Interreg
North Sea Region
Jomopans
European Regional Development Fund

EUROPEAN UNION

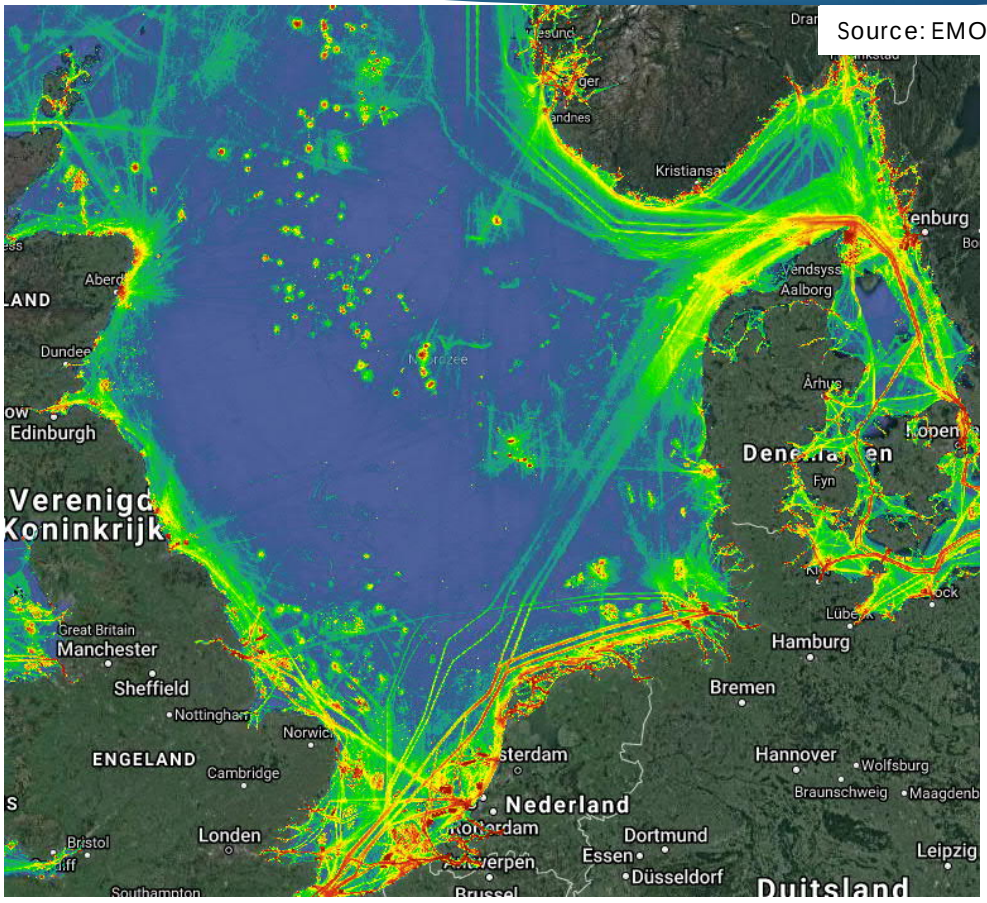
JOMOPANS

JOINT MONITORING PROGRAMME FOR AMBIENT NOISE IN THE NORTH SEA

Project summary

Rijkswaterstaat
Ministerie van Infrastructuur en Waterstaat
AARHUS UNIVERSITY
BSH
BUNDESAMT FÜR SEESCHIFFFAHRT UND HYDROGRAPHIE
Cefas
FFI Forsvarets forskningsinstitutt
Norwegian Defence Research Establishment
FOI
INSTITUTE OF MARINE RESEARCH
Scottish Government
Riaghaltas na h-Alba
gov.scot
marinescotland
NPL
National Physical Laboratory
Institut royal des Sciences naturelles de Belgique
museum
TNO

Shipping densities



Source: EMODNET Human Activities

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10 Years of North Sea Soundscape Monitoring

