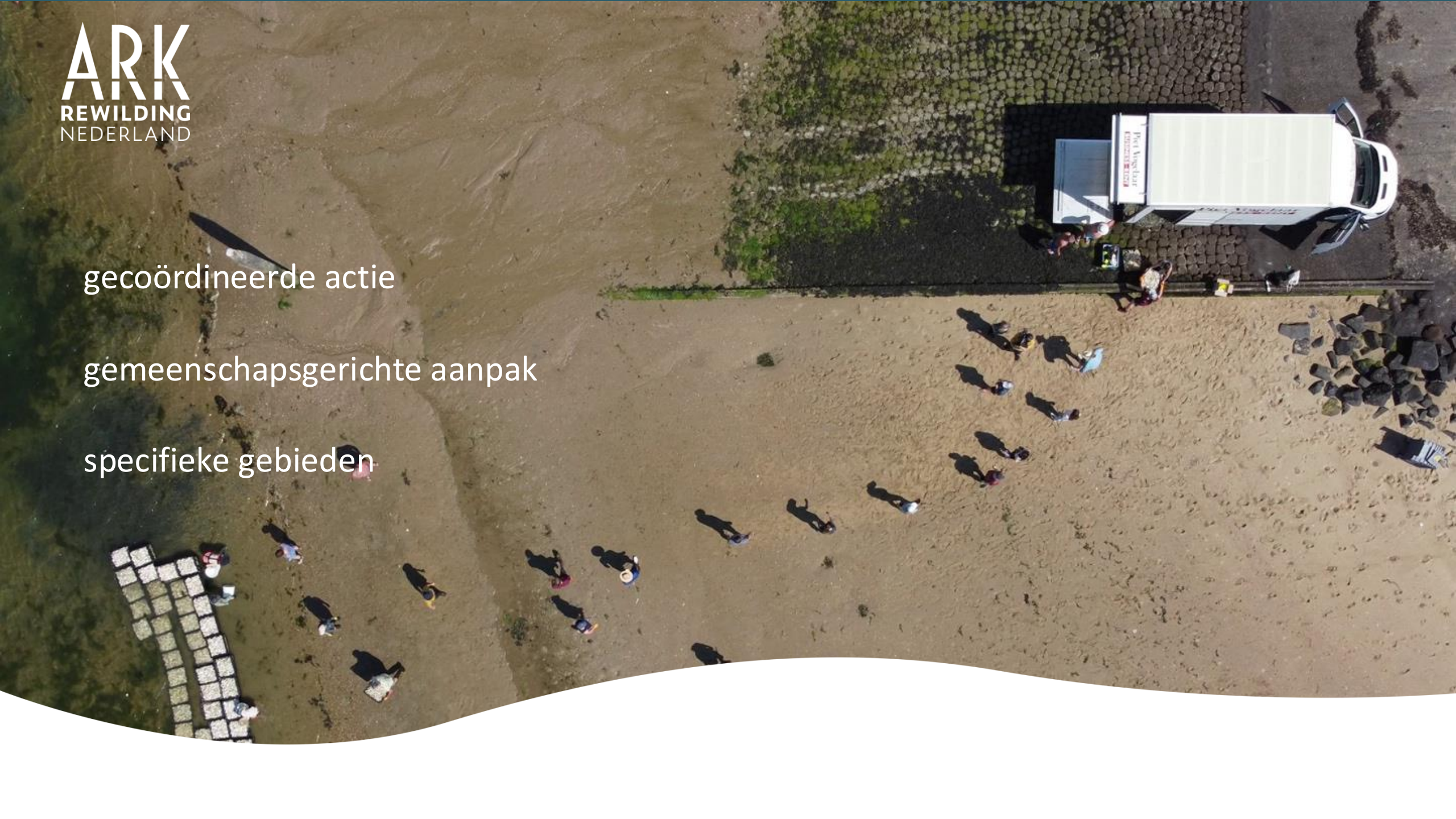
A detailed illustration of a seascape. In the center, a penguin with its wings spread is swimming. To the right, a large whale is visible. In the upper right, a shark is swimming. The water is depicted with various shades of blue and green, suggesting depth and movement. The bottom of the illustration shows a sandy seabed with various marine organisms like shells, coral, and small fish. The overall style is painterly and detailed.

