

**Interreg**  
North Sea Region  
**Jomopans**



European Regional Development Fund

EUROPEAN UNION

# PITCHES round 1

QUIETMED2, SONIC, IQOE

Midterm Event

London, 8 October 2019

AARHUS UNIVERSITY



**Cefas**

**FFI** Forsvarets  
forskningsinstitutt  
Norwegian Defence Research Establishment



Scottish Government  
Riaghaidh na h-Alba  
gov.scot  
**marinescotland**



**NPL**  
National Physical Laboratory

Institut royal des  
Sciences naturelles  
de Belgique  
**museum**



**TNO**



Co-funded by the  
European Union

# quietMED2

Joint programme for GES assessment on D11-noise in  
the Mediterranean Marine Region.

## Project Overview

Elen García - European Projects Office Manager

110661/2018/794481/SUB/ENV. C2  
JOMOPANS Mid-Term Workshop, 8<sup>th</sup> October 2019, London

- Coordinator: CTN-Marine Technology Centre (ES)
- Starting Date: 1<sup>st</sup> Feb. 2019
- Duration: 24 months.
- Funding: 739,055 €
- Funded by DG ENV to implement 2<sup>nd</sup> Cycle of MSFD

11 partners : 8 entities + 2 CA (Greece and Cyprus) in the Med Region.

Link to Barcelona Convention + OSPAR and HELCOM



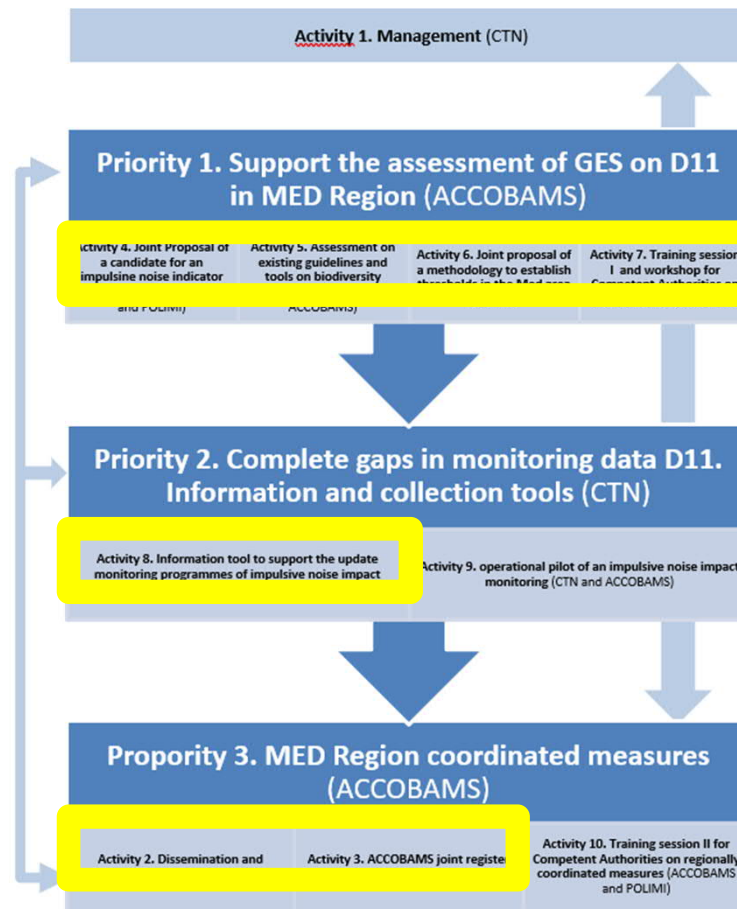
- SO1: Develop and implement a candidate impact indicator in the Med for impulsive noise (D11C1).
- SO2: Joint proposal of a methodology to establish threshold values to implement the GES decision in reference to impulsive noise in the Med.
- SO3: Build efficient data & information tool to implement D11C1 and update Impulsive Noise monitoring programmes according to new GES Decision.
- SO4: Perform an operational pilot of an impulsive noise impact monitoring programme implemented with the updated Joint register to demonstrate feasibility.
- SO5: Promote Mediterranean Region Coordination

## 4. Implementation

10 Activities: most of them ongoing

2 Training sessions with Competent Authorities

2 Workshops with the CMS/ACCOBAMS/ASCOBANS Joint expert group on noise



1. Awareness on noise issue at Med. region and subregional levels through results dissemination.
2. Competent Authorities engaged with the use of the ACCOBAMS joint register of impulsive noise of the Med. Region developed under QUIETMED project.
3. Joint proposal of a candidate for an impulsive noise indicator for the Mediterranean Sea Marine Region.

