Underwater Noise Services

About

There has been a growing need in recent years for understanding noise impacts in the marine environment. This environment experiences both natural, ambient noise and man-made noise from sources such as shipping, offshore oil and gas platforms, renewable energy generators, seismic surveys, piling, sonar, fisheries and marine aggregate extraction.

New marine developments are subject to a number of environmental laws and regulations.

To remain compliant with the legislation, it is important that the developer fully understands the risks associated with the project.

Environmental assessments require an understanding of the radiated noise from proposed activities and the background ambient noise.

There is also a need to assess the impact of the anthropogenic noise on receptors in the marine environment, including marine mammals and fish, which can range from physiological hearing damage to behavioural avoidance or masking of communications. Any impacts considered to be significant require appropriate mitigation measures to reduce the impacts to acceptable levels.

Managing Underwater Noise

To assist developers in managing underwater noise risks throughout the project life cycle of marine developments, ABPmer are pleased to offer a range of specialist services including:

- Desk-based review of noise source/baseline environment/receptor interaction;
- Environmental impact assessment based on latest available knowledge of:
  - Background noise levels;
  - Source levels associated with devices;
  - Models of sound propagation underwater;
  - Hearing sensitivity of marine receptors including marine mammals and fish;
  - Predictions of impact zones.
- Negotiation of mitigation requirements and monitoring conditions;
- Reporting against consent conditions;
- Decommissioning support (as required).

Scoping Study

Impact Assessment

Mitigation and Monitoring Design

Consent Negotiation

Construction and Operational Monitoring

Decommissioning Advice

Further Information

Please phone Elena San Martin, ABPmer: 02380 711840

Bottlenose dolphins image courtesy www.charliephillipsimages.co.uk

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Understanding Impacts

ABPmer has significant experience in the assessment of underwater noise risks associated with the construction and operation of marine developments for EIAs.

Our underwater noise assessments integrate the very latest research in acoustic modelling with knowledge of species responses, to determine the range and effect of underwater noise.

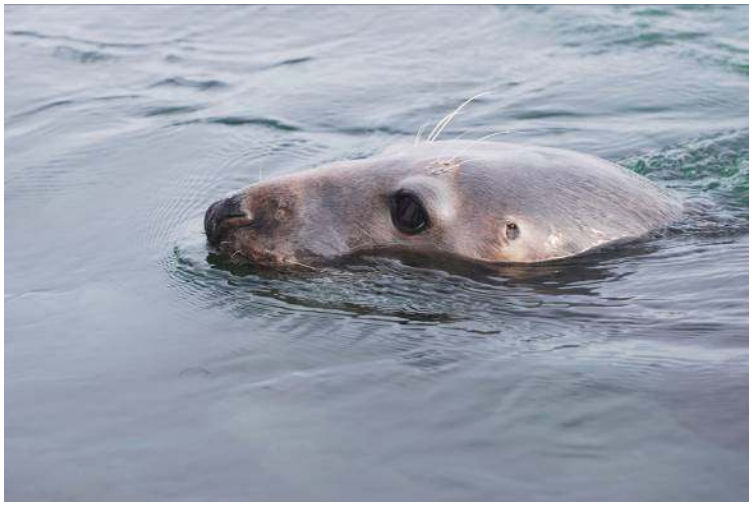
We use desk based tools to predict the transmission and attenuation of underwater sound from a noise source using both narrowband and broadband acoustic propagation models. All assessments can be refined through more detailed acoustic modelling where sufficient data allow. Using published audiogram information we can extract species specific hearing thresholds and estimate the hearing zone for different species.

We also offer the estimation of physiological and behavioural impact zones for marine mammals and fish in the context of existing ambient sea noise using weighting scales, such as the M-Weighting and dBht metric for marine species.

These weighting scales provide a species specific noise level referenced to an animal's hearing ability and, therefore, a measure of the potential of the noise to cause an effect.

Mitigation

Noise effects that are considered to be significantly adverse are likely to require the application of mitigation measures in order to reduce the impact to acceptable levels.



Any proposed mitigation measures are likely to become a condition of attaining consent for the project. ABPmer has significant experience in developing practical options for mitigation including the development of agreed mitigation and monitoring programmes.

Noise mitigation measures include timing activities to avoid environmentally sensitive periods (e.g. breeding and migratory periods), modifying construction methodology (e.g. soft start procedures), and applying methods to directly reduce impacts (e.g. noise screens). Noise monitoring during construction and/or operational activities may also be used to support noise predictions made at the assessment phase and ensure impacts are maintained below a minimum threshold of effect.

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Grey seal image courtesy www.oceansedgephotography.co.uk

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