



# Impacts from offshore infrastructure: What does this mean to our work in the Wadden Sea

Bernd Oltmanns | Wadden Sea Day Wilhelmshaven | 29.08.2024



# Content

- **Who is affected, where is the energy transition currently (also) taking place?**
- **Construction technology and construction periods now and in future**
- **Conflicts with conservation goals of the National Park**
- **Solutions are complex and time- and labour-intensive**
- **Coming challenges: New cable design, cumulative effects**
- **Conclusions**





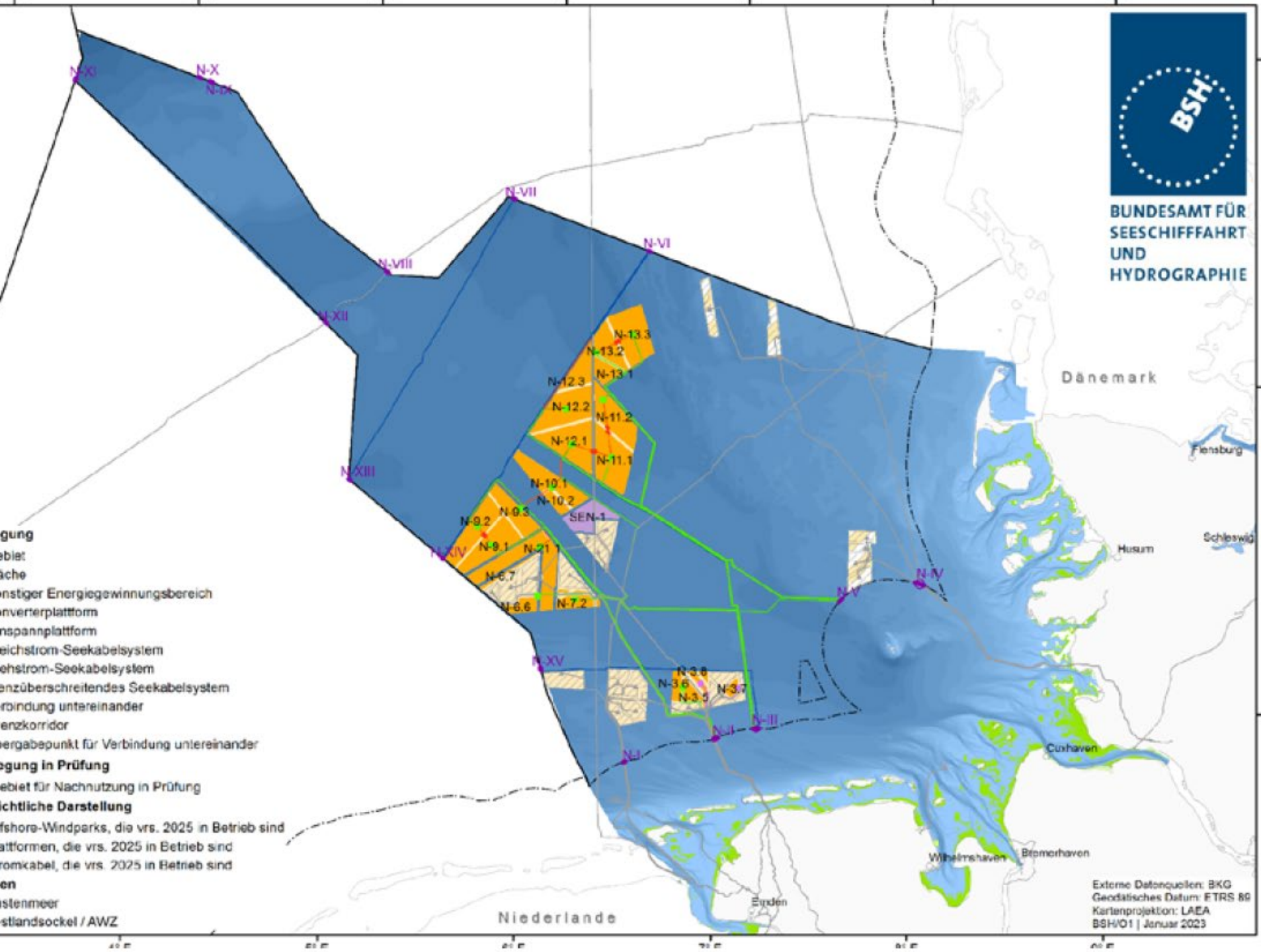
# Nationalpark Wattenmeer



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# Site Development Plan for the EEZ by the German Federal Republic (FEP 2023)

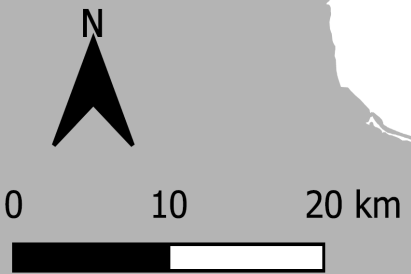
Quelle: BSH, FEP 2023

# Lower Saxon Wadden Sea National Park:

3.450 km<sup>2</sup> for natural and dynamic habitats

- Entire Lower Saxon coastline
- Complete habitat inventory

**„Let nature be nature!“**



**Nationalpark Wattenmeer**  
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A diagram showing three concentric circles: a blue center, a yellow middle ring, and a green outer ring.