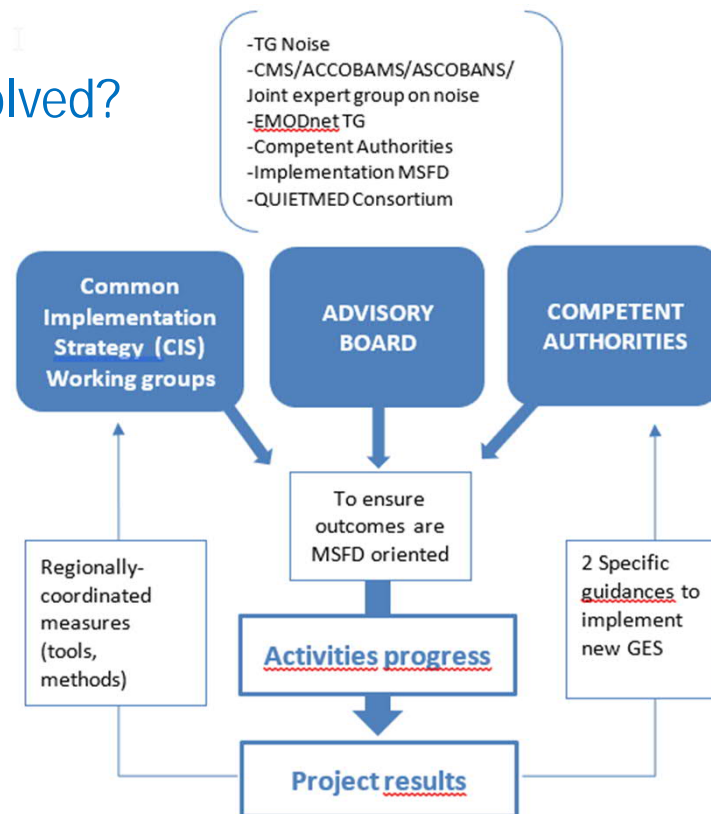
4. Establishment of a set of cetacean species in Mediterranean Sea Marine Region area according to ACCOBAMS premises and following Habitats Dir.
5. Collecting of existing data about sizes of the populations of cetaceans and their distribution for pilots in the tool.
6. Joint proposal of a methodology to establish threshold values, together with associated lists of elements and integration rules in the Mediterranean Region.

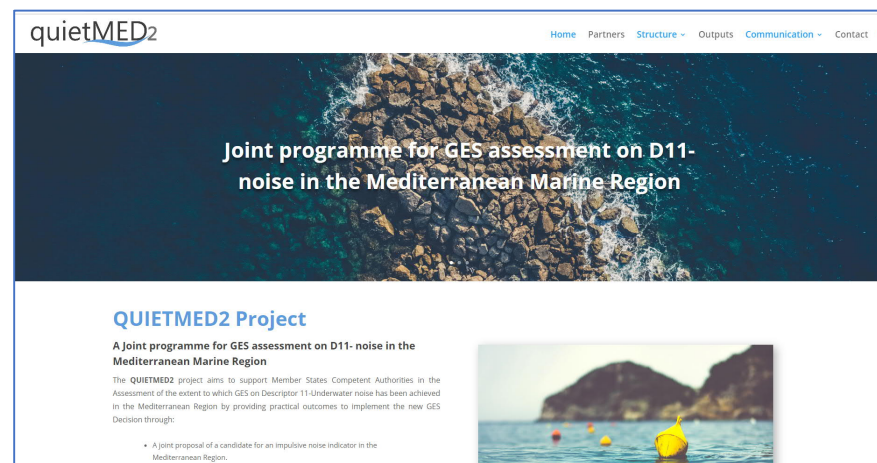


7. Elaboration & presentation of a Specific Guidance addressed to CA from MS to better implement new GES decision.
8. Elaboration & presentation of a Specific Guidance addressed to CA to establish new regionally-coordinated measures (tools, methods, results)
9. 2 training sessions with attendance of at least one representatives of all CA of the Med. Region MS.

