Baltic Marine Environment Protection Commission

Tenth Meeting of the Working Group on Reduction of Pressures from the Baltic Sea Catchment Area

PRESSURE 10-2019

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Background

HOD 55-2018 agreed to establish an *ad hoc* platform for analysing sufficiency of measures (SOM Platform) to support the update of the Baltic Sea Action Plan (Outcome HOD 55-2018). The aim of the SOM analyses is to evaluate whether existing policies are sufficient to achieve good environmental status (GES) in the Baltic Sea. The framework for the SOM analyses is outlined in document DS-3 to the Pressure 10-2019. The approach was consolidated at the Kick-off meeting of the SOM Platform and an updated version will be submitted for approval by GEAR 20-2019.

To implement the framework and contribute with the required data and information for the analyses, topic teams will be established for each of the topics addressed by the SOM Platform. The topic teams will work intersessionally and report back to SOM Platform meetings and relevant Working Groups during the course of work. This document includes an initial plan for work to analyse the sufficiency of measures related to **underwater noise** and information on how the work will be organized.

Action requested

The Meeting is invited to take note of the information.

Organization of work

The SOM analyses for underwater noise is supported by a topic team lead by Denmark and with strong links to the HELCOM expert network on underwater noise (EN-Noise).

The team held its first meeting 1 March 2019 in Helsinki, in connection to the first SOM-platform meeting. The online meeting of EN-Noise (25 April 2019) will be used to introduce the work to the network and to discuss their contribution to the work. Actual contribution by EN-Noise to the work is expected to take place on the next physical meeting of the network, to be held in Copenhagen in June 2019 (date tbc).

Initial plan for work

Underwater noise has been recognized as a pressure on the Baltic marine ecosystem only recently (HELCOM Copenhagen Ministerial Declaration 2013 and HELCOM Brussels Ministerial Declaration 2018) and was thus not included in the Baltic Sea Action Plan adopted in 2007. This means that no targets for reduction of underwater noise pressures have been agreed upon, which in turn limits the scope of a SOM analysis for underwater noise.

The physical nature of underwater noise means that some links and connections are relatively simple and well known:

- Anthropogenic sources are generally well known (although not always well described).
- There is a direct link between activities and pressures: different activities generate noise, which is directly and immediately radiated into the surrounding environment.
- Underwater noise does not persist in the environment but disappears within seconds to minutes after a source has been removed. Thereby there is no lag time in the system and state essentially equals pressure.
- The absence of lag time means that measures to reduce underwater noise have immediate effect upon implementation. This greatly simplifies SOM and gap analyses, as the presence of a gap between state and target in itself indicates that measures are insufficient.

On the other hand, there are complicating factors related to the state of knowledge on effects of underwater noise on ecosystem components:

- No description of Good Environmental Status (GES) with respect to underwater noise has been adopted or accepted in HELCOM or any other similar body. A process towards establishing environmental targets for underwater noise is ongoing in HELCOM, among other along guiding principles already agreed (HOD 54-2018, para 4.30).
- Due to large differences in physiology, biology and conservation status between different ecosystem components, they may be differently affected by underwater noise. This relates, in particular, to different sensitivities to different parts of the frequency spectrum of the noise and that different species/species groups may have very different sensitivities in different parts of their life cycle. This means that some stratification with species/species groups may be required for proper assessment and subsequent establishment of targets.
- The lack of proper description of GES for underwater noise further means that there is a poor understanding of the link between pressure and GES. In other words, it cannot safely be assumed that any reduction in pressure will lead to better conditions, although a reduction at worst can be neutral, never have a negative impact on GES.
- Due to the lack of a GES threshold and the near equivalency of noise pressure and state, a metric of percent reduction in pressure from the base year may be preferred.

The above points taken together means that a GES based SOM analysis cannot be conducted for underwater noise, as the absence of a target prevents quantification of a gap between effects of current measures to reduce noise (all voluntary, national measures) and the target. However, the flexibility of the

SOM approach provides the alternatives of percent pressure reduction based analysis or undefined GES based analysis. One of these approaches will be selected in consultation with ACTION WP6.

The above simplifying and complicating factors were discussed by the group on the initial meeting and is subject to further discussions by the group and EN-Noise in coming meetings, but has so far led to a scoping of the SOM work along the following lines:

- Current national and voluntary measures implemented to reduce underwater noise will be evaluated with respect to effects on ecosystem components.
- Possible new national and community level measures will be evaluated with respect to effects on ecosystem components.
- Primary focus will be on effects on marine mammals, due to the considerable knowledge available on effects of underwater noise on this group.
- Secondary focus will be on effects on fish, due to significant gaps in the understanding of effects of underwater noise, and general knowledge about distribution and sensitivity of fish populations to these effects.
- Effects on invertebrates will only be covered to a limited degree, due to a very poor level of knowledge regarding effects of noise on this group.
- If quantitative analyses become relevant and possible within the time frame of the SOM analysis these will be conducted at a spatial scale of sub-basins or groups of sub-basins.

The output from the group's work is thus expected to be a catalog of existing and suggested future measures to reduce underwater noise, including evaluation of their likely contribution towards achieving GES for the different species groups and, to the degree possible within the limits of allocated resources, include considerations of the cost of implementing the proposed measures. The suggested future measures will follow the format for synopses as outlined by the kick-off meeting of the SOM Platform (HELCOM SOM Platform 1-2019, Annex 3).

This catalog is provided to allow decisions to be made on measures with respect to underwater noise in the coming revision of the Baltic Sea Action Plan in order to reach targets to be established in the updated Action Plan.

Timetable

An annotated and referenced list of sources will be provided during spring 2019.

An annotated and referenced list of currently implemented national measures will be provided during spring 2019, presuming that adequate information can be obtained from the HELCOM countries.

An annotated and referenced list of additional measures will also be provided during spring 2019

Further work will be undertaken to evaluate the effectiveness of the different measures and their documented or predicted effects on pressures and ecosystem components during fall 2019. This will result in a compiled catalog of measures, which should allow comparison and selection among different measures to include in the revised Action Plan.

Final report of the work is expected to be completed in spring 2020.

Task	**Outcome/contribution**	**Timeline**
Identify relevant measures frameworks	Very short information document	April
Propose geographic scale of analysis	Proposal	April
Expert evaluation: activity-pressure matrix	Participate in survey	April/May
Pressure-state time-lags	Data (models, project outcomes, literature)	June/July

Measure-pressure time-lag verification	Verify time-lag effected measures from list provided by Secretariat	June-August
Measure list verification	Verify no missing relevant measures from list provided by Secretariat	June-August
Effect of measures data	Data (models, project outcomes, literature, national reports)	June-August
Expert evaluation: effectiveness of measures	Participate in survey/workshop	October
Expert evaluation: pressure-state linkage	Participate in survey/workshop	October
Development of future activities	Data (models, project outcomes, literature, national reports)	Late fall
Synopses on potential new measures	Information document	End of year