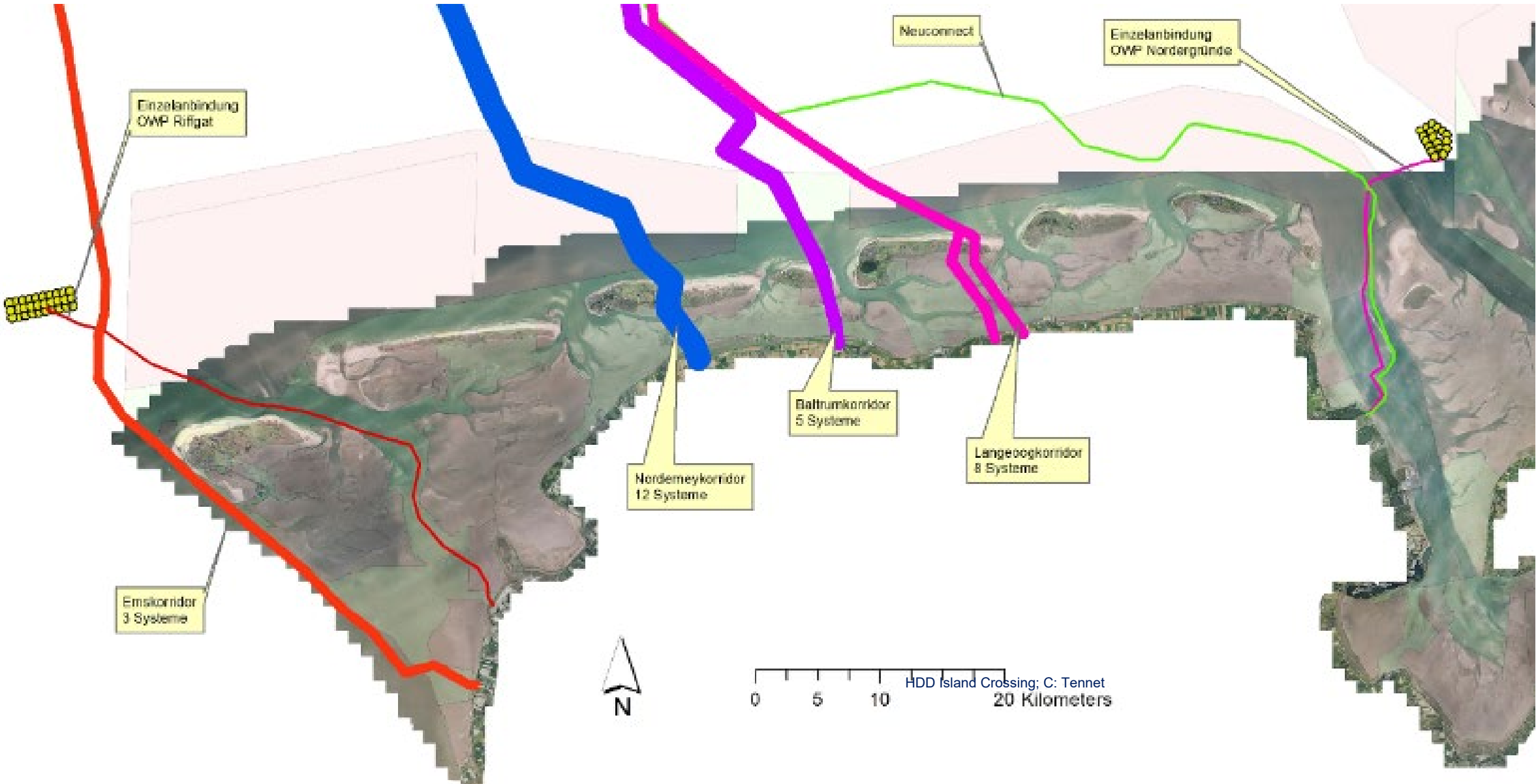
	Ruhezone
	Zwischenzone
	Erholungszone

## Previous construction 900 MW, 2-wire HVDC systems

- Each cable project usually takes 3-5 years (including approval procedure)
- Geotechnical analysis and technical route surveys
- Munitions clearance including blasting on site
- Horizontal Directional Drilling (HDD) to cross main dykes, dunes and forelands (drilling lengths up to 1,300m, ~ 25m below ground level)
- Mudflats: Cable laying technique using vibration or "hybrid sword" (Vibro plough with water injection support)
- Nearshore and offshore: Injection method, (Injection sword)