10. A data and information tool to implement new impulsive noise monitoring programmes In the Med. Region based on the current ACCOBAMS joint register & the GES Decision.
11. Demonstration of the data and information tool to support monitoring programmes of impulsive noise.

## Who is involved?





<http://quietmed2.eu/>



@quietMED



Co-funded by the  
European Union

# quietMED2

Joint programme for GES assessment on D11-noise in  
the Mediterranean Marine Region.

Thanks for your attention!

Elen GARCIA - European Projects Office Manager

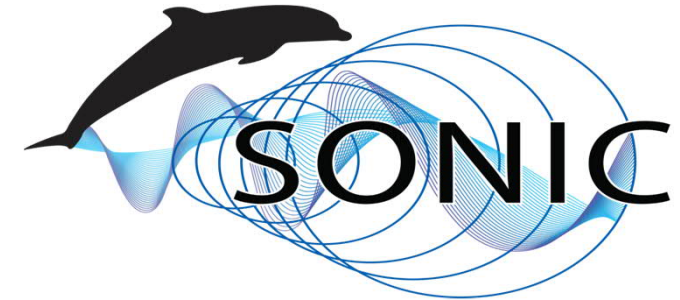
[elengarcia@ctnaval.com](mailto:elengarcia@ctnaval.com)

Marta SÁNCHEZ - Project manager

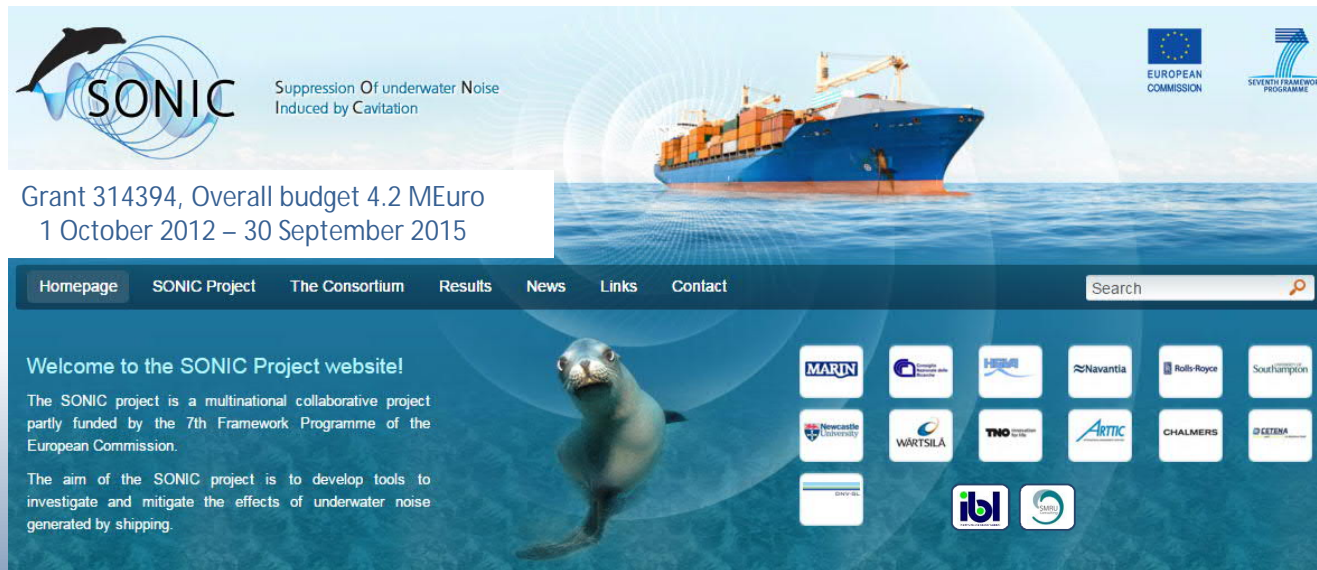
[martasanchez@ctnaval.com](mailto:martasanchez@ctnaval.com)