Looking back on a four-year Interreg NSR project and looking forward to the six-year monitoring cycle

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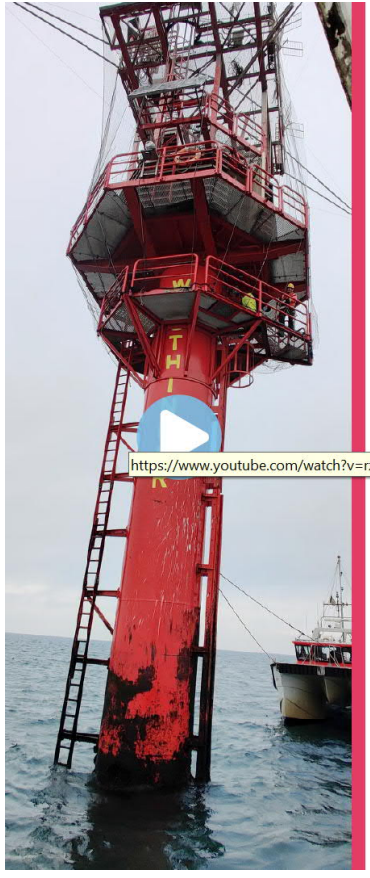
End Report from the
Interreg NSR
JOMOPANS project

June 2021

Contents

3 + 6 + 1 = 10

End report



Validation of the soundscape maps

WP6

The soundscape maps will be used to underpin policy and regulatory decisions, which aim to reduce the impacts of underwater noise pollution on marine life. To ensure confidence in the use of these maps, it is therefore critical that they are properly ground-truthed with in situ field measurements and that the uncertainties in the maps are quantified. JOMOPANS has provided an independent validation of the noise maps produced by the modelling work, using the field data gathered within the measurement work.

The independent validation was conducted on the final soundscape maps, covering the year 2019 and using 15 JOMOPANS field monitoring stations, providing a large temporal and spatial range. Monthly percentiles of the measured and modelled data were compared within third octave frequency bands from 10 - 20,000 Hz, in decidecade frequency bands, and as broadband sound levels.

The general pattern of uncertainty showed that the model predicted sound pressure levels were lower than the measurements at low frequencies (< 1 kHz), while the model more closely agreed with the measurements at higher frequencies (> 1 kHz). The validation results highlight the difficulty of accurately predicting low-frenquency ambient noise levels, due to multiple uncertainties.

These uncertainties include the quality of AIS coverage, and the accuracy of low-frequency propagation loss estimation in shallow water, which is strongly influenced by the quality of sediment property data. Noise sources that were not included in the model also add to the uncertainty in the noise maps at low frequencies (< 1 kHz), such as:

- Vessels without active AIS transponders (mainly smaller vessels such as fishing and recreational vessels)
- Seismic surveys
- Wind farm operational noise, construction noise and service vessels
- Generator/ platform noise

The validation process highlighted limitations in both the field measurements and the acoustic modelling, both of which could be improved upon. At some sites, tidal flow noise contaminated the recordings at low frequencies, rendering parts of the recordings unusable. The limitations in modelling included shortcomings in the input data, particularly suspected gaps in the AIS ship tracking coverage and the availability of suitable sediment data, but also the inclusion of other sources of noise, such as small vessels. Overall, the analysis did not identify consistent uncertainties in noise maps; rather, uncertainties may be caused by a complex combination of factors.

