

Cofinanciado por:



jUMP – Joint action for underwater noise monitoring in Portuguese waters

How local initiatives could support MSFD implementation?

Erica Cruz

24/11/2021

Back to 2014... Preparatory meetings for MSFD

2014



MSFD Preparatory
meetings in PT

Descriptor 11 – considered for the programme of measures (in PT)
“the measures which need to be taken in order to achieve or maintain good environmental status”

- Few information available about underwater noise levels
- Few information about noise sources
- Few information about distribution and occurrence of sensitive species



Clear need to know more
and systematic data
gathering

2017



Porposal
submission to
Fundo Azul
managed by DGPM

JUMP PROJECT – General Information

Objective: Promote and discuss underwater noise monitoring in Portuguese waters

JUMP General Information

Funding : Fundo Azul

Reference: FA_06_2017_098

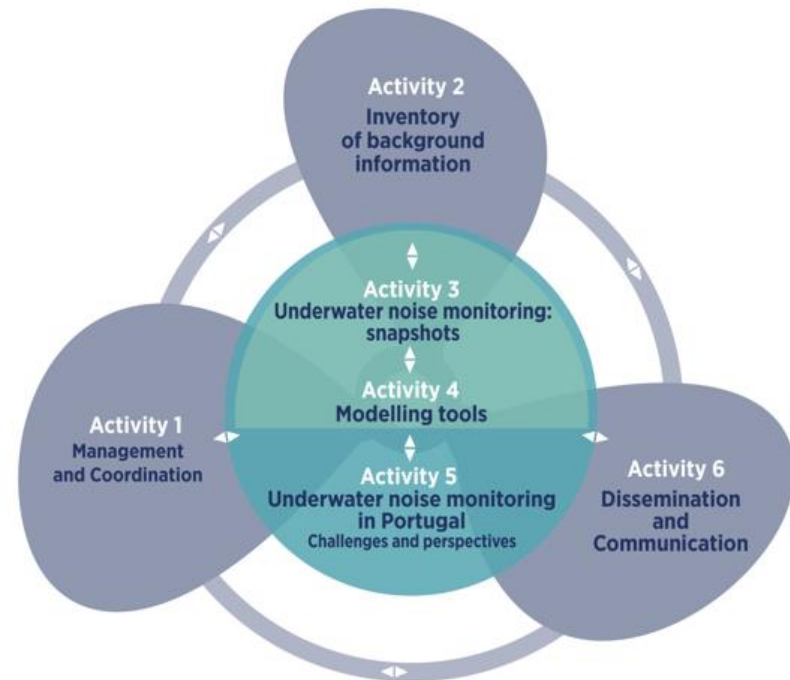
Operation costs: € 166.407,00

Funding: € 149.776,00

Duration: 24 months

Start date: 02/01/2020

End date: 31/12/2021



Inventory of background information

UNDERWATER RECORDINGS | ANTHROPOGENIC ACTIVITIES | SENSITIVE SPECIES

Underwater recordings: Limited information available to characterise underwater noise levels

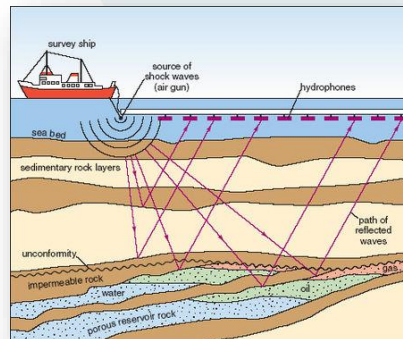


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Anthropogenic sources
Impulsive noise: geophysical campaigns – exploitation of mineral resources, cartography and bathymetry data acquisition
Continuous noise: maritime traffic is the predominant source



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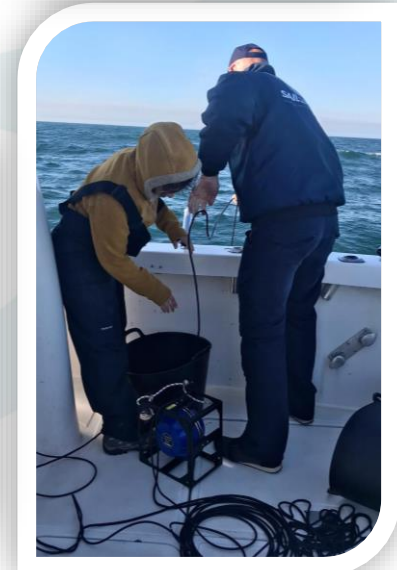
Sensitive species (e.g.)

