

Monitoring of continuous noise: from projects to monitoring programmes including data arrangements

Joint Session EN-Noise and ICG-Noise, Göteborg 5th October



Revised proposal for a regional monitoring sub-program on continuous noise

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Current monitoring



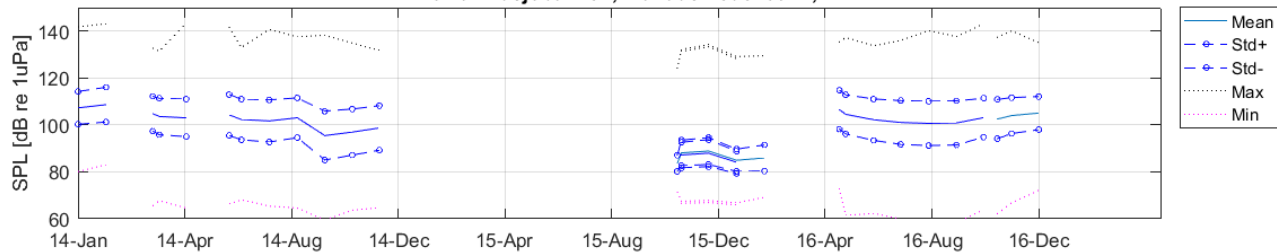
Status of the acoustic measurements in HELCOM countries during the years 2014 – 2017, where “-” signifies no measurements and “✓” means that hydrophones have been deployed at one or more of the nationally prioritized locations.

Year	Denmark	Germany	Poland	Estonia	Finland	Sweden	Lithuania	Latvia	Russia
2014	✓	✓	✓	✓	✓	✓	-	-	-
2015	-	-	✓	✓	✓	✓	-	-	-
2016	✓	✓	✓	✓	✓	✓	-	-	-
2017	✓	✓	✓	✓	✓	✓	-	-	-

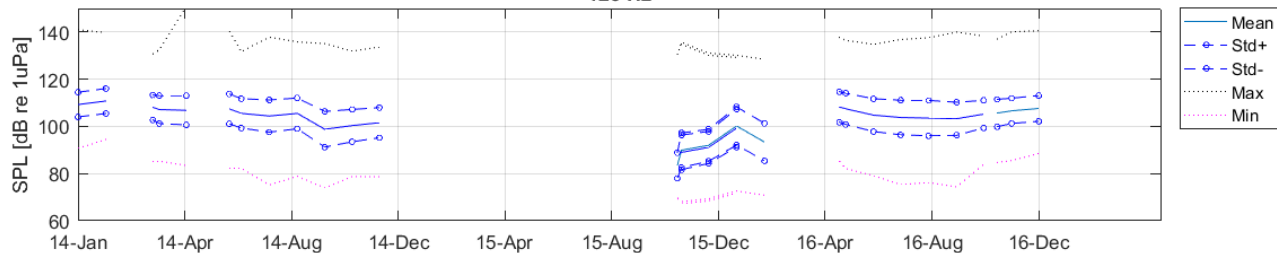
A regional coordination is necessary for an cost effective and quality controlled monitoring program – the legacy of BIAS can be operational again