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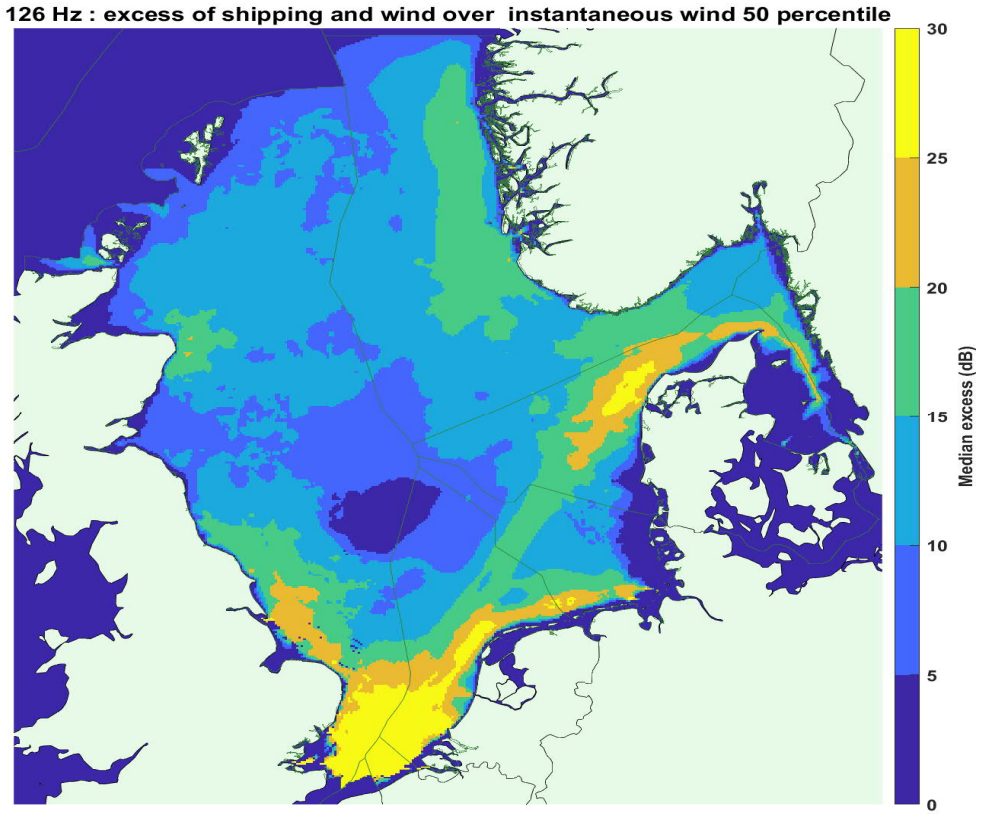
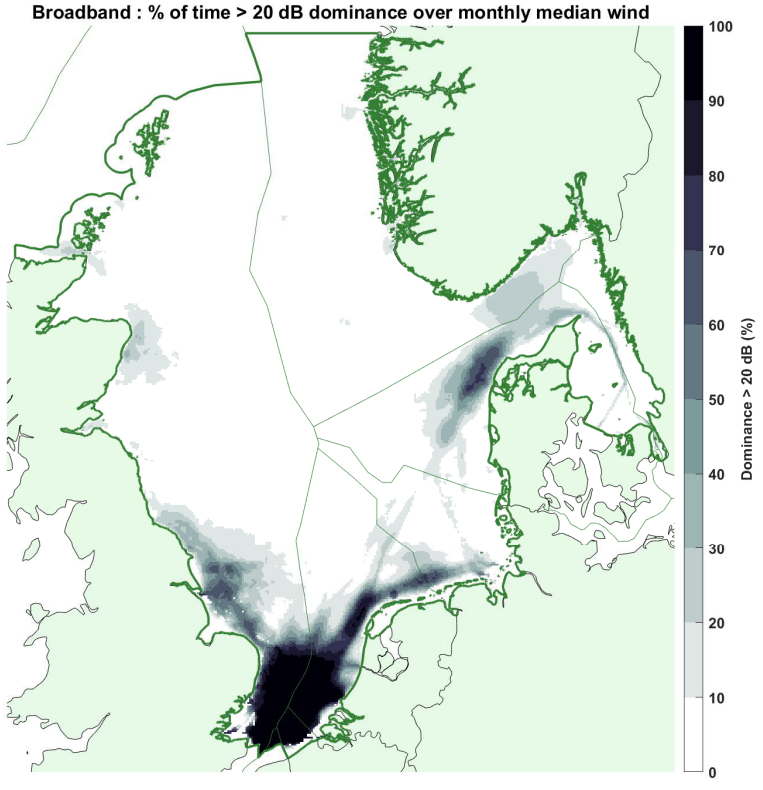