110661/2018/794481/SUB/ENV. C2

# Suppression Of underwater Noise Induced by Cavitation



<http://www.sonic-fp7.eu/>



The screenshot shows the SONIC Project website. At the top, there is a banner with the SONIC logo, the project title "Suppression Of underwater Noise Induced by Cavitation", and logos for the European Commission and the Seventh Framework Programme. Below the banner, a large image of a cargo ship is shown on the water. To the left of the ship, text reads: "Grant 314394, Overall budget 4.2 MEuro", "1 October 2012 – 30 September 2015". Below this, a navigation bar contains links: "Homepage", "SONIC Project", "The Consortium", "Results", "News", "Links", "Contact", and a search bar. The main content area features a "Welcome to the SONIC Project website!" message, followed by a description of the project as a multinational collaborative project funded by the 7th Framework Programme. It states the aim is to develop tools to investigate and mitigate the effects of underwater noise generated by shipping. To the right of the text is a grid of logos for the project's consortium members, including MARIN, Newcastle University, Wartsila, TNO, ibi, and others.

SONIC  
Suppression Of underwater Noise  
Induced by Cavitation

EUROPEAN  
COMMISSION  
SEVENTH FRAMEWORK  
PROGRAMME

Grant 314394, Overall budget 4.2 MEuro  
1 October 2012 – 30 September 2015

Homepage SONIC Project The Consortium Results News Links Contact

Search

Welcome to the SONIC Project website!

The SONIC project is a multinational collaborative project partly funded by the 7th Framework Programme of the European Commission.

The aim of the SONIC project is to develop tools to investigate and mitigate the effects of underwater noise generated by shipping.

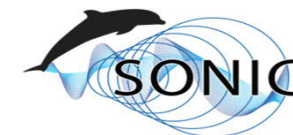
MARIN Newcastle University WARTSILA TNO ibi

Navantia Rolls Royce Southampton Arctic CHALMERS CETENA

Johan Bosschers, MARIN : [j.bosschers@marin.nl](mailto:j.bosschers@marin.nl)

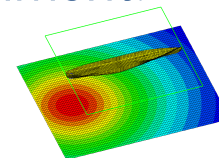


## SONIC Objectives

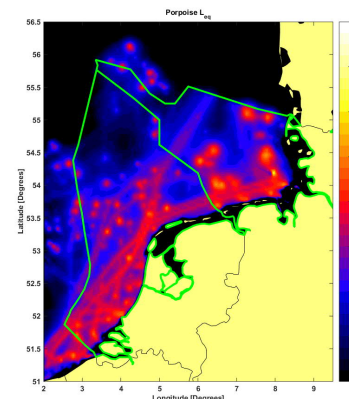


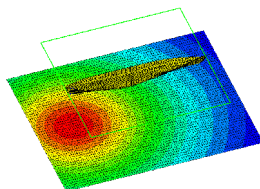
1. Assessment and mitigation of noise impacts of the maritime transport on the marine environment:

- Individual 'vessel noise footprints'
- 'Shipping noise maps'

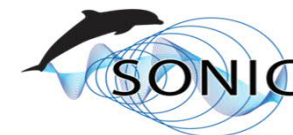


2. Support criteria on URN in MSFD GES (Descriptor 11)

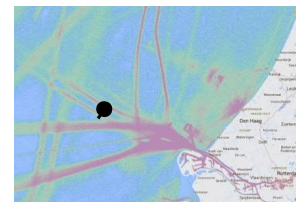
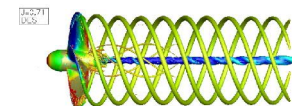




## Vessel noise footprint



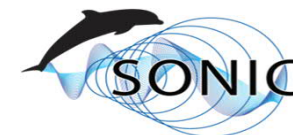
- Full-scale measurements
- Propeller cavitation noise prediction
  - Model-scale measurements
  - Numerical tools
- Case studies
  - 'VIRTUE' container vessel
  - 'STREAMLINE' tanker
  - 'Princess Royal' research vessel