Lijn 3:
breder context -> seascape

gecoördineerde actie

gemeenschapsgerichte aanpak

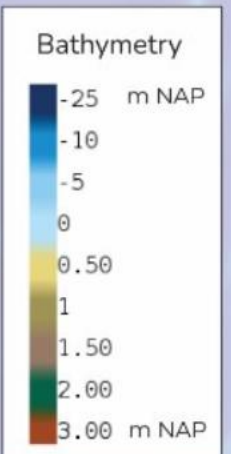
specifieke gebieden





Voordelta

Proposed Seascape zone



Borssele I & II Windpark operated by Ørsted

Search area for nature-inclusive mussel farming with Krijn Verwijs

Planned offshore cables by TenneT

Legend:

Constructions and elements in the area

Natural reef area

Active projects of ARK

Partners

- Potential reef restoration areas
- Built TenneT cables
- Planned TenneT cables
- Natura 2000 border

Natura 2000 area
Maasvlakte 2

Proposed no-bottom-disturbance areas

Voorne

Goeree

Blokkendam: Natural Flat oyster reef

Oyster restoration pilot

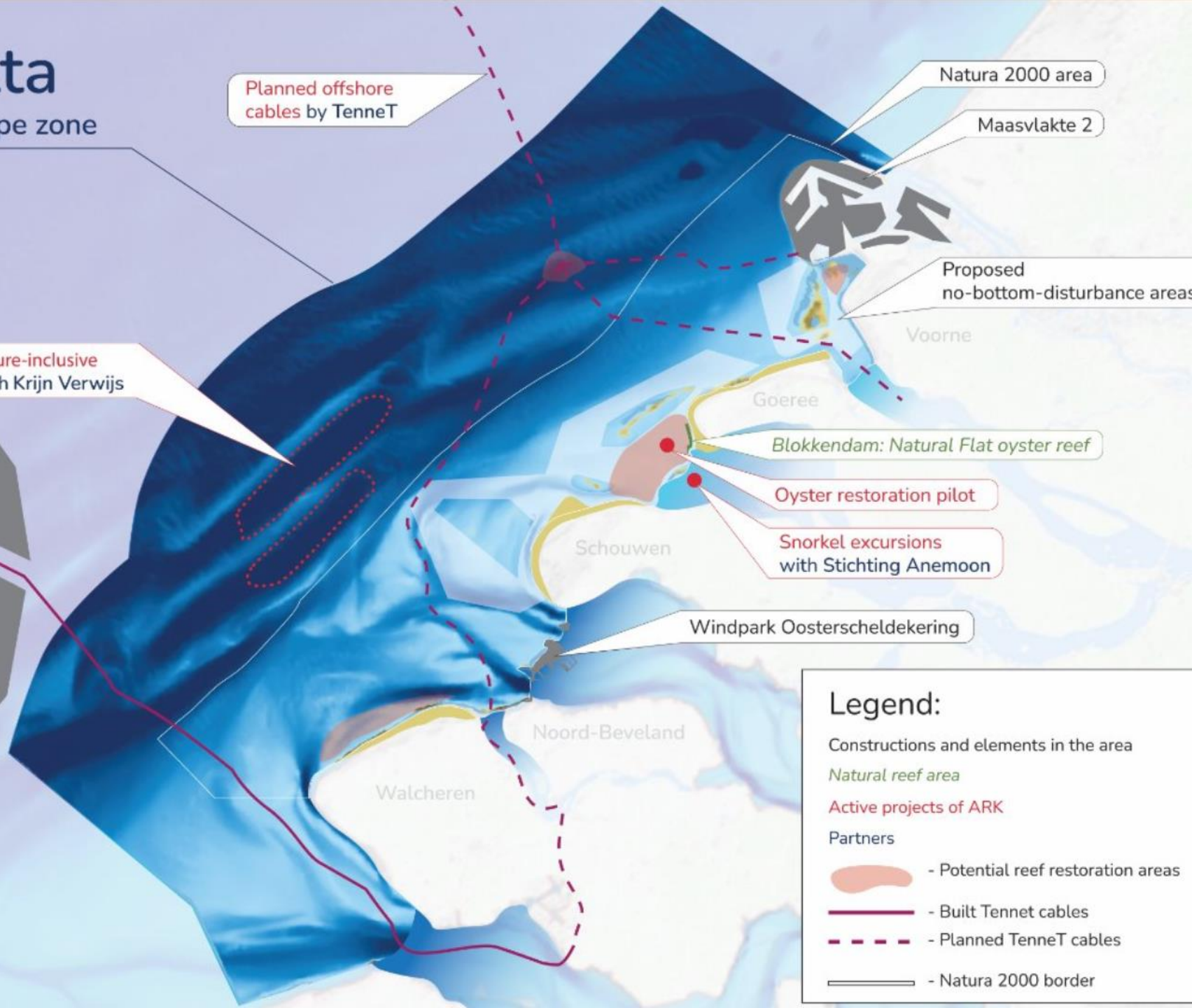
Snorkel excursions with Stichting Anemoon