Sound level in the Baltic propper

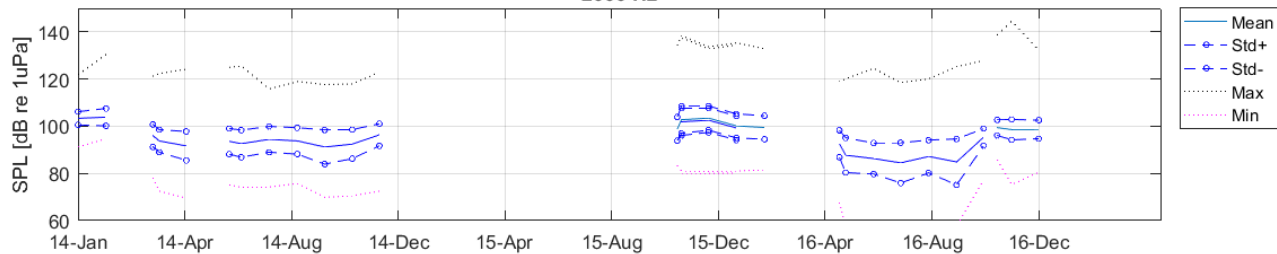
Norra Midsjöbanken, månadsmedel 63Hz,



125 Hz



2000 Hz

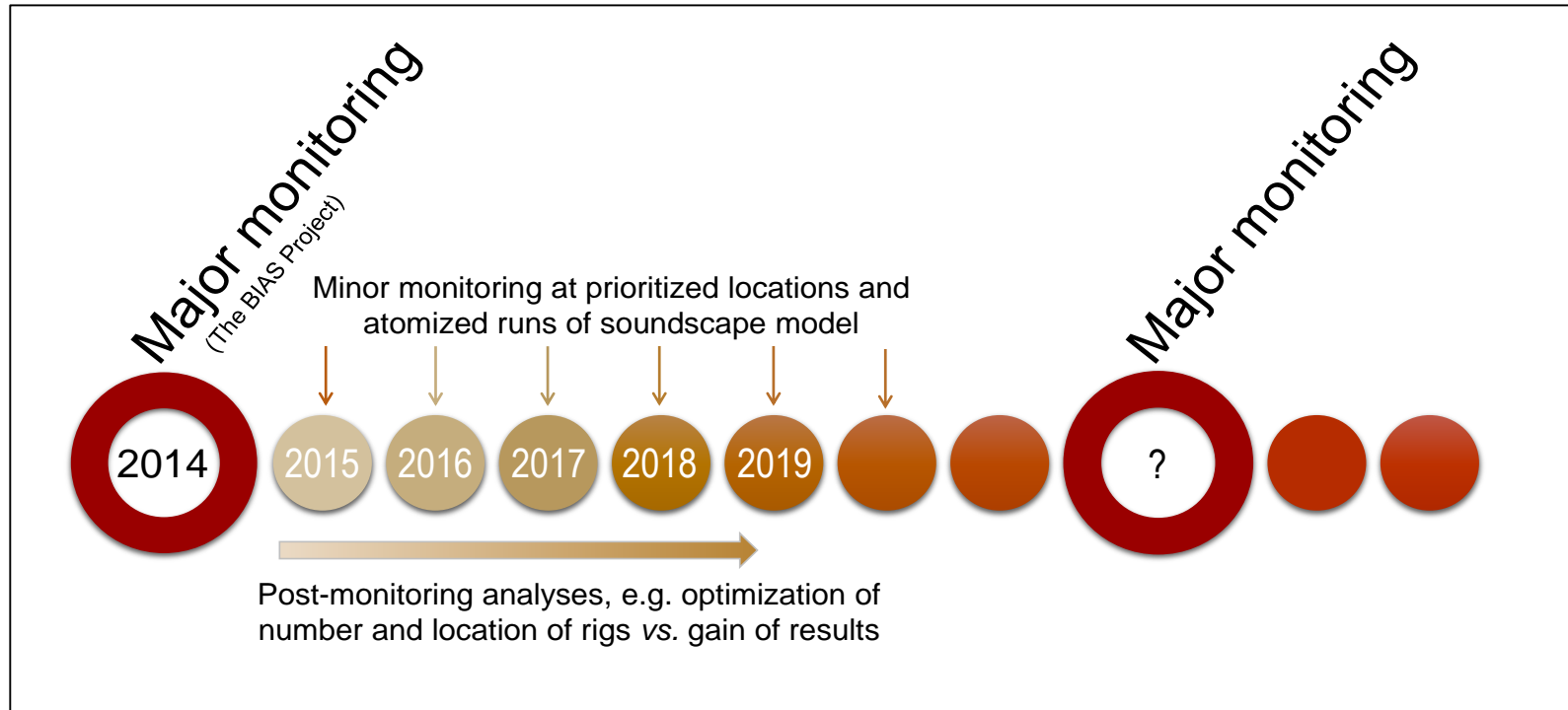


Background



- A **implementation plan** was developed during the BIAS project addressing a coordinated regional monitoring sub-programme on continuous noise in the Baltic Sea.
- STATE & CONSERVATION 4-2016 *took note* of the regional monitoring plan – but then nothing happened!
- An updated version will be **resubmitted** to STATE & CONSERVATION 7-2017 for a *discussion* and hopefully an *agreement* on the outline and decide on a caretaker or organization for the Data sharing platform and Soundscape planning tool developed in BIAS.

Baltic Sea monitoring continuous noise



Nikolopoulos, A., et al. *BIAS Implementation Plan - Monitoring and assessment guidance for continuous low frequency sound in the Baltic Sea*. s.l. : BIAS LIFE11 ENV/SE/841., 2016.

