Cooperation at European Union level- implementation of the European Marine Strategy Framework Directive

Anthropogenic Underwater Noise
Hamburg, September 2019

Outline

• Changes brought by Marine Strategy Framework Directive
  • Legislative change
  • Cooperation
  • Implementation

• Progress

• Some issues

Legal instrument for the protection of EU seas aiming to achieve the **Good Environmental Status** (GES) of the EU’s marine waters by 2020 (which is 3 months and 3 weeks from today)
- by EU Member States developing **Marine Strategies**

Sets framework for **ecosystem-based**, adaptive and integrated approach to the management of all human activities which have an impact on the marine environment

**Other key principles:**
- Regional cooperation - RSCs
- Precautionary principle and risk-based approach
- Public consultation and dialogue with stakeholders

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**Most relevant changes by MSFD**
(Compared to previous EU legislation)

- Need to address ecosystem scale
- Regional cooperation in assessment, target setting
- Underwater noise formally defined as pollutant

Article 3-8
‘pollution’ means the direct or indirect introduction into the marine environment, as a result of human activity, of substances or energy, including **human-induced marine underwater noise**, which results or is likely to result in deleterious effects such as harm to living resources and marine ecosystems, including loss of biodiversity, hazards to human health, the hindering of marine activities, including fishing, tourism and recreation and other legitimate uses of the sea, impairment of the quality for use of sea water and reduction of amenities or, in general, impairment of the sustainable use of marine goods and services.
EU level cooperation on underwater noise

- Two indicators defined, addressing main concerns:
  - short duration: low and mid-frequency impulsive noise
  - long lasting: low frequency continuous noise

- Common Implementation Strategy: dedicated working groups, including technical group on underwater noise (TG Noise)
- Provided guidance documents for EU MS

- Overview of potential effects
  - Initial concerns: hearing damage, strandings by loud sounds
  - For ecosystem/populations, subtle responses (masking, behavioural change) most relevant (low level/long ranges/large areas affected)

- Main sources and aim of monitoring described
  - Low and mid-frequency impulsive noise
  - Low frequency continuous (or ambient) noise

Impulsive noise effects

- Physical effects (hearing/injury) not main concern
  - But several MS regulate this as avoidable (incl. GE, NL, ...)

- Temporary (but sometimes large scale) disturbance/avoidance

- At some point (time and space) temporary disturbance may have consequences on populations

- Impulsive noise monitoring to provide overview of all relevant impulsive noise sources
  - Across activities
  - Across boundaries
  - Longer periods

Dähne et al 2013 Environ. Res. Lett. 8
Most relevant noise sources

Intentional
- Seismic survey
- (Military) sonar

Unintentional
- Pile driving
- Shipping
- Explosions

Monitoring Guidance

- Scale of monitoring: Regional/sub-regional level
- Technical specifications register impulsive noise
- Noise mapping: combination of measuring and modelling
  - Maps to provide the numbers relevant for policy
- Types of measurement locations (cat A and cat B)
  - To enable mapping
- Metrics
  - ‘averages’ → exceedance levels
  - Most relevant metrics still to be determined
- Implementation: regional sea conventions (e.g. OSPAR)
Status noise monitoring (EU)

- **Progress**
  - Agreement on common approach
  - Implementation monitoring programmes started
  - Joint monitoring programmes, provide information that cannot be obtained by individual MS monitoring campaigns

- **Limitations**
  - No relevant historic data: first available data 2014 (continuous noise, Baltic Sea), 2015 (impulsive noise, part of OSPAR region)
  - Pressure monitoring only
  - Trends (and reference state) not known

Implementation of marine strategies

- **National scale**
  - EU Member States have developed and implemented marine strategies (2012, 2018)
  - Many MS have regulated activities generating impulsive underwater noise, e.g. piling and seismics (also based on other EU/national legislation)
    - Military activities exempted from MSFD but often still regulated (by Defence organisations)
  - Continuous noise/shipping needs regulation at IMO level

- **International (EU/regional)**
  - OSPAR 2016 Intermediate Assessment available for national scale assessments, but only overview of activities
  - No agreed assessment at regional scale; Commission Decision of 2017 on criteria and methodological standards requires cooperation at Union level
  - Proposal for common assessment framework under development in TG Noise
Next steps

• Impulsive noise
  • Significant progress, enabling better management of some activities (driven by need to regulate development of offshore wind energy)
  • Still limited understanding of population/ecosystem scale effects
  • Working towards threshold values to define Good Environmental Status
  • Should not forget ‘other species’

• Continuous noise
  • More information becoming available of potential effects of continuous (shipping) noise
  • Information on pressure further developed (noise maps)
  • Scale of effects at individual and population level unclear
  • At this moment (and near future) not sufficient for setting targets
  • Technical information on measures to reduce noise emissions from shipping needed; benefits from improving energy efficiency unclear

Main messages – needs

• EU Marine Strategy has led to increased cooperation between EU Member States, common implementation has led to common language

• Monitoring started in Joint Monitoring Programmes from the onset ➔ pressure data will be available at larger scales, in many regions; now working on common methodology for assessment

• Future:
  • Substantial knowledge gaps remain, lack of science base obstacle to internationally (regional scale) agreed assessments (and threshold values) in the short term
    • Impulsive further developed than continuous noise
    • If regional consensus on need to act, international management framework needed (Regional Action Plan?)
  • Shipping: back on IMO agenda (initiative of Canada)
    • Fundamental knowledge gaps at effects side, pressure side, measures side (SL + RL) all need to be addressed
    • Existing local initiatives, but clear that regulation on acoustic footprint reduction needs IMO involvement