



Outcome of the 1st Meeting of the HELCOM Expert Network on Underwater Noise, (EN-Noise 1-2017) Gothenburg, Sweden, 4 October 2017

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Introduction

0.1 In accordance with the GEAR 16-2017 (Paragraph 6.2) the EN-Noise 1-2017 Meeting was held on 4 October 2017 in Gothenburg, Sweden, at the premises of the Swedish Agency for Marine and Water Management.

0.2 The Meeting of the EN-Noise was attended by delegations from Denmark, Estonia, EU, Finland, Germany, Poland and Sweden. The List of Participants is attached as **Annex 1**.

0.3 The Meeting of the EN-Noise was chaired by Mr. Jakob Tougaard, Denmark as elected by the Meeting. Ms. Marta Ruiz, Associate Professional Secretary acted as secretary of the Meeting.

Agenda Item 1 Adoption of the Agenda

1.1 The Meeting adopted the Agenda of the Meeting as contained in document 1-1.

Agenda Item 2 Underwater noise as part of the Ministerial Meeting 2018

2.1 The Meeting recalled that HELCOM 37-2016 adopted the 'Regional Baltic Underwater Noise Roadmap 2015-2017' as included in Annex 3 to the [Outcome of HELCOM 37-2016](#). The Roadmap is based on five steps aiming to prepare a knowledge base towards a regional action plan on underwater noise in 2017/2018 to meet the objectives of the 2013 Ministerial Meeting, and of the EU MSFD for HELCOM countries being EU Member States.

2.2 The Meeting noted progress in the implementation of the regional underwater noise roadmap (document 2-1).

2.3 The Meeting provided their views on future steps and associated timetable to continue HELCOM work on underwater noise and agreed on the following priorities for work of the HELCOM EN-Noise:

- Step 1: to continue working on knowledge gathering. The report compiling the internationally available reviews on underwater noise mitigation measures is to be revised in two years' time, acknowledging the evolution on techniques (explosions, pile driving, seismic events) and knowledge. Also to compile knowledge on impacts and severity of impacts, since it is evolving very rapidly.
- Step 2:
 - Further development of the register of impulsive events is needed:
 - i. Currently the registry only compiles information required as part of the MSFD, so HELCOM countries may agree on reporting additional detailed information (position of the sources, number of pulses, and so on). The Meeting proposed to consider this in order to increase the accuracy and usefulness of the registry;
 - ii. There is a need to clarify minimum levels for activities, below which reporting to the registry is not required, and to clarify how mitigation measures, such as bubble curtains, are dealt with. The Meeting noted the information provided by Germany that there is a German proposal on how to address this issue to be considered in the upcoming meeting of the TG Noise in November.
 - Discuss possibilities for, and potential added values of developing a common monitoring programme involving measurements of impulsive noise.

- Further development of the continuous sound indicators:
 - Discussion of how to include higher frequency bands (tentative proposals 2 and 5 kHz third octave bands);
 - Further work on the assessment protocol of the pre-core indicator;
 - Address the issue of statistical power in the monitoring data, i.e. determining how the ability to detect statistically significant trends in the indicators depends on the number of years of monitoring data available.
- Step 3: the top priority in the next couple of years is establishing threshold values for the indicators. The need to establish threshold values is closely linked to the need for operationalisation of the pre-core indicators, also in line with the MSFD requirements for those HELCOM countries being EU members.

2.4 The Meeting noted the 2018 HELCOM Ministerial Meeting will be held 6 March in Brussels, Belgium. To support the planning of the Ministerial Meeting a background report is being prepared that summarizes the status of the Baltic Sea and the accomplishment of actions agreed in HELCOM across different themes.

2.5 The Meeting noted the information provided by EU during HOD 52A-2017 that EU will provide text on noise, but also welcomed the updates of the expert networks [marine litter and noise HELCOM networks] and that HOD agreed to engage the EN-Noise in their upcoming meetings to prepare background material and proposals for possible next steps regarding underwater noise ([Outcome of HOD 52A-2017](#), para. 2.25-2.26).

2.6 The Meeting noted the input to evaluation of accomplishment of HELCOM actions related to underwater sound as contained in **document 2-2**.

2.7 The Meeting reviewed the text from point of view of correctness and agreed on the revised document as contained in **document 2-2 Rev.1**.

Agenda Item 3 Update of the underwater noise section within the ‘State of the Baltic Sea’ report

3.1 The Meeting recalled that HOD 52-2017 ([Outcome of HOD 52-2017](#), para. 2.39) approved the First version of the ‘State of the Baltic Sea report, June 2017’ and agreed on its publication on the HELCOM website, with the understanding that a final consolidated report will be prepared by June 2018. The report contains a [section on underwater noise](#) which is also to be revised based on the feedback provided by Contracting Parties at HODs 52-2017 (Annex 4 of Outcome of HOD 52-2017) and subsequently (e-mail communication).

3.2 The Meeting noted **document 3-1** which compiles comments as provided by Estonia, Germany and Poland to the current version of the section on underwater noise within the ‘State of the Baltic Sea report, June 2017’ to be addressed in the revised version.

3.3 The Meeting discussed further steps to revise the current section on underwater noise in the ‘State of the Baltic Sea report, June 2017’ aiming at submitting the revised document to the upcoming HOLAS II Core team meeting, to be held on 28-29 November 2017 for consideration.