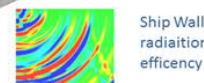
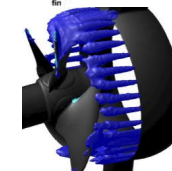
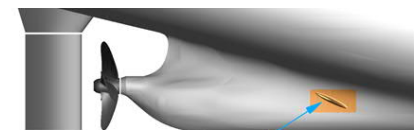




# Vessel noise footprint mitigation

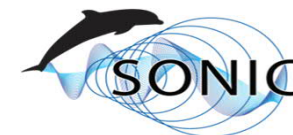


- Propeller design optimisation
  - MARIN, CETENA & UNEW
- Wake equalising devices
  - INSEAN
- Air injection techniques
  - Rolls-Royce AB
- Propeller pitch & RPM control strategies
  - Navantia & Wärtsilä
- Machinery noise control
  - Wärtsilä & Navantia

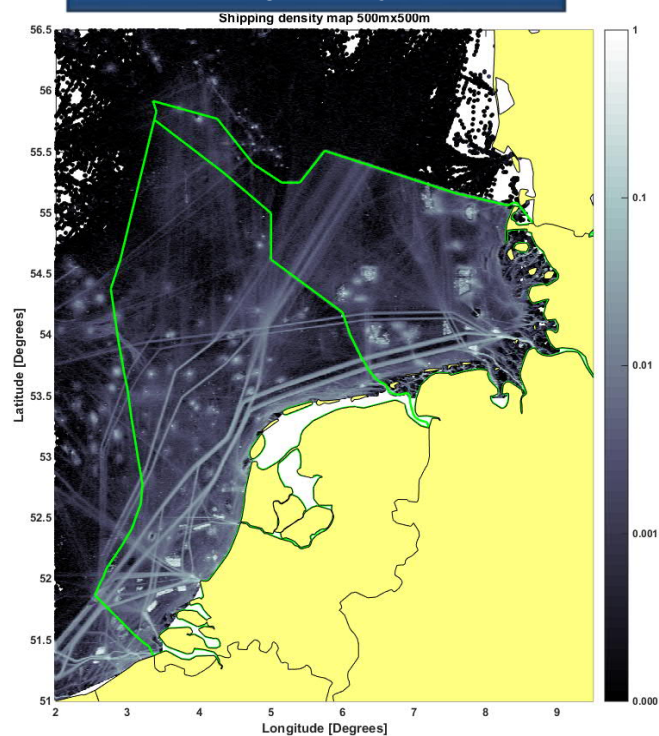




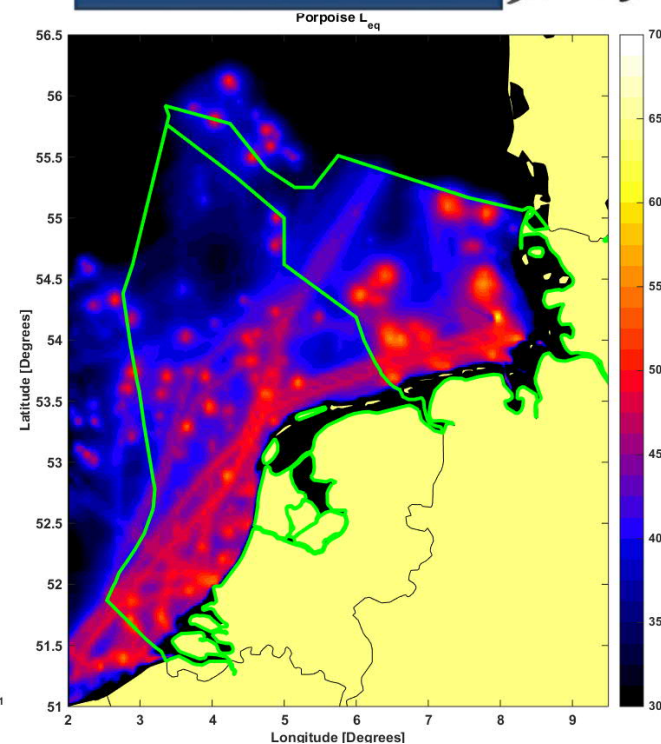
# North Sea shipping noise maps

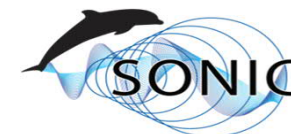


AIS: Shipping density (NL & DE)



