

Interreg

North Sea Region

Jomopans

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JOINT MONITORING PROGRAMME FOR AMBIENT NOISE IN THE NORTH SEA

Underwater Noise Webinar

Niels Kinneging, 17 May 2021



Rijkswaterstaat
Ministerie van Infrastructuur en Waterstaat

Outline

- ▶ Background
- ▶ Jomopans project
- ▶ Final remarks

All Ships on Earth

All vessels reports with matching AIS static data
and not duplicated MMSI reports

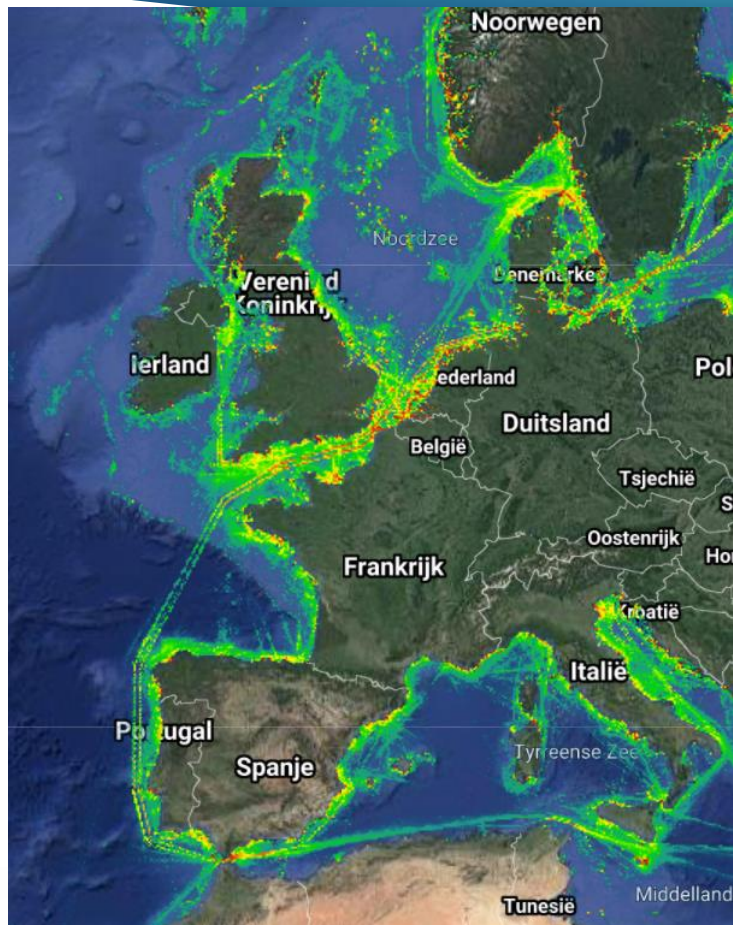


Source: SPIRE Global Data and Analytics
Date: extracted at 18.09.2019 11:29 UTC

This is a plot of all ships reported through the Spire Vessels API with last reported position in the last 24 hours. Note this is using Vessels API so only reports vessels with consistent static information to identify the ship and does not report duplicate MMSI reporting ships.