3.4 The Meeting agreed on further steps to revise the document as follows:

- Figure 4.4.1. Soundscape maps in the Baltic Sea: it will be substituted by six maps representing 63Hz, 125Hz and 2kHz at 5% and 50% percentile levels. Information on data source will be provided, as well as water depth interval. Measurement units (dB re 1µPa) will also be amended as needed and identical scales used. Sweden will conduct this task;
- The Secretariat will elaborate a table on impulsive events as reported to the regional registry, subdivided by country;

- Figure 4.4.2. Auditory range of some marine species present in the Baltic Sea and sound frequencies generated by human activities: countries are invited to provide comments to improve the Figure by **11 October 2017**, when Sweden will amend it accordingly;
- Figure 4.4.3. The caption to be amended to read as: “Example of how spatial information of the noise distribution in the Baltic Sea can be overlaid with noise sensitive areas derived from biological data on noise sensitive species so far identified”. The figure will also be amended to use the dB re 1µPa, also water depth interval are to be indicated, as well as temporal distribution in percentiles of continuous underwater sound. Details on the data source will also be provided. Sweden will conduct this task.

3.5 The Meeting noted that the Estonian comment in reference to BIAS data is now address as part of the changes to be implemented in Figure 4.4.1.

Agenda Item 4 Underwater noise indicators: from pre-core to core indicators

4.1 The Meeting recalled that work on the continuous sound pre-core indicator has been led by Poland, with Denmark, Finland, Germany and Sweden as co-lead countries. The indicator concept has been defined, although further discussions are to continue in the frame of the HELCOM EN-Noise to address German recommendations to monitor higher frequencies. The assessment protocol has been described; further work is envisaged to ensure that it only considers those areas where specific sound sensitive species occur ([current version](#) of the indicator report).

4.2 The Meeting discussed further steps to finalize and operationalize this indicator.

4.3 The Meeting agreed on the need for a workshop on noise indicators in early 2018. Countries are invited to inform on their willingness to host the workshop and invite relevant participants by **4 November** to the Secretariat (marta.ruiz@helcom.fi).

4.4 The Meeting noted the presentation of a Swedish proposal for a monitoring programme for continuous noise (**Presentation 1**) which is to be submitted by Sweden to the upcoming State and Conservation meeting.

4.5 The Meeting noted that the sound scape planning tool is currently available as read only, pending on decision on how to further proceed with the update of new data stored nationally, and that the soundscape planning tool is available for free use, requiring prior registration.

4.6 The Meeting updated the information on the document in relation to the national monitoring programme: Denmark, Estonia, Finland, Poland and Sweden have data for 2017.

4.7 The Meeting welcomed the Swedish monitoring programme proposal and proposed not to restrict the programme to the use of only two bands (63 and 125Hz).

4.8 The Meeting recognized the value of coordination of design on monitoring programme.

4.9 The Meeting also recognized the value of a shared infrastructure for data storage and visualisation.

4.10 The Meeting recalled that work on the impulsive sounds pre-core indicator has been led by Germany, with Denmark, Finland and Sweden as co-lead countries. The indicator concept is defined as sound events which effective time duration of individual sound pulses is less than ten seconds (i.e. impulsive). Good status has not been defined, however could be further developed by considering the frequency and distribution of the impulsive noise events that will not have an adverse impact on elements of the marine environment that are to reach good status (occurrence and seasonal sensitivity level of target species along with an ecosystem approach of impacts) ([current version](#) of the indicator report).

4.11 The Meeting discussed the role of the HELCOM EN-Noise in relation to TG Noise and OSPAR ICG-Noise.

4.12 The Meeting agreed on the relevance of the EN-Noise contribution to the TG Noise.

Agenda Item 5 Future work and any other business

5.1 The Meeting thanked Sweden for hosting the Meeting.

Agenda Item 6 Outcome of the Meeting

6.1 The Meeting adopted the draft Outcome of the Meeting. The final Outcome, together with documents and presentations considered by the Meeting will be made available on the [Meeting Site](#).

Annex 1 List of participants

Representing	Name	Organisation	Email address
Chair EN-Noise			
Denmark	Mr. Jakob Tougaard	DCE/Aarhus University	jat@bios.au.dk
Contracting Parties			
Estonia	Ms. Katarina Oganjan	Estonian Ministry of the Environment	katarina.oganjan@envir.ee
Estonia	Mr. Janek Laanearu	Tallinn University of Technology	janek.laanearu@ttu.ee
Estonia	Mr. Aleksander Klauson	Tallinn University of Technology	aleksander.klauson@ttu.ee
Finland	Ms. Eeva Sairanen	Finnish Environment Institute (SYKE)	Eeva.Sairanen@ymparisto.fi
Germany	Mr. Jens-Georg Fischer	Federal Maritime and Hydrographic Agency (BSH)	jens.fischer@bsh.de
Germany	Mr. Sven Koschinski	Meereszoologie	SK@meereszoologie.de
Germany	Mr. Sebastian Schirmel	Federal Maritime and Hydrographic Agency	sebastian.schirmel@bsh.de
Poland	Mr. Zygmunt Klusek	Institute of Oceanology of Polish Academy of Sciences, Marine Acoustics Laboratory	klusek@iopan.gda.pl
Sweden	Ms. Mathias Andersson	Swedish Defence Research Agency	mathias.andersson@foi.se
HELCOM Secretariat			
HELCOM Secretariat	Ms. Marta Ruiz	HELCOM Secretariat	marta.ruiz@helcom.fi