

Marine Environmental Noise Measurement

Stephen P Robinson

National Physical Laboratory, UK



Oceans of Tomorrow

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Marine Environmental Noise Measurement 2

- Increasing concern regarding underwater anthropogenic noise
- Effect on marine life
 - Mammals
 - Fish species
- International (European) problem
 - noise made by one country can be heard in neighbouring waters
- Offshore operations (sources):
 - geophysical seismic surveying (oil&gas)
 - offshore construction work (marine piling)
 - shipping
- Regulation beginning to be applied nationally



Marine Environmental Noise Measurement 3

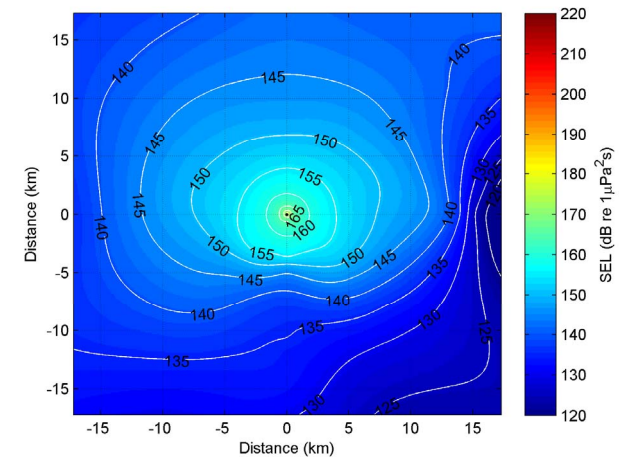
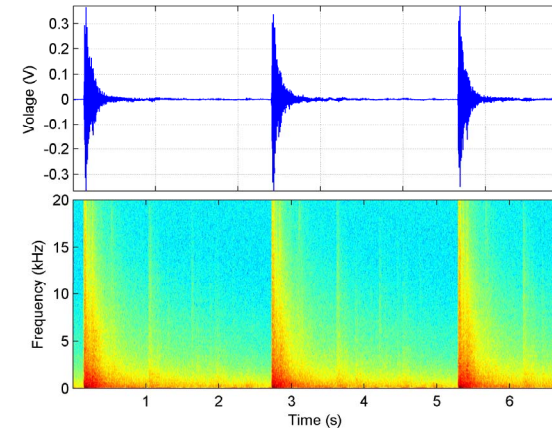
- European Marine Strategy Framework Directive
- Working Group 3, Descriptor 11:
 - “Introduction of energy, **including underwater noise**, is at levels that do not adversely affect the marine environment.”
- Pollution: “... the introduction of substances or energy, including human-induced **underwater noise**, which results or is likely to result in deleterious effects”



- Noise indicators under development
 - Impulsive noise (marine piling, seismic surveying, etc)
 - Shipping noise

Marine Environmental Noise Measurement 4

- Work needed to underpin regulation with sound science
- Need to choose best noise metrics and descriptors
- Need to agree consistent definitions of noise metrics
- Need standard methods and procedures for measuring underwater noise
- Need greater understanding of the effects on wide range of species



Marine Environmental Noise Measurement 5

- Standards work already started in UK, Netherlands and Germany
 - NPL, TNO, ...
- Break problem down into:
 - Source characteristics
 - Transmission characteristics
 - Receptor characteristics
- Need consistent approach across all Europe
 - North Sea, Mediterranean, Black Sea...
- Work feeds into international standards
 - ISO, EN, etc...