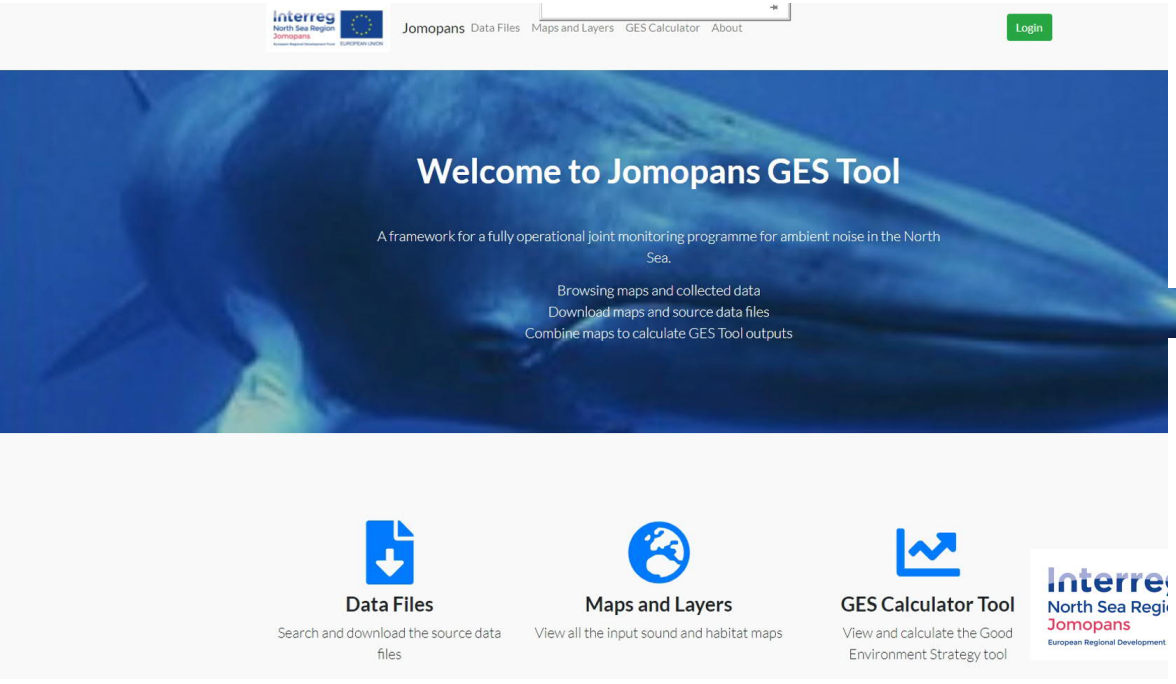
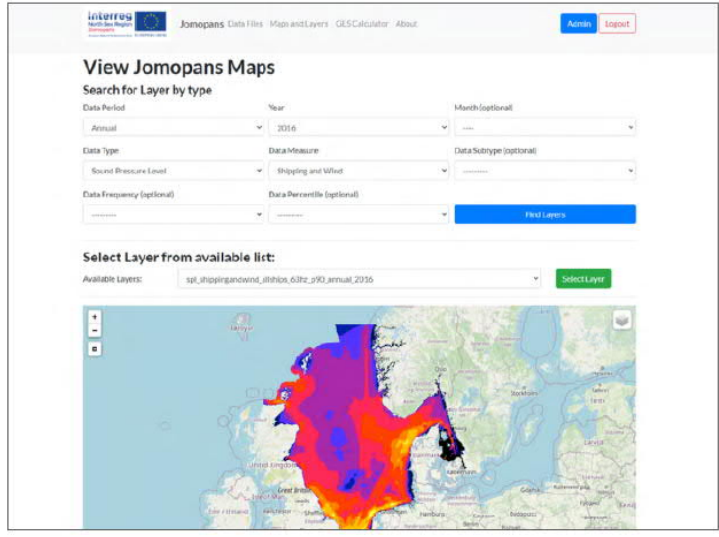
Result in two slides