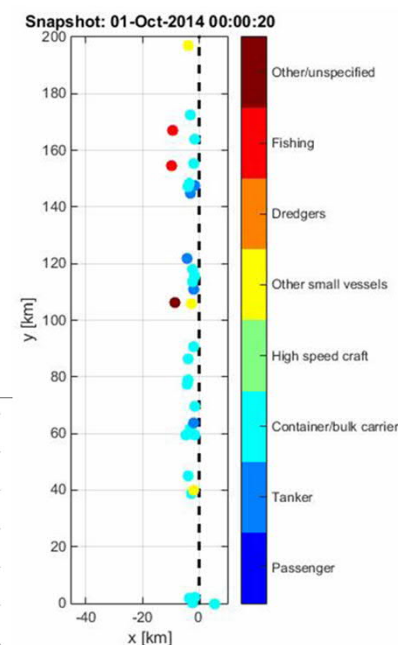
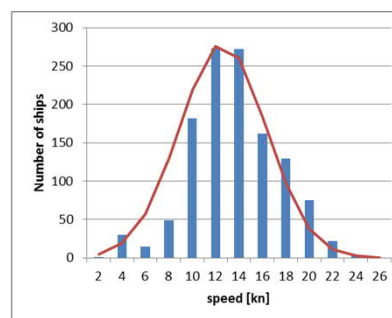
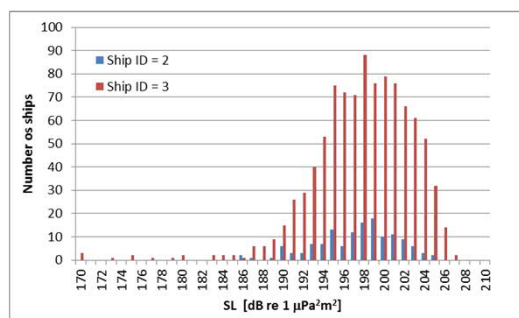
As observed by a porpoise





# Shipping noise mitigation

- Operational measures:
  - Spatial planning and vessel routing
  - Vessel radiated noise limits
  - Vessel speed limits



## Summary report:

### GUIDELINES FOR REGULATION ON UW NOISE FROM COMMERCIAL SHIPPING

PREPARED BY



ACHIEVE QUIETER OCEANS BY SHIPPING NOISE FOOTPRINT REDUCTION

FP7-GRANT AGREEMENT NO. 314227

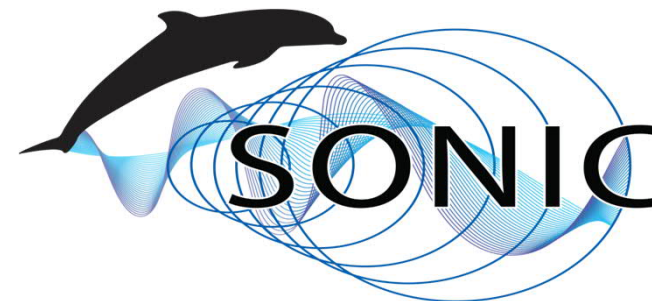


SUPPRESSION OF UW NOISE INDUCED BY CAVITATION

FP7- GRANT AGREEMENT NO.314394

SONIC Deliverable 5.4

Revision 4.3  
Date 30 November 2015  
Prepared by Bureau Veritas, DNV GL



Thank you for your attention!