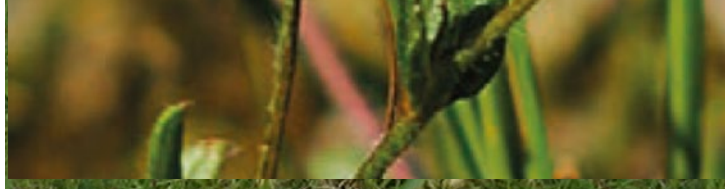
# Offshore Windfarm Grid Connection; recent and future Projects, potential Scenario





## Conflict: Protection of rare species

*Spotted Rock-Rose (Tuberaria guttata) Norderney*



blow-out of drilling fluid can eliminate the only population of a species



# Conflict: Breeding birds on the beach

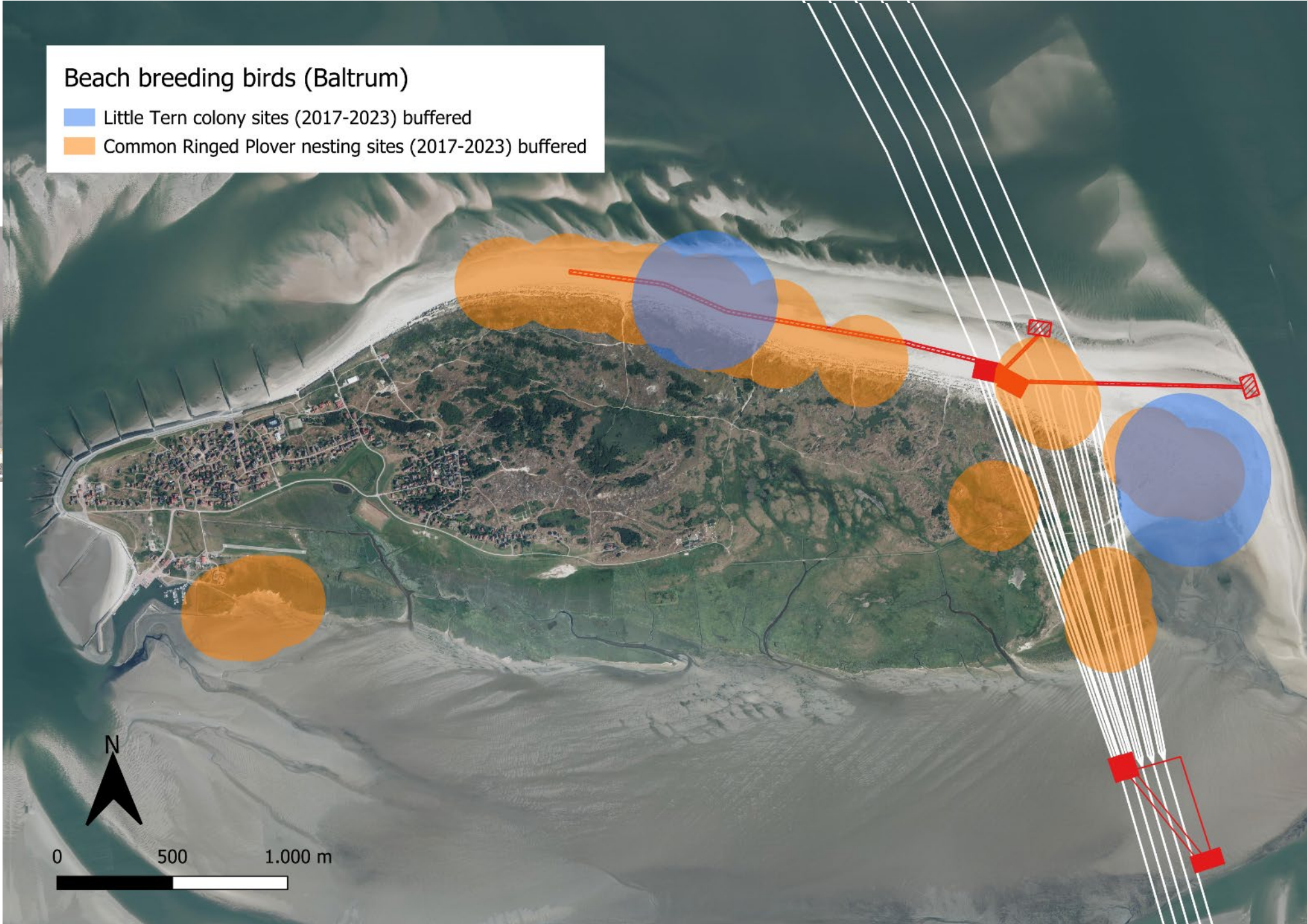
*Little Tern and Ringed Plover*  
**Baltrum**



disturbance or blockage of Breeding sites

Beach breeding birds (Baltrum)

- Little Tern colony sites (2017-2023) buffered
- Common Ringed Plover nesting sites (2017-2023) buffered