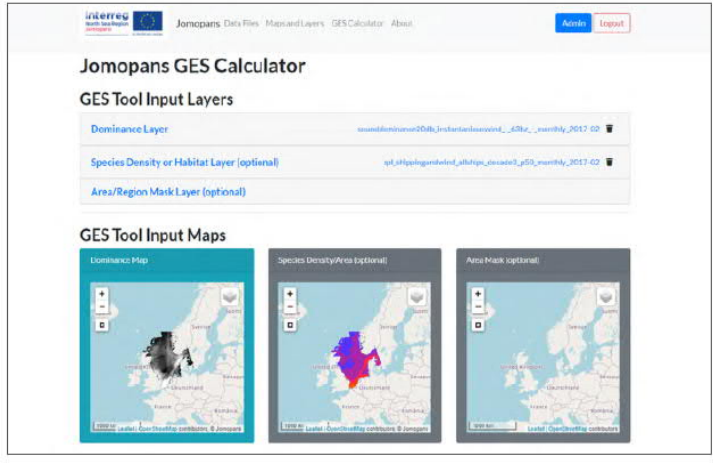


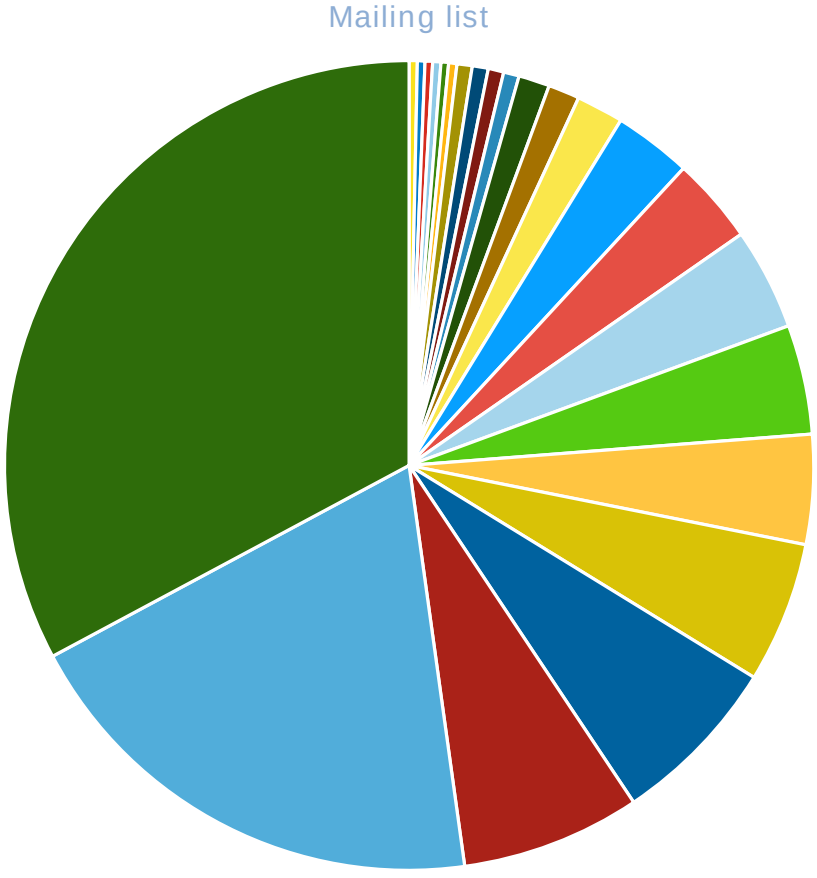


Results in two slides









23 countries
328 names

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Connecting


Stichting
De Noordzee


ISO


EURAMET
BIAS
Baltic Sea Information on the Acoustic Soundscape


PORT of
vancouver


Swedish Agency
for Marine and
Water Management


federal public service
HEALTH, FOOD CHAIN SAFETY
AND ENVIRONMENT


Ministry of Environment
and Food of Denmark
Agency for Water and
Nature Management