<https://biasproject.files.wordpress.com/2013/11/bias-implementation-plan.pdf>



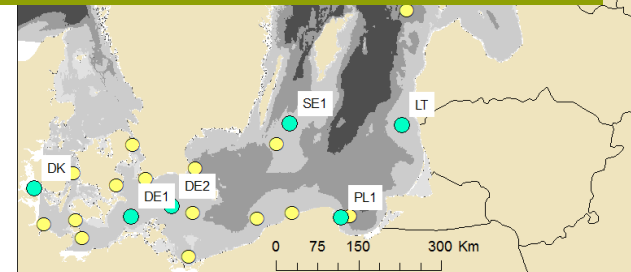
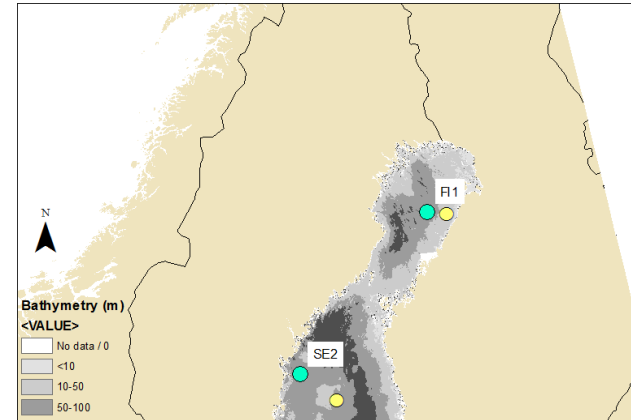
Regional Monitoring program

Minor Monitoring - annual

1. Acoustic measurements at the **prioritized measurement location** covering all Baltic Sea sub-basins applying the regional methodology standard and quality control
2. Data are **processed** (using regional standard on data

DRAFT Guidelines for monitoring continuous noise submitted to STATE & CONSERVATION 7-2017
The aim of these guidelines is to provide a standardized procedure to ensure that the output data from the monitoring is compatible for the HELCOM pre-core indicator 'Continuous low frequency anthropogenic sound'

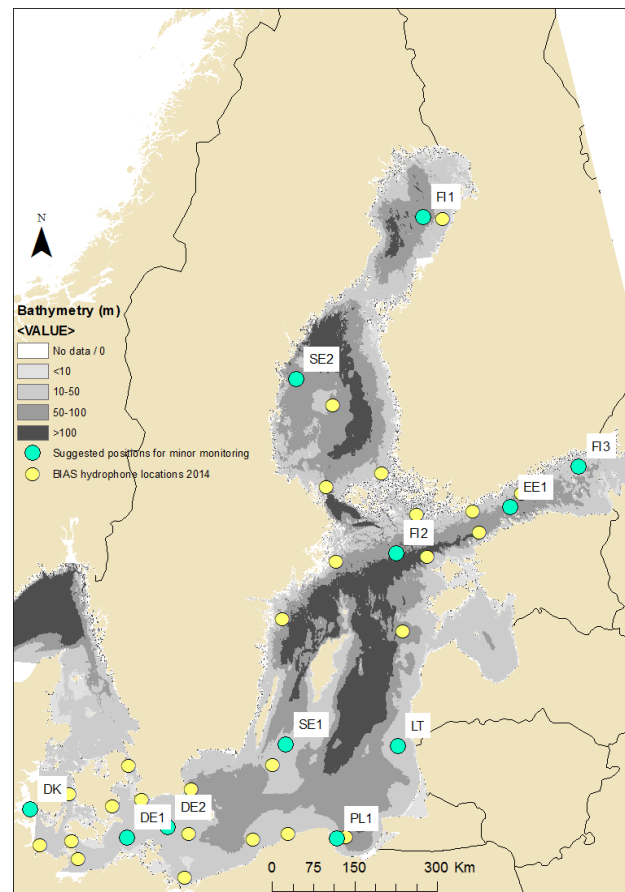
3. A **soundscape model** are used with updated information on ship traffic and environmental conditions to produce new monthly soundscape maps.
4. Post-monitoring - estimate the **compatibility** of the soundscape model results with the current year's measured results