## Conflict: moulting sea ducks

disturbance or  
blockage of  
movements to  
feeding areas

### Eider ducks (*Somateria mollissima*) in the Baltrum and Langeoog corridor

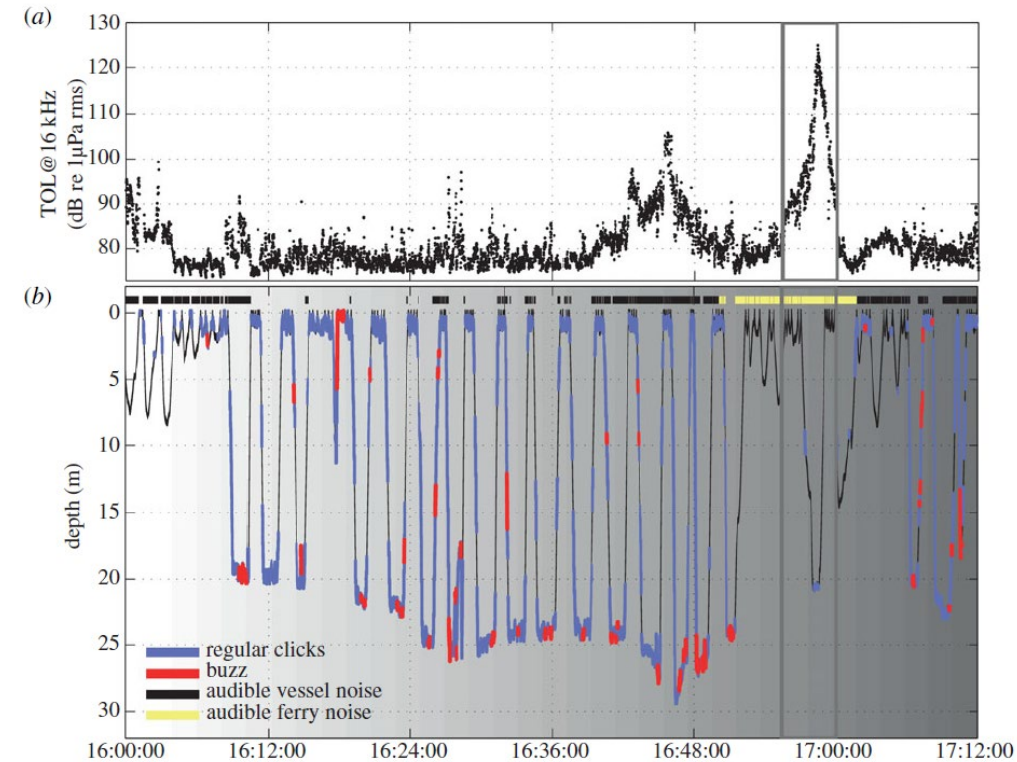
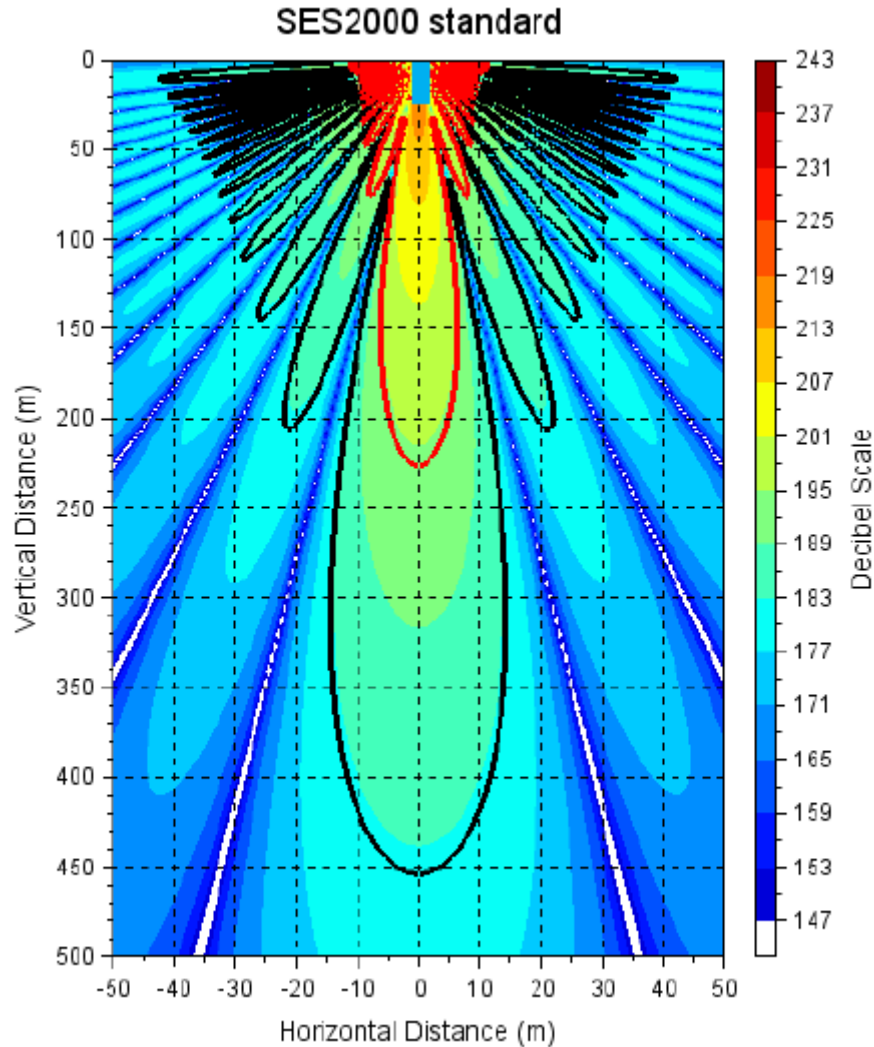




