



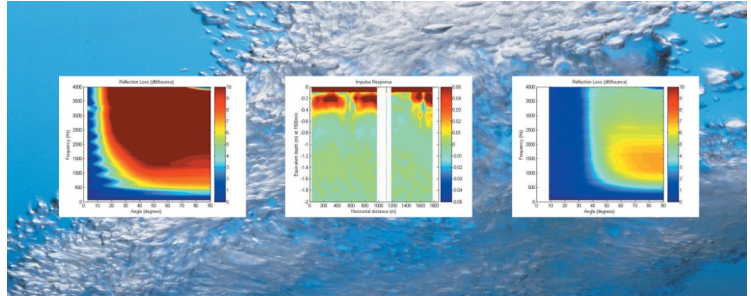
Ambient Noise

Set the task of improving the Royal Navy's capability to forecast the ambient noise in the oceans of the world, SEA developed a system for the UK Ministry of Defence. In conjunction with NOC, Southampton and in collaboration with NATO scientists, SEA undertook research into the geoacoustic inversion methods for high-resolution acoustic characterisation of the seabed.

Ambient Noise Prediction

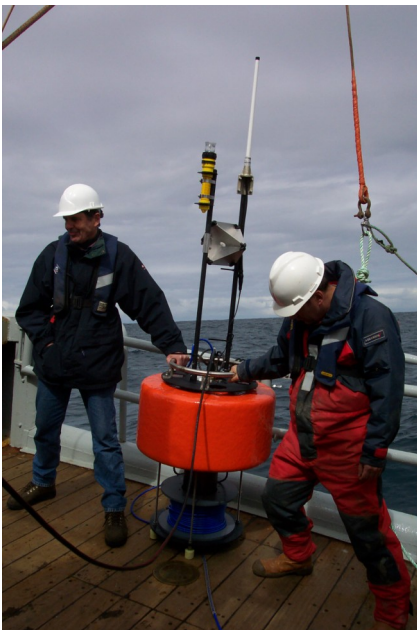
Under contract to the MOD, SEA has performed various tasks associated with rapid environmental assessment and has delivered an Ambient Noise Prediction System.

SEA ensured that its research-based system was swiftly pulled through into operational use. The Fleet's ability to exploit the ocean acoustic environment was considerably enhanced as a result of actively engaging Royal Navy and MOD personnel in the requirements definition.



Measuring Seabed Reflectivity with Ambient Noise

Applied research conducted under the MoD's Rapid Environmental Assessment project has demonstrated, through theory and experiment, that it is possible to measure the acoustic reflection coefficient of the seafloor as a function of angle and frequency from the vertically directional ambient noise field, measured on a Vertical Line Array (VLA) of hydrophones.



The normal incidence reflection coefficient can be further processed to give the impulse response of the seabed. This can be done continuously as the buoy drifts, providing images similar to those received from a normal incidence reflection profiler. SEA has conducted a number of sea trials at several locations around the UK coastline with a freely drifting buoy below which is suspended a vertical line array. Using this method allows seabed acoustic characterisation from a VLA buoy with minimal power requirements and no acoustic environmental impact.