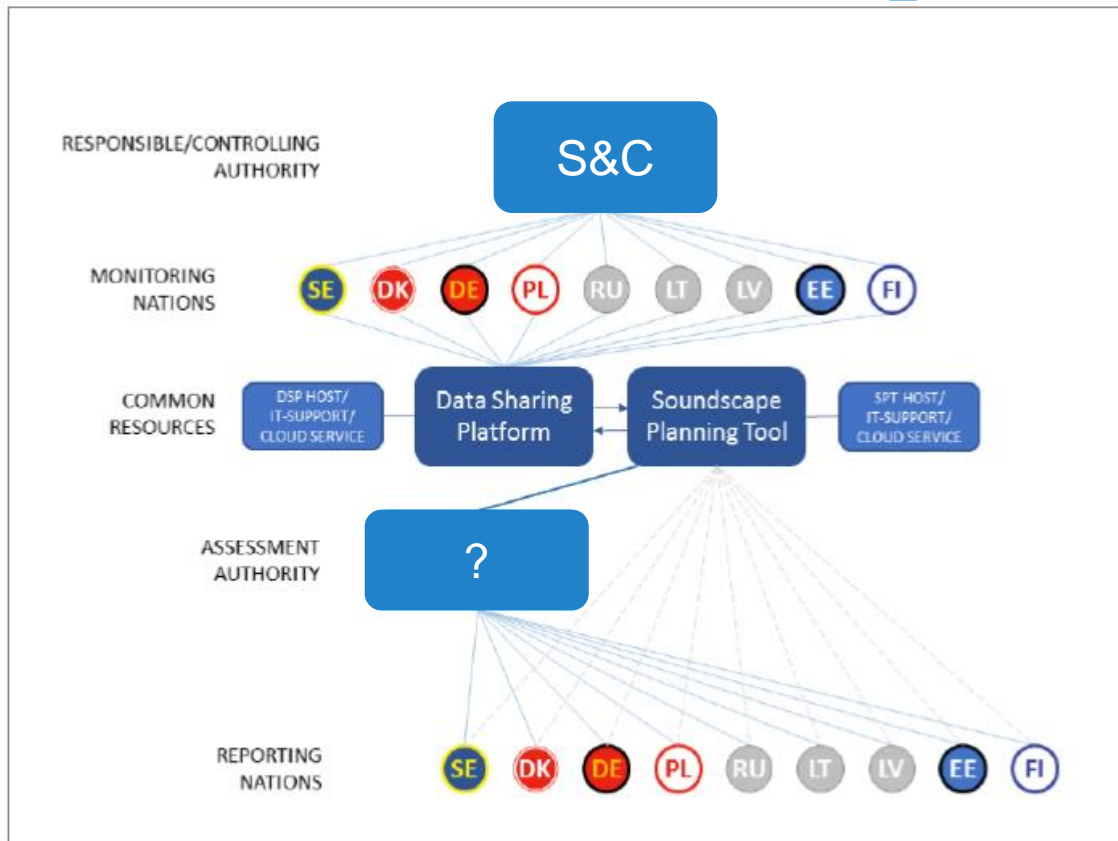
Regional Monitoring program

Major Monitoring

1. A large monitoring effort with extensive field measurement programme are done **with several years interval** replacing the minor monitoring that specific year
2. Determined by the need for extended monitoring efforts based on the **difference between yearly observed and modelled results**, or by the need for specific actions or results dictated by HELCOM processes.
3. To collect the **necessary amount of data in order to carefully calibrate the soundscape model** towards the full range of acoustic characteristics in all the sub-basins of the Baltic Sea.
4. Post-monitoring - **optimization of number and locations** of sensors vs. gain of results



Overview of data arrangements



Agreements on responsible caretaker of the data sharing platform and the soundscape planning tool including admin and quality control is needs

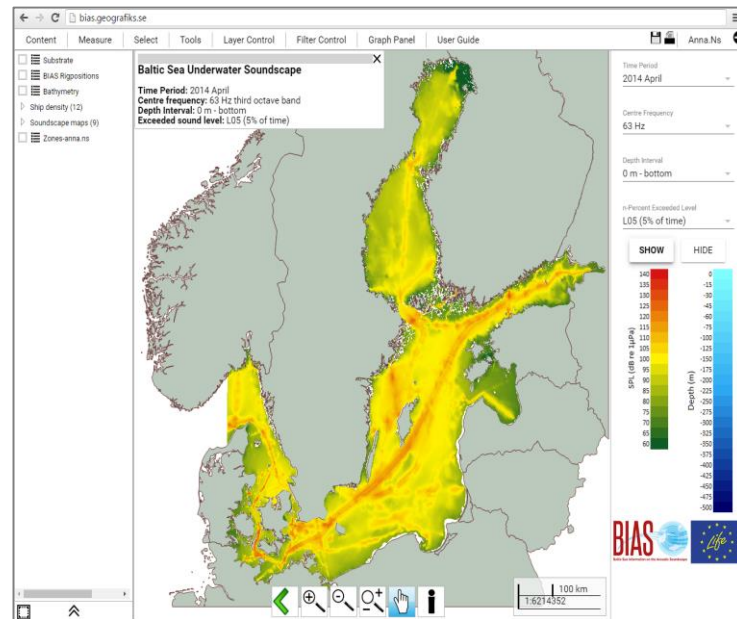
Soundscape planning tool

The processed data and soundscape maps are explored visually in the **soundscape planning tool**, allowing the user to study any specific location in the Baltic Sea and compare results of:

- I. Various frequencies (63, 125 and 2000 Hz)
- II. Three different depth intervals
- III. Different time periods (month, years)
- IV. Seven exceedance levels

New measured data and maps can be uploaded!

Polygons over areas of special interest can be imported and the soundscape in that particular area can be explored.



<https://biasproject.wordpress.com/tasks/tools/>