# Conflict: marine mammals

## *Harbour porpoises and seals nearshore*

disturbance or blockage of habitats during preparatory subsoil investigations due to noise from the equipment used



## Conflict: Benthos

### *Mudflat fauna*

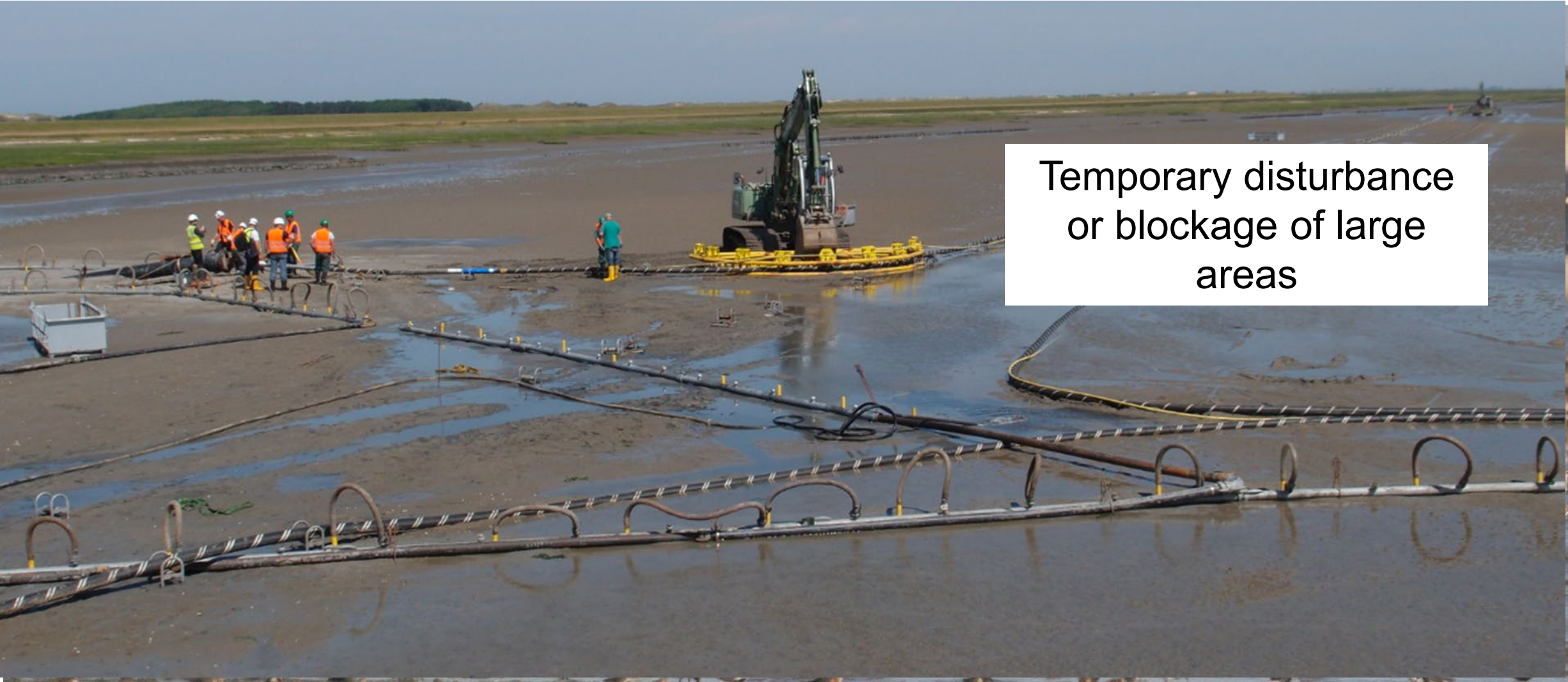
Temporary habitat  
destruction





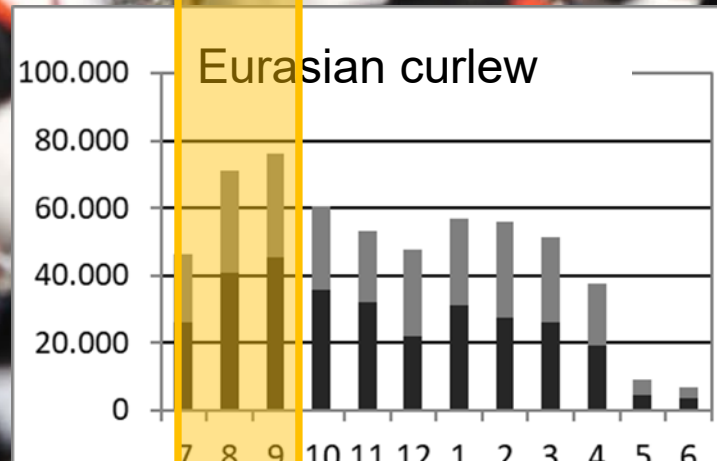
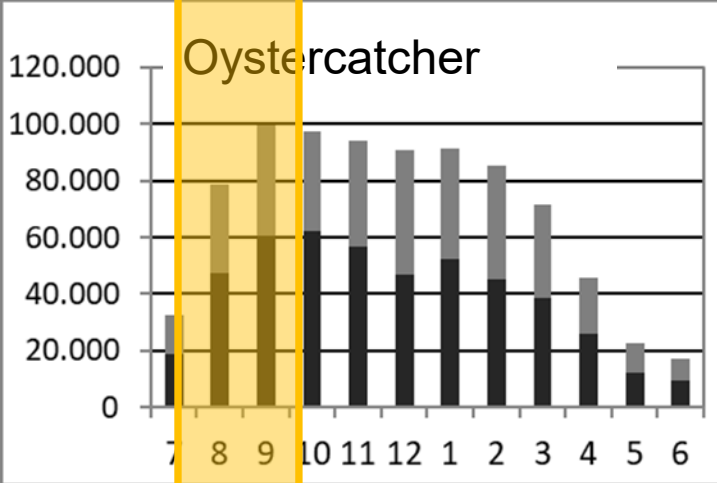
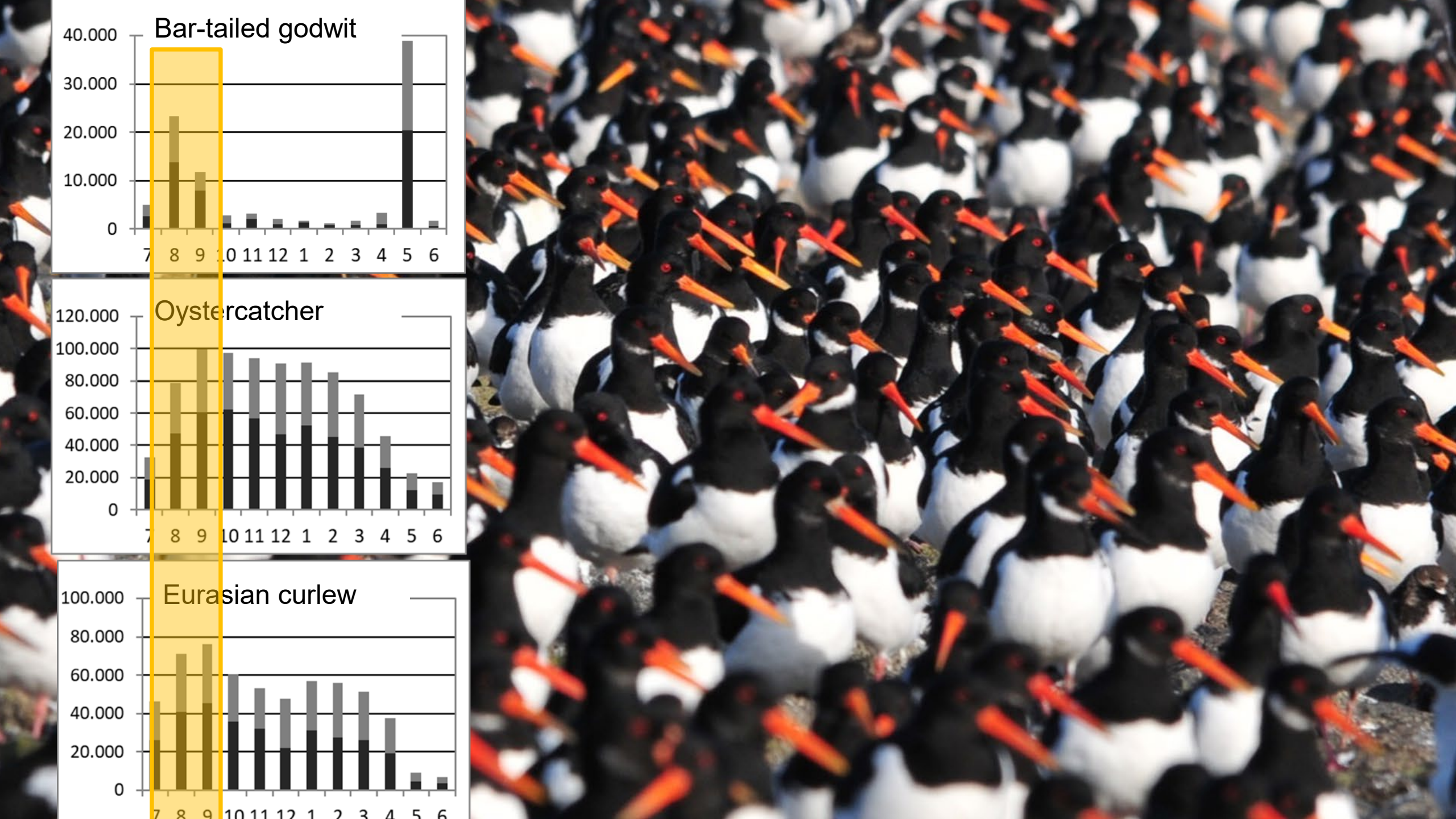
# Conflict: Migratory birds

