

# Exploring the soundscapes of the world's oceans – A demonstration of OPUS, the Open Portal to Underwater Soundscapes

Thursday 4 April 2024 17:06 (1 minute)

Facing an era of rapid, anthropogenically induced changes in the global oceans, there is increasing acknowledgement of anthropogenic noise as a marine pollutant. Ocean sound is now considered an essential ocean variable by the Global Ocean Observing System (GOOS) and the need for ambient noise surveillance is emphasized not only by the scientific community, but also by policy-making entities.

Our comprehension of the role of underwater sound in the marine realm and our understanding of long-term trends in anthropogenic sound and its effects on marine life and ecosystem health is greatly fostered by personal experience of these soundscapes. To this end, the OPUS (Open Portal to Underwater Soundscapes, <https://opus.aq/>) data portal is currently being developed by the Ocean Acoustics Group at the Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research (AWI) in Bremerhaven, Germany, embedded in the Helmholtz Association's DataHub initiative and coordinated by the German Marine Research Alliance (DAM). Designed as an expeditious discovery tool for archived passive acoustic data, OPUS promotes the use of archived acoustic data collected worldwide by providing open access to stacks of spectrograms, progressively enhancing in temporal resolution. To motivate data provision and use, OPUS adopts the FAIR principles for submitted data while assigning a most permissive CC-BY 4.0 license to all OPUS products (i.e. visualizations of and lossy compressed audio data). This unprecedented opportunity to experience marine soundscapes collected worldwide is intended to address a broad range of stakeholders, from the general public, to artists, journalists, fellow scientists, regulatory bodies, consulting companies, and the marine industry, to learn about and access the data for the respective needs of each stakeholder group.

With data becoming openly accessible, the public and marine stakeholders will be able to easily compare soundscapes from different regions, seasons and environments, with and without anthropogenic contributions. Thereby, OPUS contributes to an improved understanding of the world's oceans soundscapes and anthropogenic impacts thereon over various temporal and spatial scales.

During the 9th Data Science Symposium, held in Bremen in 2024, features and functionalities of OPUS will be demonstrated to all interested ocean enthusiasts eager to explore the sound(scape)s of remote and inaccessible areas such as the polar oceans.

**Primary author:** THOMISCH, Karolin (AWI)

**Co-authors:** PROBST, Lewin (software company emirror-de); BOEBEL, Olaf (AWI); HESS, Robin (AWI)

**Presenter:** THOMISCH, Karolin (AWI)

**Session Classification:** Posters, Demos and Refreshments

**Track Classification:** Postersession