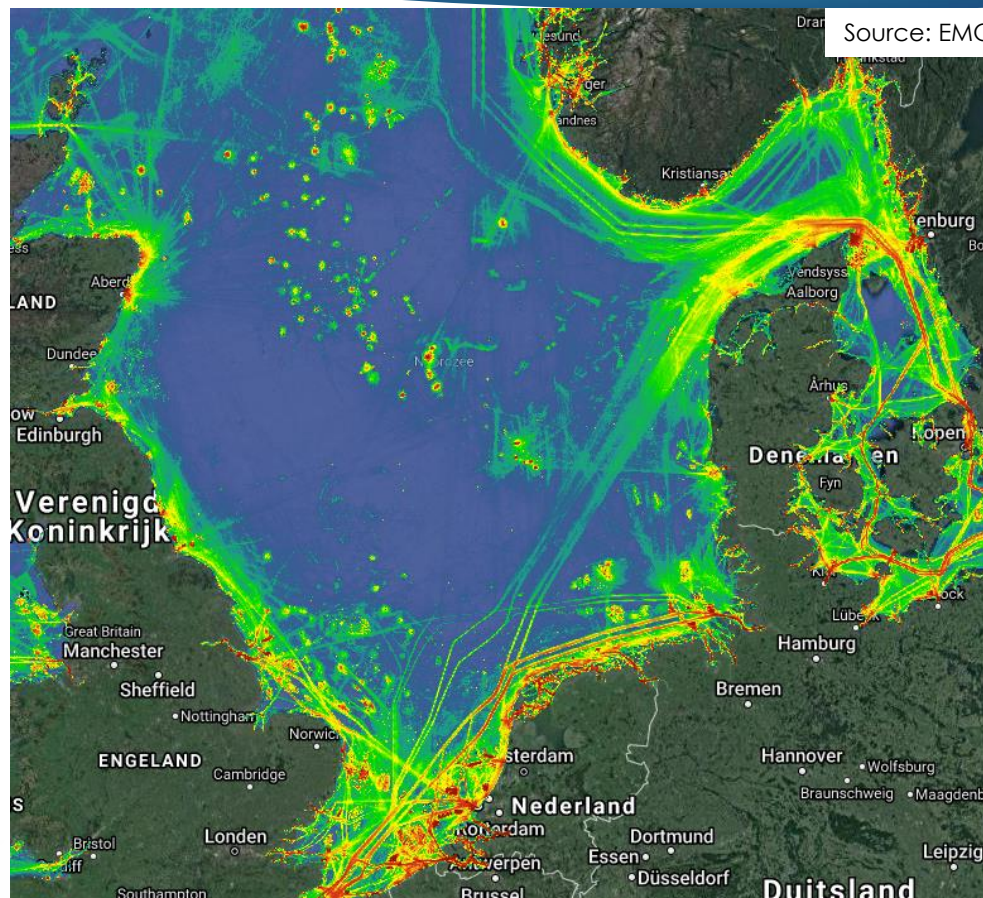
Breakdown of position reports by source. 34% Satellite AIS and 66% from terrestrial AIS. Indicating that 35% of the fleets most recent positions reports from satellite AIS.

