

**PREFECTURA  
NAVAL ARGENTINA  
AUTORIDAD MARÍTIMA**

**ARGENTINE COAST GUARD**

# **UNDERWATER RADIATED NOISE**

October 15 - 16 , 2024 – MALMO, SWEDEN



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## **UNDERWATER RADIATED NOISE**

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**Global Partnerships for Mitigation of  
Underwater Noise**

October 15 - 16 , 2024 – MALMO, SWEDEN

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# IMO – Prefectura Naval Argentina



- Prefectura Naval Argentina, as a member state of the IMO, studies the feasibility and adopts the new Guidelines
- As Maritime Authority, is responsible for enforcing the regulations through the Ordinances in force in the corresponding areas.



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**Ministerio de Seguridad**  
República Argentina

# GLONOISE PROJECT

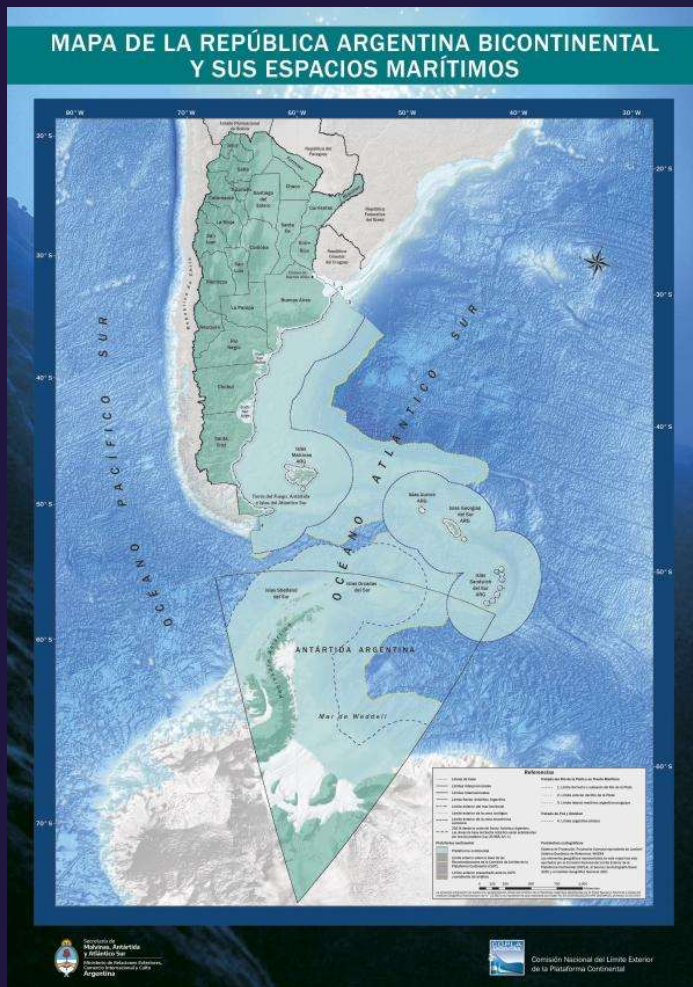
- The overall objective of the GloNoise Partnership project is to establish a truly global stakeholder partnership, with a strong focus on developing countries, to address key environmental issues related to underwater noise from shipping. The specific objective of the project is to help developing countries and regions raise awareness, build capacity and collect information to contribute to the policy dialogue on anthropogenic underwater noise mitigation.



# BENEFICIARY COUNTRIES

Following countries are part of the project:

- Lead Pilot Countries: Argentina, Chile, Costa Rica, India, Trinidad and Tobago, South Africa,
- Twinning Countries: Georgia, Madagascar, Malaysia.



## UNDERWATER RADIATED NOISE

### MARINE PROFILE OF THE COUNTRY

#### TERRITORY

- Land area:** 2.780.400 km<sup>2</sup>
- Maritime area:** 4.800.000 km<sup>2</sup>
- Continental shelf area:** 1.800.000 km<sup>2</sup>
- Maritime coasts:** 5.000 km
- Fluvial coasts:** 4.800 km

*In North Area, Grain Ports are located.*

- Port of San Lorenzo and Rosario

*In Center Area, the main Container, Grain and Oil Ports are concentrated.*

- Port of Buenos Aires
- Port of Bahía Blanca
- Port of Quequén

*In South Area (Partagonia) strong fishing activity is performed.*

- Puerto Madryn and Puerto Deseado (Fishing Ports)
- Comodoro Rivadavia (Oil Port)