*roosting sites and feeding areas*



Temporary disturbance  
or blockage of large  
areas





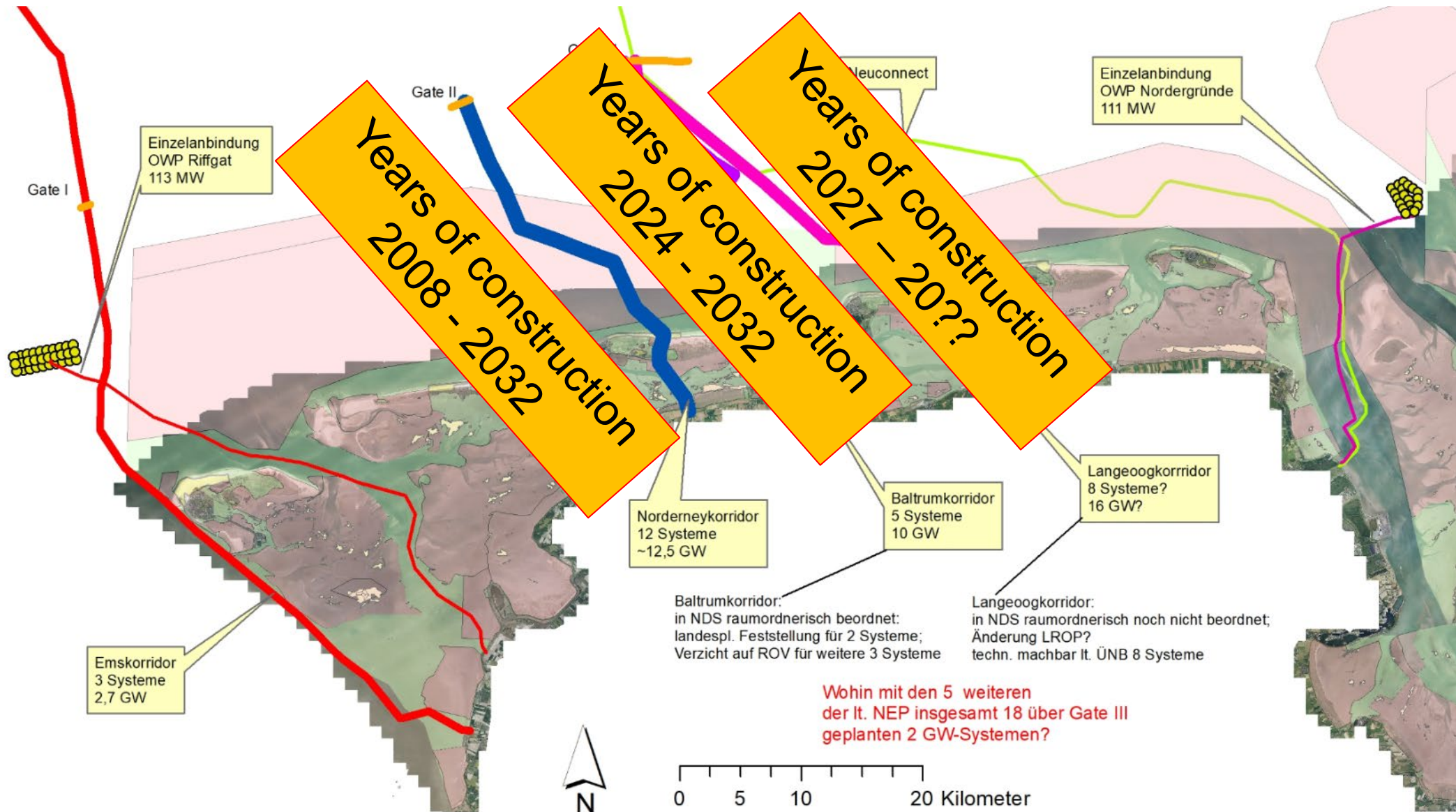


**Only with the best technology, experience, careful planning and co-operation between nature conservation and TSO has it been possible so far to make the interventions 'bearable'.**