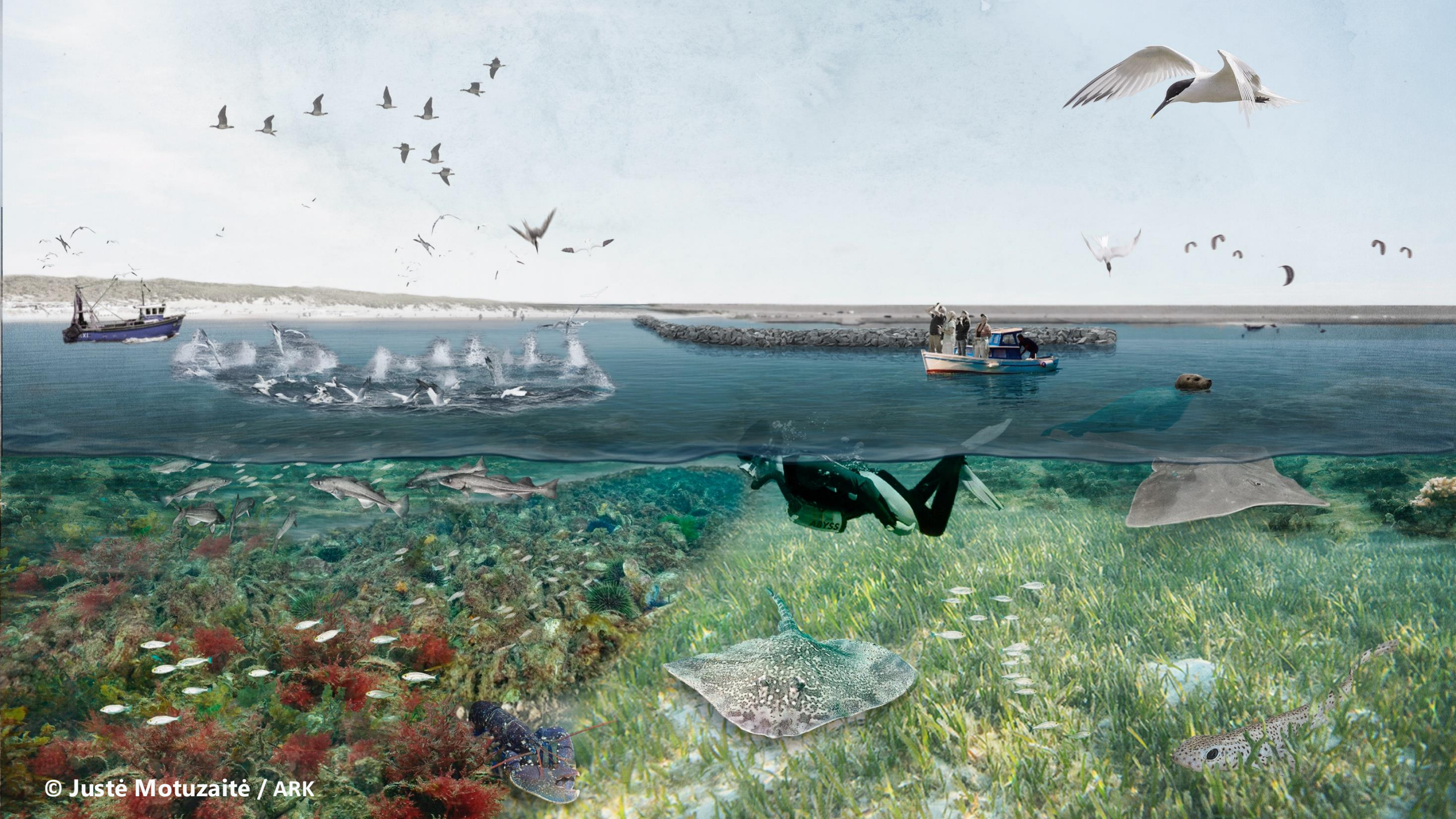
Windpark Oosterscheldekering

Schouwen

Noord-Beveland

Walcheren





Call to action

Aan welke lijn wil je bijdragen?

Op welke manier?

Lijn 1: scour protection als larvenbron

Lijn 2: riffen in beschermde gebieden

Lijn 3: seascape

Of andere opties voor bijdragen
Hier komen we later vandaag op
terug





Bekijk meer informatie op

www.nera.nu