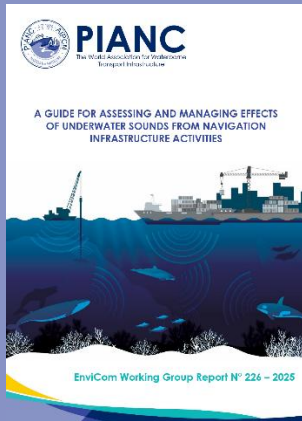




PIANC

The World Association for Waterborne
Transport Infrastructure



PRESS RELEASE

17 January 2025

A Guide for Assessing and Managing Effects of Underwater Sounds from Navigation Infrastructure Activities

EnviCom WG 226

<https://bit.ly/40z5w1X> (Free for PIANC Members)

Activities associated with the construction, operation, and maintenance of waterborne transport infrastructure (e.g. wharves, jetties, shipping channels and berths, piled structures) generate underwater sounds, and there is a growing international awareness that these sounds may impact ecological receptors (e.g. aquatic species) within the surrounding waters. A variety of marine animals are known to be affected by anthropogenic underwater sound, with negative effects having been reported for more than 100 marine species (e.g., cetaceans, marine reptiles, pinnipeds, bony fishes and invertebrates). The occurrence and magnitude of effects on marine animals depends on the sound(s) being generated, the hearing sensitivity of the receptor species and on the type of impact generated (e.g., masking, behavioural change, physical damage).

The report developed by PIANC Working Group 226 (EnviCom WG226) is intended to assist port managers, contractors and consultants evaluate the risks and manage the effects of underwater sound associated with port development or maintenance activities. The report provides a review of the potential biological effects of underwater sound from waterborne transport infrastructure activities (including reference to a number of contemporary and widely-adopted impact thresholds) and a framework for the evaluation of the potential ecological risks. The risk evaluation approach draws from existing approaches and best practices worldwide and builds on previous EnviCom Working Group reports addressing various aspects of environmental risk assessment, to provide a transparent, consistent, repeatable, and science-based methodology to inform risk management decisions.

Utilizing a risk-based approach, a screening assessment is initially recommended as a first step to determine whether underwater sound is likely to pose an environmental risk. This involves a coarse 'initial' assessment based on existing information on the proposed activity and receiving environment. This step can identify if site-specific data are needed to fill critical data gaps (i.e., uncertainty in relation to the presence of sensitive receptors). It can also be used to screen out sound sources or biological receptors that are not of concern, or direct the focus on those sources or receptors of particular concern.

Depending upon the outcomes of the screening assessment step, a more detailed risk assessment may be required. This will include the detailed description of the environmental attributes of concern (e.g., sensitive species, commercially important fisheries) and the sound exposure scenario(s) (e.g., spatial and temporal scale, timing and duration, intensity levels, waveform) to inform the assessment of impacts and development of management measures. In the detailed risk assessment stage, it is common to apply numerical modelling approaches to refine assumptions of underwater sound exposures.

A key benefit of the proposed framework is the inherent flexibility, allowing it to be adapted to a wide variety of project-specific scenarios, and the ability to include new data and continually improve performance throughout the delivery of a project.

The report concludes by providing guidance on the selection of management measures, and International case studies to demonstrate the recent application of the risk-based approach to the assessment and management of underwater sound associated with port developments.

Notes to Editor

PIANC is the global organisation providing guidance and technical advice for a sustainable waterborne transport infrastructure to ports and waterways. Established in 1885, PIANC unites the international experts for technical, economic, and environmental topics related to waterborne transport. Our members include national governments and public authorities, corporations, industry and academic experts and young and experienced professionals.

Enquiries – For further information, please contact the PIANC General Secretariat at info@pianc.org or 0032 2 253 71 61.