# But, work on 2 corridors from 2024, possibly on three corridors from 2027 on?





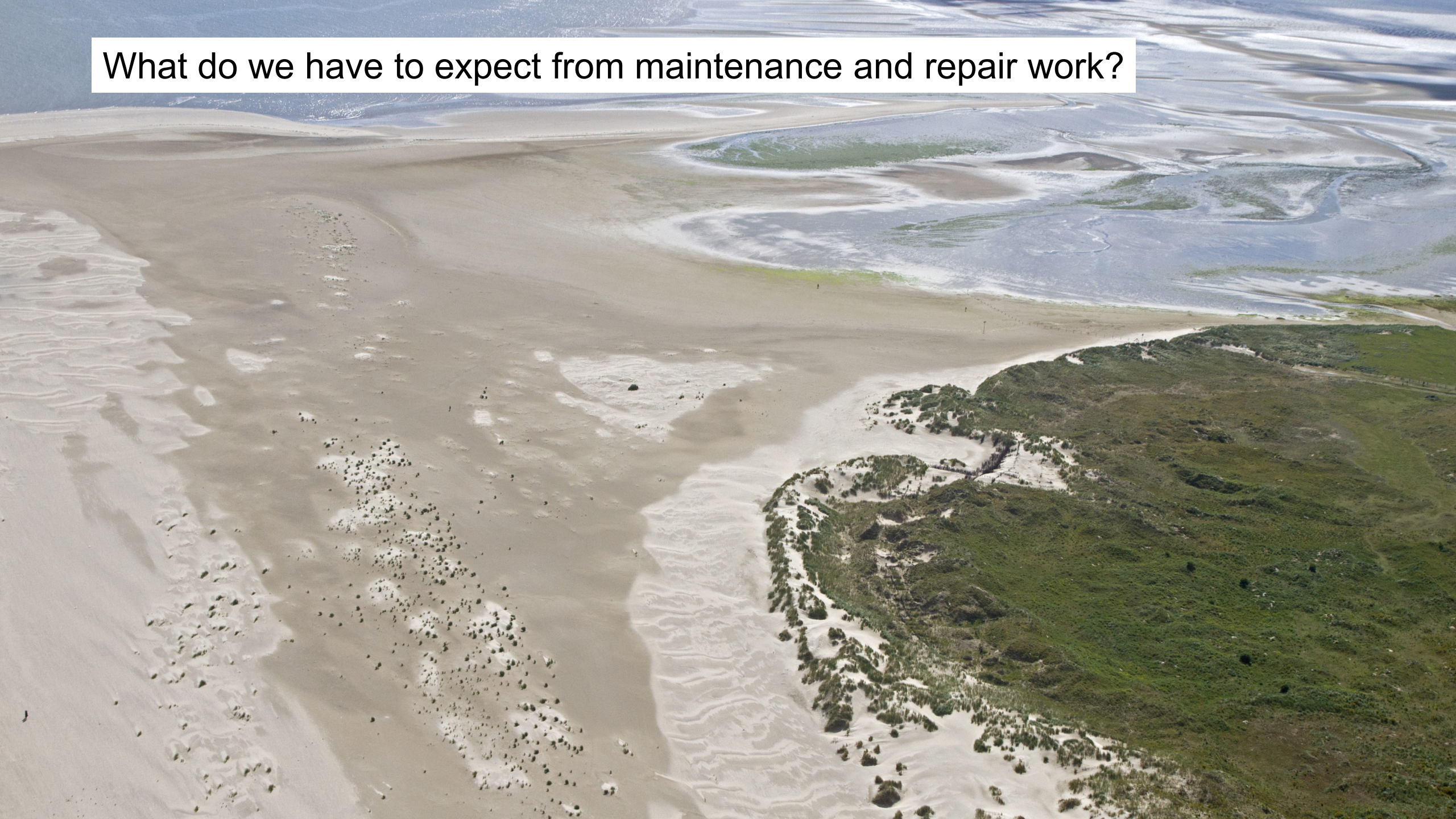
# This could have a significant negative cumulative impact on the national park as a bird sanctuary

- Larger systems require larger interventions
- Cumulative effects of the installation work
- Extension of construction periods?
- Switching to second-best technical solutions under time pressure?
- Effects of three-wire technology underestimated?





What do we have to expect from maintenance and repair work?





# How to mitigate negative effects?

- **Split up the heavy burden of network expansion on (inter-) national level in the Wadden Sea**
- **Strict avoidance of sensitive habitats**
- **Obligatory determination of construction periods**
- **Use of environmental best practice = careful construction technology**
- **Careful planning and nature conservation construction monitoring (coordinated crisis management)**
- **Honest evaluation of the impact and sufficient compensation, including ensuring coherence**