*Each port with corresponding Anchoring Area.*

*In view of this scenario, many private Organizations are performing the UWR Noise measurements.*



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## **REGULATORY FRAMEWORK**

- National Constitution
- UNCLOS Convention
- MARPOL Convention
- Adherence to International Conventions on Pollution Prevention.
- General Environmental Law
- Organic Law of PREFECTURA NAVAL ARGENTINA
- Law on the National System of Marine Protected Areas.
- Law on Minimum Environmental Standards for the Preservation of Waters.
- Regime of Maritime, Fluvial and Lake Navigation. (REGINAVE).





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● **ON GOING ASSESSMENT :**

Demarcation of sensitive areas for marine fauna:

- Cethus Foundation + National Institute for Fisheries Research and Development (INIDEP) + National Patagonian Centre (CENPAT) + Centre for the Study of Marine Systems (CESIMAR)
- Studies on hydroacoustics and survey of marine protected areas.
- Analysis of the distribution of cetaceans at present.
- Acquisition of hydroacoustic equipment to continue and increase research in designated areas.
- Workshops with port authorities to raise awareness on underwater noise reduction and to develop joint proposals to comply with current IMO regulations and those of other international bodies.



## UNDERWATER RADIATED NOISE FROM MARINE TRAFFIC

### MAIN SOURCES OF UWR NOISE

#### PROPELLERS

The noise is transmitted when the low pressure generated by the propeller causes thousands of small bubbles. When bubbles collapse, the sound produced is a major source of noise. known as "cavitation", it accounts for 80-85% of a ship's noise.

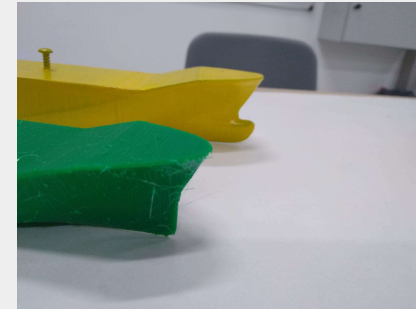
#### MACHINEY INSTALLATIONS

Diesel engines are an important source of noise due to vibrations that radiate through the ship's hull. Ships cause different levels of noise depending on the type of ship, its design, speed, hull and propeller maintenance, and other factors.

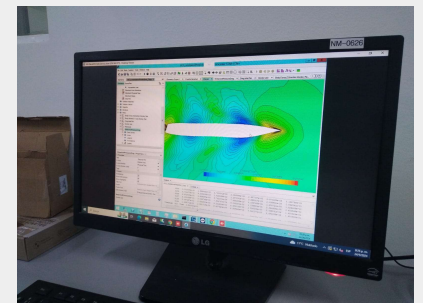
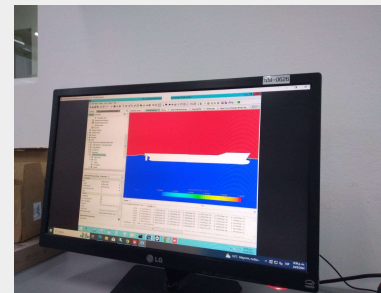


# TECHNOLOGICAL NATIONAL UNIVERSITY (UTN)

## Naval Engineer Laboratory



- *Naval Engineer Laboratory equipped with Towing Tank, 3D-printed Models and CFD Software.*

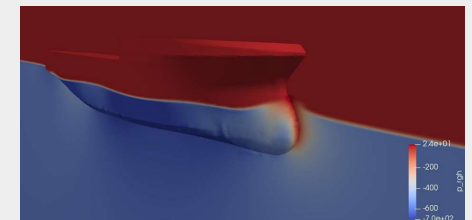




# BUENOS AIRES UNIVERSITY

## Naval and Oceanic Hydrodynamics Laboratory

*Predicting the hydrodynamic behaviour  
of ships and marine installations  
from the results of physical (EFD)  
and numerical (CFD) experiments.*





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- ✓ ***Installation of engines and propellers:***
  - ***It can be solved by design changes to the propeller and hull, with the use of new technology to improve water flow reduction.***
  - ***Installing the engine on mounts mitigates noise transmission through the hull.***
  - ***Maintaining the hull and propeller as per original condition to avoid the accumulation of aquatic organisms.***

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*Thank you!*



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