A Regional Management of Underwater Sound in the Baltic Sea
First results


ESOMM 2014, Amsterdam
Underwater noise
Marine Strategy Framework Directive (MSFD)

- Adopted in 2008
- Protection of the marine environment in EU marine waters
- Set of criteria and indicators to achieve a ‘Good Environmental Status (GES)’
- 11 qualitative descriptors to define a GES
Descriptor 11

„Introduction of energy (including underwater noise) does not adversely affect the marine ecosystem“

Two indicators

- 11.1 Distribution in time and place of loud, low and mid frequency impulsive sounds
- 11.2 Continuous low frequency sound

TSG-Noise recommendations (Van der Graaf et al. 2012)

- Establish current level and trend of impulsive sounds and ambient noise
- Set up a register of occurrence of impulsive sounds.
BIAS

• EU-Life project
• ‘Baltic Sea Information on the Acoustic Soundscape’
• Goals
  ➢ Implementation of MSFD descriptor 11 in the Baltic Sea region
  ➢ Establishing a baseline for continuous sound
  ➢ Establishing of a joint management, for e.g. handling of data and registry
  ➢ Establishing a common definition of GES
  ➢ Developing tools for handling of descriptor 11.
Beneficiaries

- Swedish Defence Research Agency (FOI)
- Finnish Environment Institute (SYKE)
- Tallinn University of Technology (TUT)
- Foundation of the Development of University of Gdansk (FRUG)
- Institute for Technical and Applied Physics (ITAP)
- German Maritime and Hydrographic Agency (BSH)
- University of Southern Denmark (SDU)
- Aarhus University (A)
BIAS workflow

- Preparation
- Measurements
- Modelling
- Design of planning tools
- Implementation

ESOMM meeting

September 2012 to August 2016
Preparation

- Meetings and working groups
- Development of rig designs
- Calibrating noise loggers
- Decision on deployment positions
- Sea safety course
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- Standards for noise measurements
Measurements and data collection

- Continuous sound
- 39 positions
- 1 year field survey (2014)
- Following BIAS standards
  - Hardware specifications
  - Handling sensors
  - Rig design
  - Deployment
  - Handling data
- Collection of
  - Environmental data
  - AIS / VMS data
Measurements and data collection
Modelling the sound scape
Modelling the sound scape

Bathymetry and sub-regions

AIS data analysis
GIS based planning tool

For the management of underwater noise in the Baltic Sea

Report noise...

B12: Planning tool functions

View soundscape maps
View environmental parameters
Calculate sound fields from human...activities to Registry
Monitor field data
Etc...

For the management of underwater noise in the Baltic Sea

Baltic Sea Information on the Acoustic Soundscape
Life
GIS based planning tool

For the management of underwater noise in the Baltic Sea

Identify target group + Determine NA Survey format
Data Format + First Draft of Tool
Requirements Assessment + Design of tool
Test Version at SwAM (Jan 2016)
Final version Planning Tool (May 2016)


NA: National authorities responsible for MSDF D11
SwAM: Swedish Agency for Marine and Water Management
To Do List

• Continuation of data acquisition & analysis
• Standards for signal processing
• Finalising Baltic Sea noise map
• Design & implementation of the planning tool
• Decision chain for management of underwater sound
• Development of a data sharing platform
• Artistic sound installation
BIAS is a LIFE+ project with the ultimate goal to secure that the introduction of underwater noise is at levels that do not adversely affect the marine environment of the Baltic Sea. BIAS will work towards this goal by bridging the gap between the indicators of Marine Strategy Framework Directive (MSFD) descriptor 11 and actual management of human-induced underwater noise.

Hi there and welcome to our website. We hope that you like what you see and that you will find a lot of interesting information when you’re clicking around. If you have any suggestions or comments please leave a message. We appreciate your opinion.

Cheers! / BIAS Team

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