<http://www.sonic-fp7.eu/>

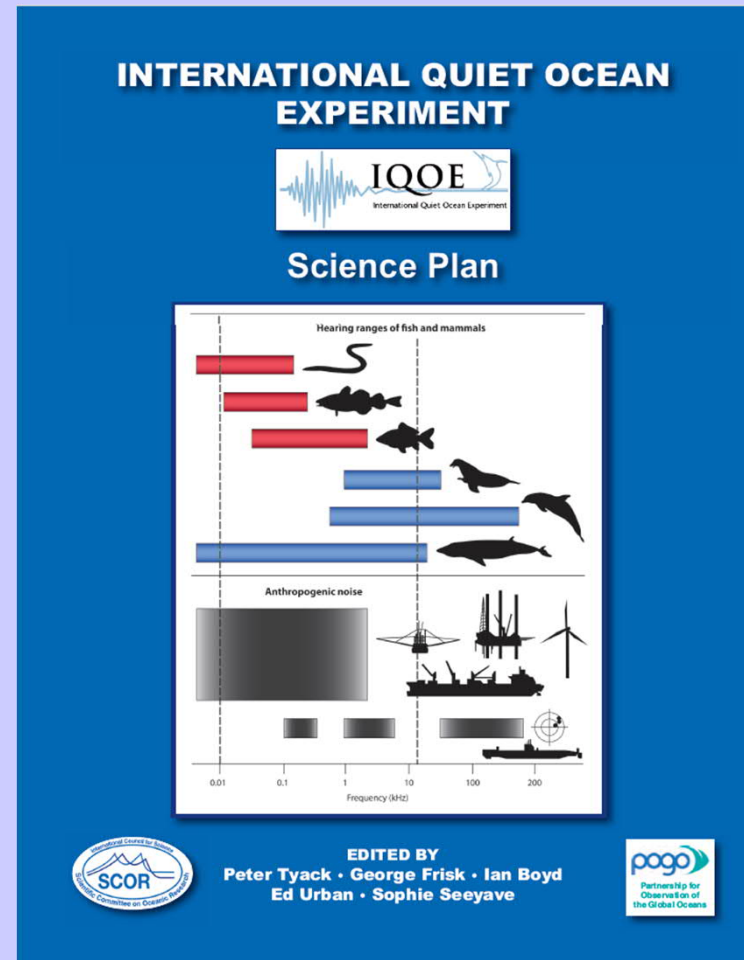
# The International Quiet Ocean Experiment and its Working Groups





**An international scientific  
program  
to promote research,  
observations, and  
modelling  
to improve understanding  
of ocean soundscapes  
and effects of sound on  
marine organisms.**

*established in 2016*



## **5 fundamental questions:**

1. Have human activities affected the global ocean soundscape compared with natural changes over time?
2. What are the current levels and distribution of anthropogenic sound in ocean?
3. What are the trends in anthropogenic sound levels across the global ocean?
4. What are the current effects of anthropogenic sound on important marine animal populations?
5. What are potential future effects of sound on marine life?

IQOE is designing its activities to answer these questions.



## IQOE-Endorsed Projects

The IQOE Science Committee endorses national and regional projects that conduct research and observations relevant to IQOE goals. There are currently 7 IQOE-endorsed projects:

1. **ADEON**: Atlantic Deepwater Ecosystem Observatory Network (2016-2021)
2. **JOMOPANS**: Joint Monitoring Programme for Ambient Noise North Sea (2018-2020)
3. **JONAS**: A Joint program for Ocean Noise in the Atlantic Seas
4. **PHYSIC**: Ports, Humpbacks, Y Soundscapes In Colombia
5. **QUIETMED2**: Joint programme for GES assessment on D11-noise in the Mediterranean Marine Region
6. **SanctSound**: NOAA Navy Sanctuary Soundscape Monitoring Project
7. **TANGO**: Rerouting shipping lanes in the Kattegat – effects on soundscape and ecosystem



## **IQOE Working Groups (WGs)**

- The IQOE Science Committee created a set of working groups (WGs) to address more specific topics. Some WGs crosscut the entire project to provide central functions:
  - WG on Standardization
  - WG on Marine Bioacoustical Standardization
  - WG on Data Management and Access
- Other WGs focus on specific systems:
  - WG on Acoustic Measurement of Ocean Biodiversity Hotspots
  - WG on Arctic Acoustic Environment

[www.iqoe.org](http://www.iqoe.org)

[IQOE Newsletter #3](#)

[IQOE Newsletter #3 is now available.](#)

[More news](#)

# THE INTERNATIONAL QUIET OCEAN EXPERIMENT (IQOE)

is an international scientific program to promote research, observations, and modelling to improve understanding of ocean soundscapes and effects of sound on marine organisms.

[Project Rationale](#)

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