quietMED


IQOE
International Quiet Ocean Experiment


Scottish Government
Riaghaltas na h-Alba
gov.scot


jonas
Joint Framework for Ocean
Noise in the Atlantic Seas


Department
for Environment
Food & Rural Affairs


PORT OF
GOTHENBURG
The Port of Scandinavia


Port of
Rotterdam


NORWEGIAN
ENVIRONMENT
AGENCY


OSPAR
COMMISSION
Protecting and conserving the
North-East Atlantic and its resources


Saturn
Developing Solutions for
Underwater Radiated Noise


ifaw
International
Fund for
Animal Welfare


Quiet
oceans


WWF


JASCO
APPLIED SCIENCES


PLATFORM SCHONE
SCHEEPVAART


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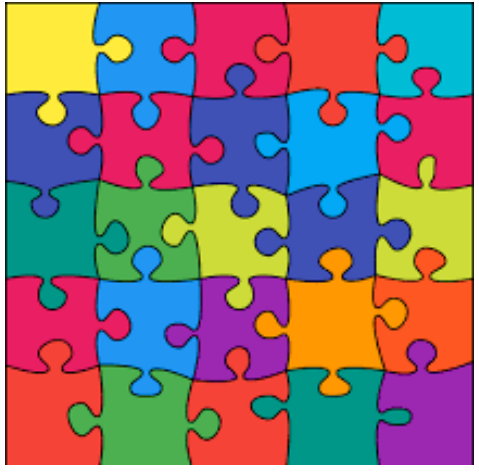
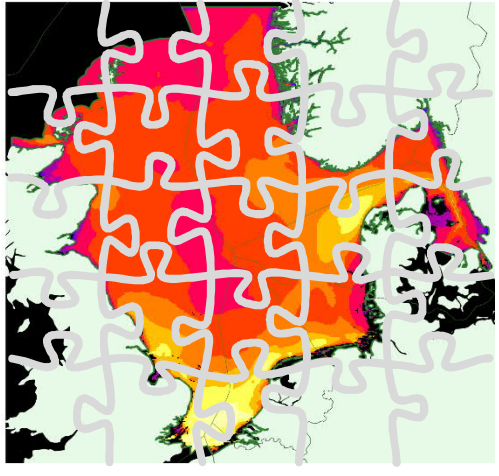
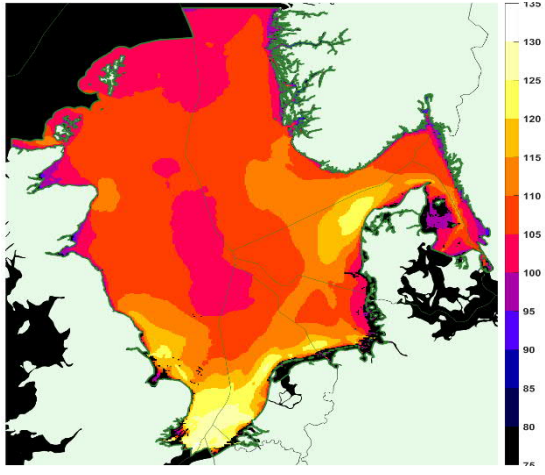
One map







Policy Advisory Board

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Policy Advisory Board

- Policy advisors from all participating countries
- Representatives from OSPAR and Interreg NSR

- Give guidance on the project direction
- Ambassadors for Jomopans in national governments
- Support implementation

- Meetings
  - June 2018
  - October 2019
  - June 2020
  - November 2020
  - 2021 to be planned

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Policy Brief & Implementation plan

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