Shipping densities



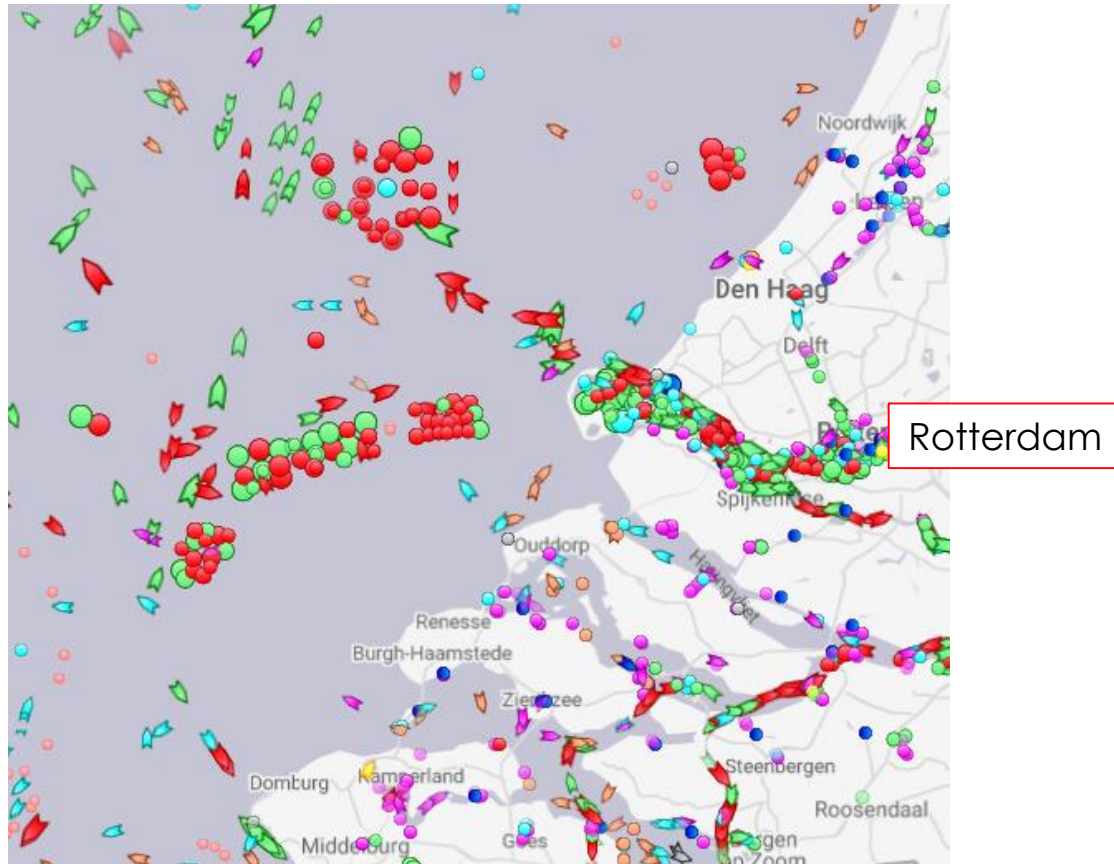
Source: EMODNET Human Activities

Shipping densities



Source: EMODNET Human Activities

Shipping (snapshot)



Marine Strategy Framework Directive (2008)

- ▶ Good Environmental Status (GES) in EU marine waters
- ▶ Ecosystem approach
 - ▶ Environment
 - ▶ Sustainable use
- ▶ Regional co-operation



**OSPAR
COMMISSION**

*Protecting and conserving the
North-East Atlantic and its resources*

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Descriptors

- ▶ Biodiversity
- ▶ Non-indigenous species
- ▶ Commercial fish
- ▶ Marine food webs
- ▶ Eutrophication
- ▶ Sea-floor integrity
- ▶ Hydrographical conditions
- ▶ Contaminants
- ▶ Contaminants in fish
- ▶ Marine litter
- ▶ Energy, including underwater noise

Criteria

- Impulsive noise
- Continuous noise



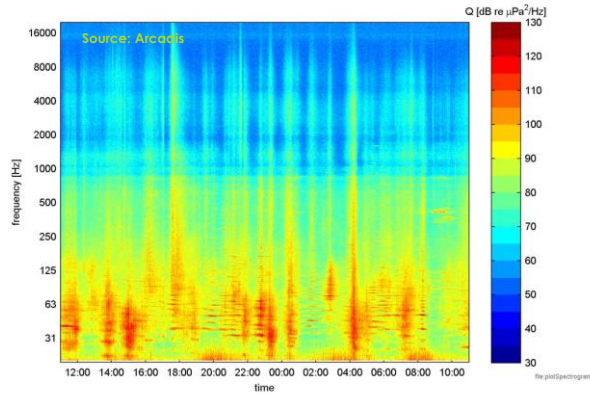
FFI Forsvarets
forskningsinstitutt
Norwegian Defence Research Establishment



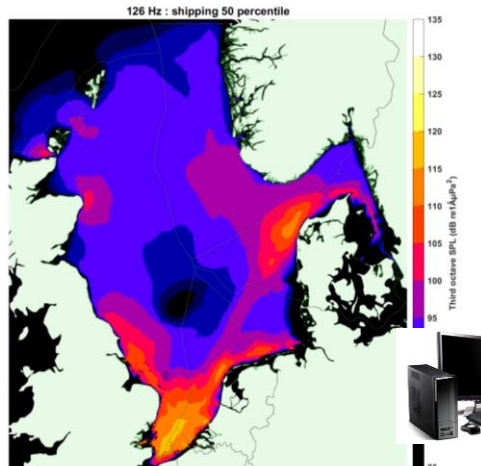
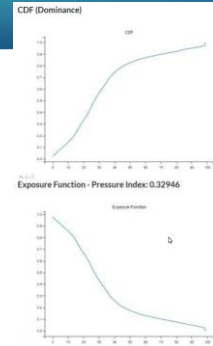
marine scotland



