JOINT MONITORING PROGRAMME FOR AMBIENT NOISE IN THE NORTH SEA

Niels Kinneging[*1], Mathias H. Andersson[2], Stephen Robinson[3], Christ de Jong[4], Jens Fischer[5], Nathan Merchant[6], Jakob Tougaard[7]

[1] Rijkswaterstaat, Netherlands, email: niels.kinneging@rws.nl
[2] FOI, Stockholm, Sweden, email: mathias.andersson@foi.se
[3] NPL, Teddington, UK, email: stephen.robinson@npl.co.uk
[4] TNO, The Hague, Netherlands, email: christ.dejong@tno.nl
[5] BSH, Hamburg, Germany, email: jens.fischer@bsh.de
[6] CEFAS, Lowestoft, UK, email: nathan.merchant@cefas.co.uk
[7] Aarhus University, Roskilde, Denmark, email: jat@bios.au.dk

In 2018, the three-year project "Joint Monitoring Programme for Ambient Noise in the North Sea" (EU Interreg North Region Programme 'Jomopans' (https://northsearegion.eu/jomopans/) started. Jomopans will develop a framework for a fully operational joint monitoring programme for ambient noise for the North Sea region. The project will deliver the tools necessary for managers, planners and other stakeholders to incorporate the effects of ambient noise into their assessments of the environmental status of the North Sea, and to evaluate measures to improve the environment.

International concern increasingly focusses on the potential negative effects of anthropogenic underwater noise on sensitive marine fauna. Questions regarding sound sources, sound transmission, and the distributions of vulnerable species in the North Sea must all be tackled transnationally, as specifically required by the EU Marine Strategy Framework Directive and by the OSPAR Convention.

The project's approach

The Jomopans project follows the guidelines for monitoring continuous underwater sound set by the European Technical Group on Noise (Dekeling et al, 2013). The project develops soundscape maps for the North Sea. The relative importance to the soundscape of different sound sources (such as ships and wind) will be determined, together with the variation in continuous sound pressure levels and sources in different parts of the North Sea. A paper on underwater sound mapping has been submitted to Aquatic Noise 2019 (De Jong et al, 2019).
In total 14 measurement stations around the North Sea are now employed and gather long term sound data. These data will be combined with modelling to obtain validated soundscape maps of the North Sea.

Project results

A management tool will be developed which combines distribution maps of sensitive species with the soundscape maps. Marine policy makers can use this information to evaluate Good Environmental Status in relation to underwater sound. Also, the aim is that they can use the tool in the future to design and assess appropriate measures to reduce the risk of environmental impacts of underwater sound.

References

Dekeling, R.P.A., Tasker, M.L., Van der Graaf, A.J., Ainslie, M.A, Andersson, M.H., André, M., Borsani, J.F., Brensing, K., Castellote, M., Cronin, D., Dalen, J., Folegot, T., Leaper, R., Pajala, J., Redman, P., Robinson, S.P., Sigray, P., Sutton, G., Thomsen, F., Werner, S., Wittekind, D., Young, J.V., **(2013),** "Monitoring Guidance for Underwater Noise in European Seas - Executive Summary". 2nd Report of the Technical Subgroup on Underwater Noise (TSG Noise).

De Jong, C., Binnerts, B., Östberg, M., Karasalo, I., Folegot, F., Clorennec, D., Ainslie, M., McGillivray, A., Warner, G., Wang, L., **(2019)**, "Underwater sound mapping: Statistics and uncertainty". Submitted for presentation at *Aquatic Noise 2019*.