- Cetacean species in ZEE
- Sperm whale (Azores)
- The long-snouted seahorse (Olhão, mainland)
- Monk seal (Madeira)



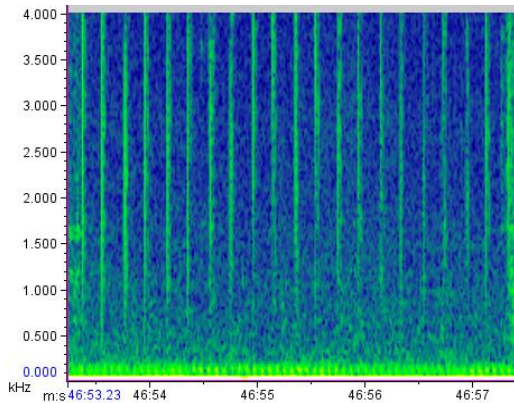
Snapshots – Measuring underwater noise

- Systematic underwater noise recordings @2 sites:
 - Aveiro and Olhão 20 m 30 m 50 m
- Objectives:
 - Measure underwater noise levels in coastal regions
 - Calibrate sound propagation models
- Methods:
 - Drifting measurements
 - Fixed measurements

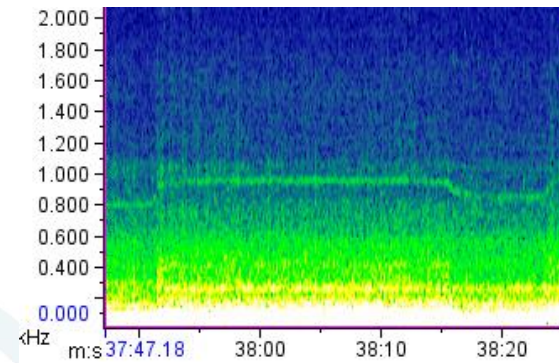


Snapshots – Measuring underwater noise

- Background noise: natural environment + shipping



Dolphin clicks

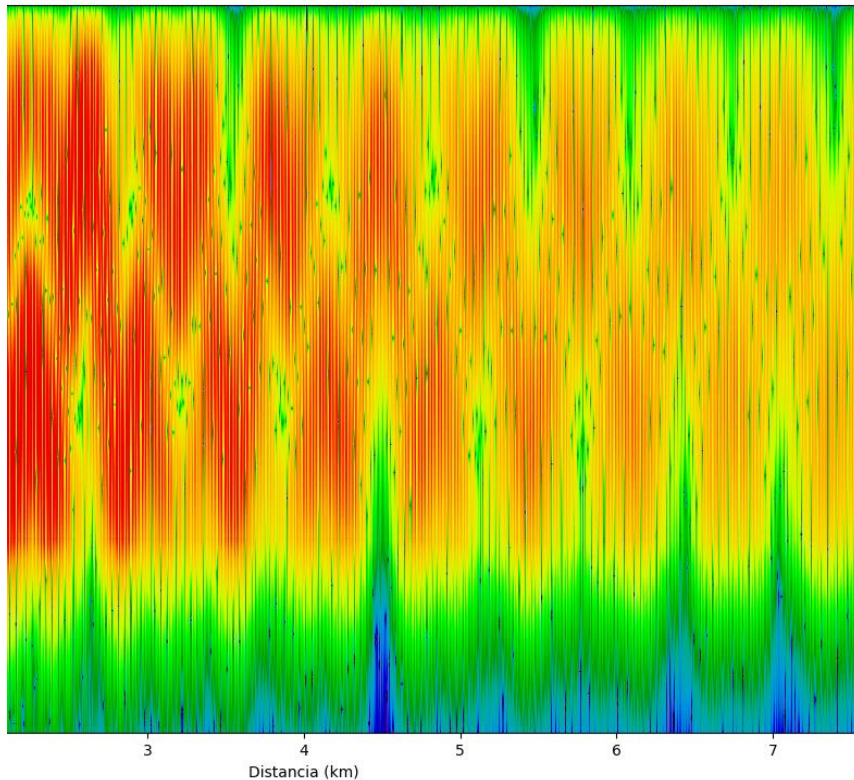


Recreational vessel

- BB noise levels: range from **97 to 121** dB re $1\mu\text{Pa}$
- Under analysis TOL at 63Hz and 125 Hz bands as recommended by MSFD