Elements of Jomopans

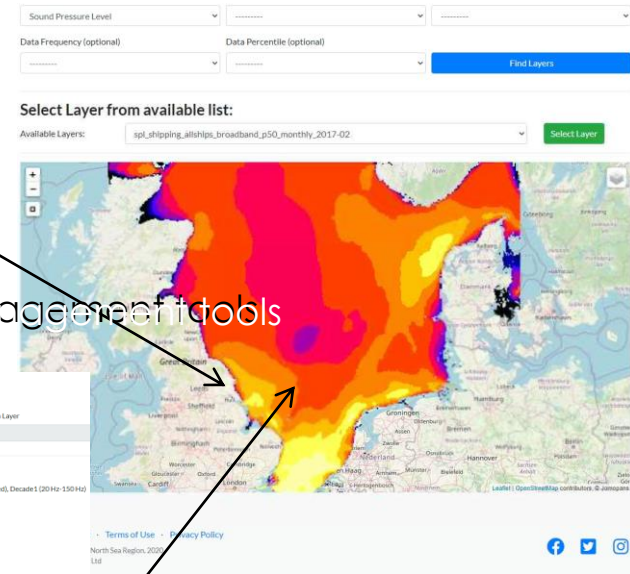


measurements



modelling

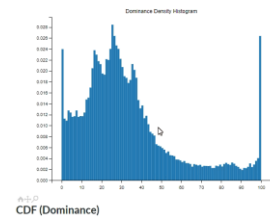
management tools



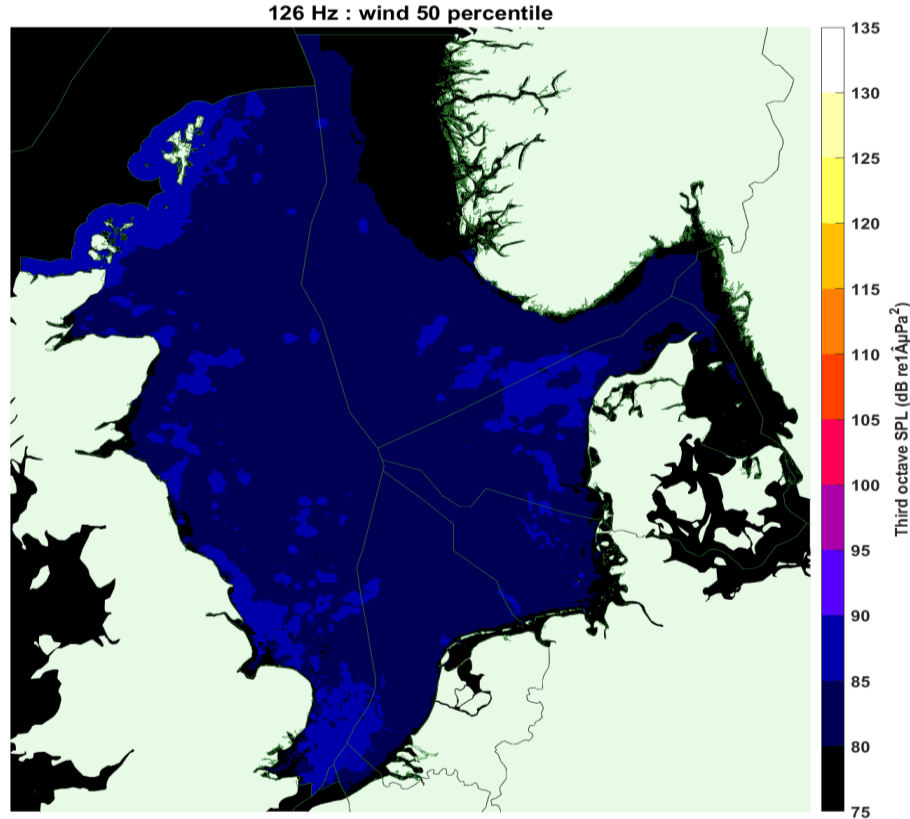
GES Tool Calculator
Select layers above

- Dominance Layer: soundDominance20db_Instantan...
Species Layer: spl_shippingandwind_allships...
Area Layer: Area1
- GES Calculation Results**
- layer_label: Sound Dominance 20db (replaced), InstantaneousWind (replaced), Decade 1 (2014-12014)
 - layer_date: Annual: 2016
 - layer_original_slug: SoundDominance20db_InstantaneousWind_Decade1
 - source_file: Jomopans_Bright_northsearegion_map2015.nc4
 - upload_date: 19 November 2020

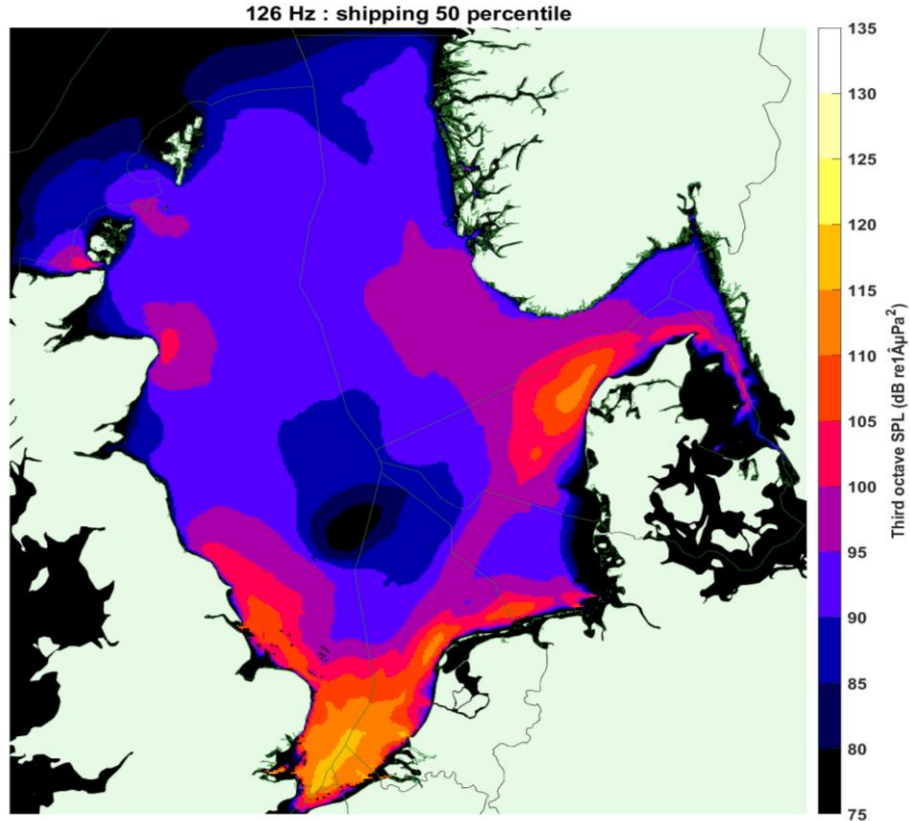
Dominance Histogram



Median level wind sound

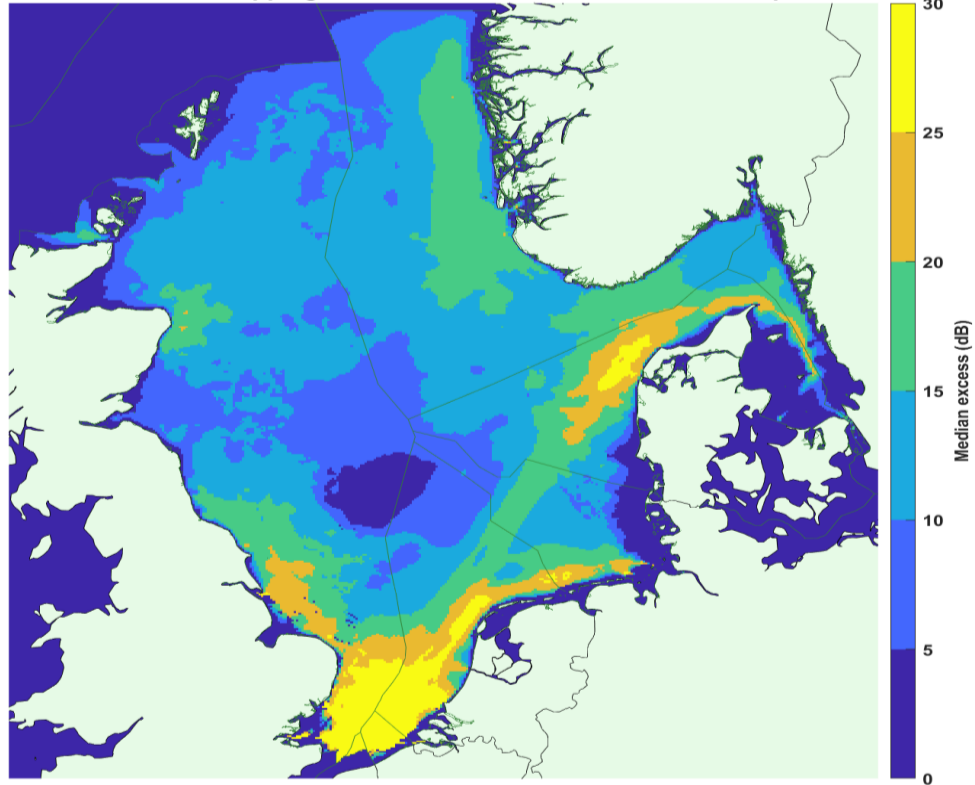


Median level wind+shipping



Excess level

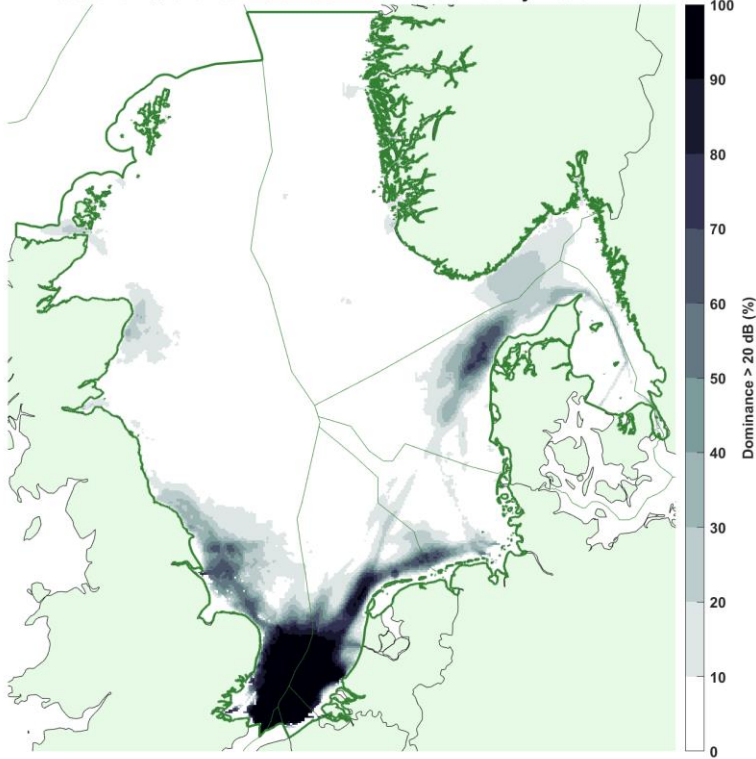
126 Hz : excess of shipping and wind over instantaneous wind 50 percentile



Dominance

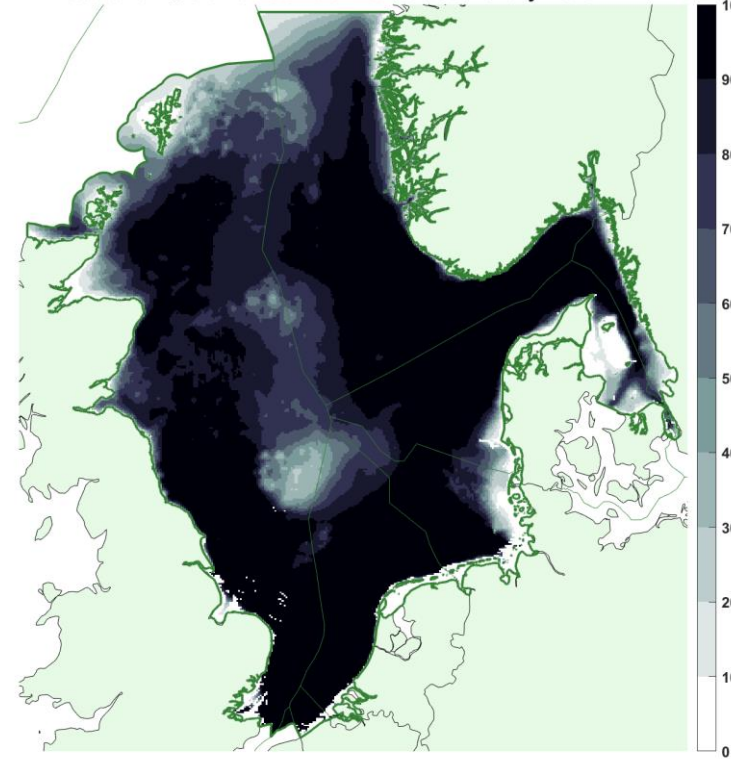
20 dB

Broadband : % of time > 20 dB dominance over monthly median wind



6 dB

Broadband : % of time > 6 dB dominance over monthly median wind



What's next?

- ▶ If the situation remains as is, underwater noise from ships will most likely increase.
- ▶ What options are there?
 - ▶ Quiet ship technology
 - ▶ Protecting sensitive habitats
 - ▶ Operational measures
 - ▶ Joint monitoring
 - ▶ Etc..

Final remarks

- ▶ IMO MEPC information paper
- ▶ Jomopans End Event, 10 June 2021
 - ▶ See Jomopans website
 - ▶ Registration: jomopans@rws.nl