jUMP Modelling tool

KRAKEN - Aveiro simulação equidistante 250Hz



Bathymetry

Seabed composition

Water temperature

Salinity

jUMP Modelling tool



Assistente de Configuração ID:8

Passo 1: Estações | Passo 2: Parâmetros | Passo 3: Submissão

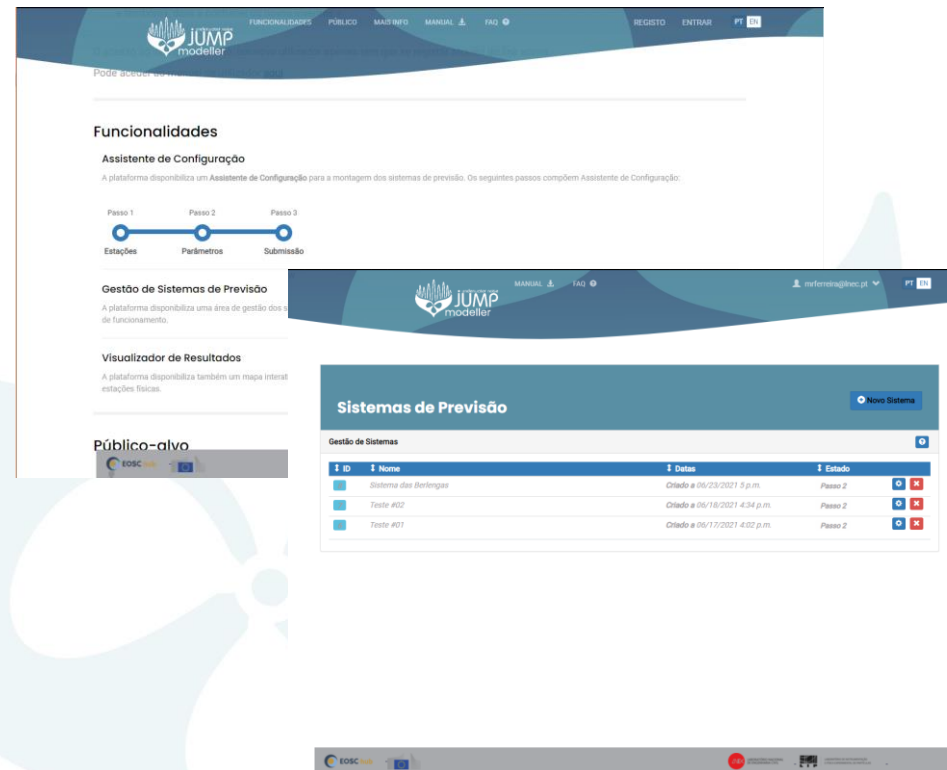
Definir Emissor e Receptor

Neste passo o utilizador define o posto emissor e receptor.

Nome	Latitude	Longitude	Papel
<input checked="" type="checkbox"/> Berlenga S	39.413386	-9.505405	R
<input checked="" type="checkbox"/> Fábrica do Bateal	39.375445	-9.342499	E
<input checked="" type="checkbox"/> Porto de Peniche	39.349697	-9.372883	E

Mapa de localização das estações em Berlenga e arredores.

Recomeçar passo | Guardar alterações | Seguinte



Funcionalidades

Assistente de Configuração
A plataforma disponibiliza um Assistente de Configuração para a montagem dos sistemas de previsão. Os seguintes passos compõem o Assistente de Configuração:

Passo 1: Estações | Passo 2: Parâmetros | Passo 3: Submissão

Gestão de Sistemas de Previsão
A plataforma disponibiliza uma área de gestão dos sistemas de funcionamento.

Visualizador de Resultados
A plataforma disponibiliza também um mapa interativo das estações físicas.

Sistemas de Previsão

ID	Nome	Detes	Estado
1	Sistema das Berlengas	Criado a 06/29/2021 5 p.m.	Passo 2
2	Teste #02	Criado a 06/18/2021 4:34 p.m.	Passo 2
3	Teste #01	Criado a 06/17/2021 4:02 p.m.	Passo 2

Raising awareness



What about this work without engagement?

Conclusions

- Although geophysics campaigns are a relevant source of anthropogenic noise there is not a specific framework regarding monitoring of underwater noise levels;
- Shipping industry is developing effort to mitigate underwater noise levels
- Underwater noise levels similar to other regions
- Fixed stations provide a better information about variation of noise levels
- Tools developed in the project will be available to be used by administration to address MSFD – need for training; improvement to consider cumulative sources



Further actions



▶ Continue

