

THE ROLE OF SHIP SPEED REDUCTION IN THE PROTECTION OF LARGE WHALES IN THE MEDITERRANEAN CETACEAN MIGRATION CORRIDOR



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Tuesday 9 July 2024

Fundación Biodiversidad, Madrid, Spain

Isolated sub-populations



Large whale species in the Mediterranean Sea:
Fin whales & sperm whales

IUCN Red List Status in the Mediterranean Sea

Fin whales: Endangered
CMS: Appendix I & II

Sperm whales: Endangered
CMS: Appendix I & II



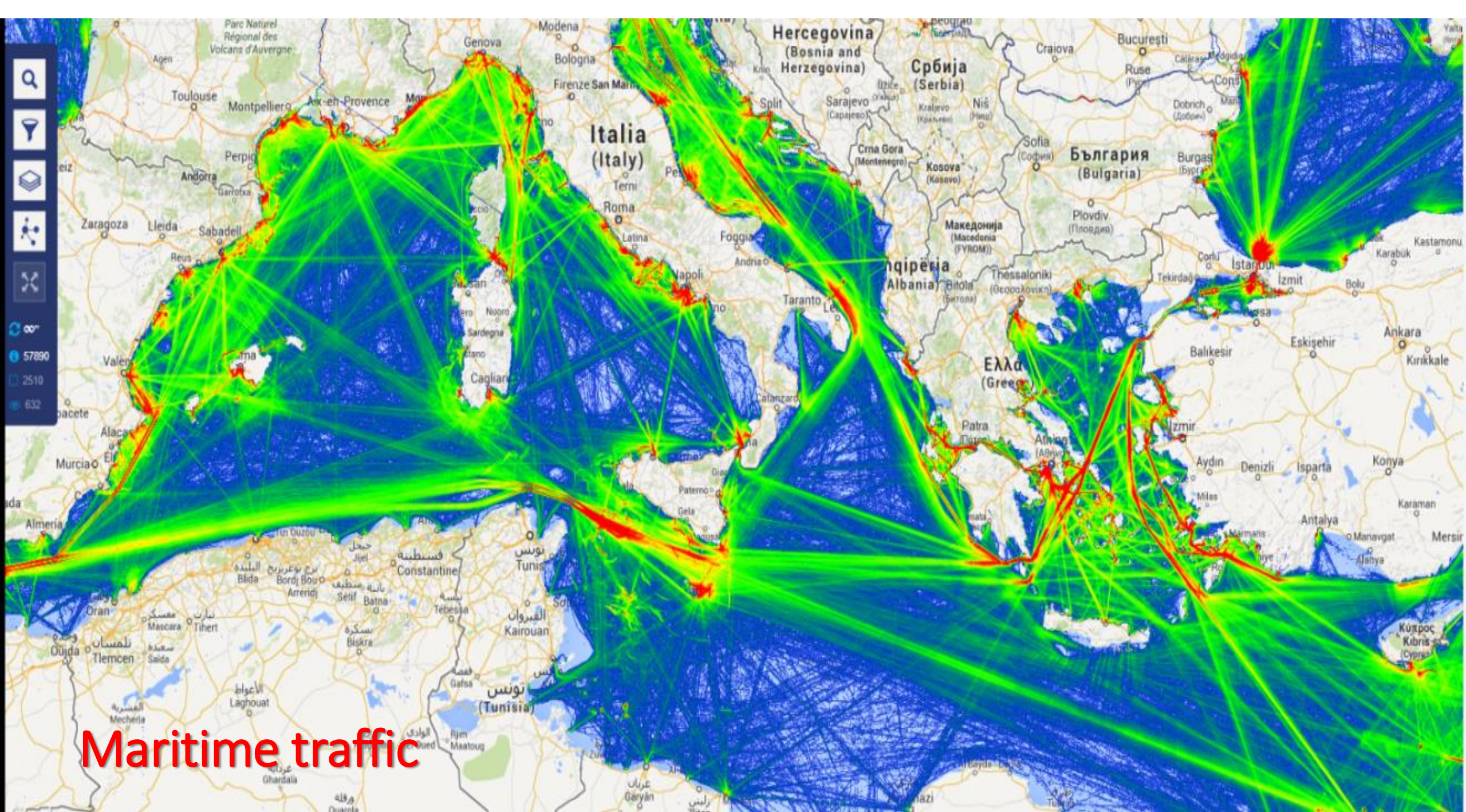
Human pressures



Marine life and biodiversity are heavily threatened by:

- fisheries
- water pollution
- coastal anthropization
- climate change
- **ship traffic**





HIGH-RISK AREAS FOR SHIP STRIKES IN THE MEDITERRANEAN SEA



Collisions with marine mammals

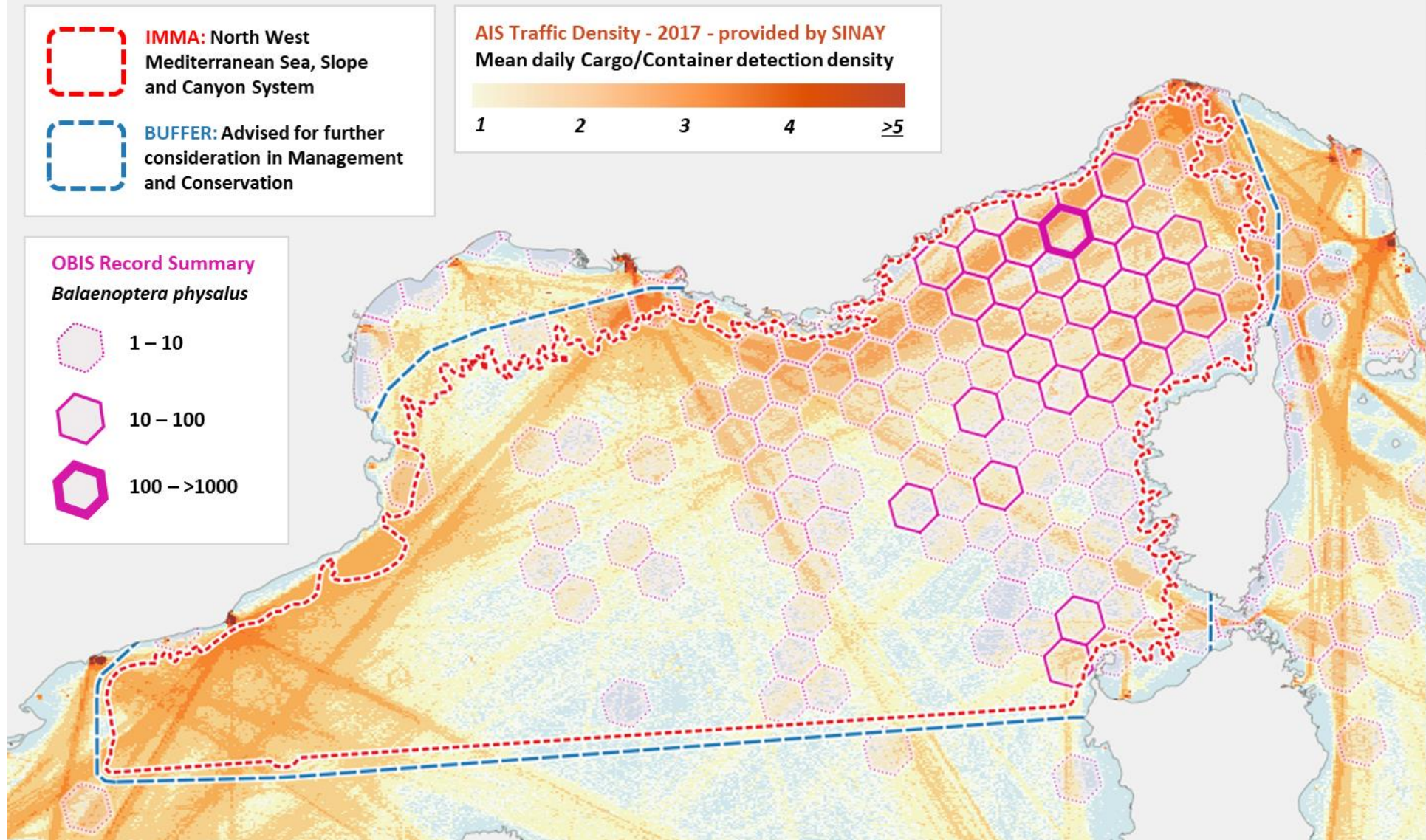


IMMAs and ship strikes

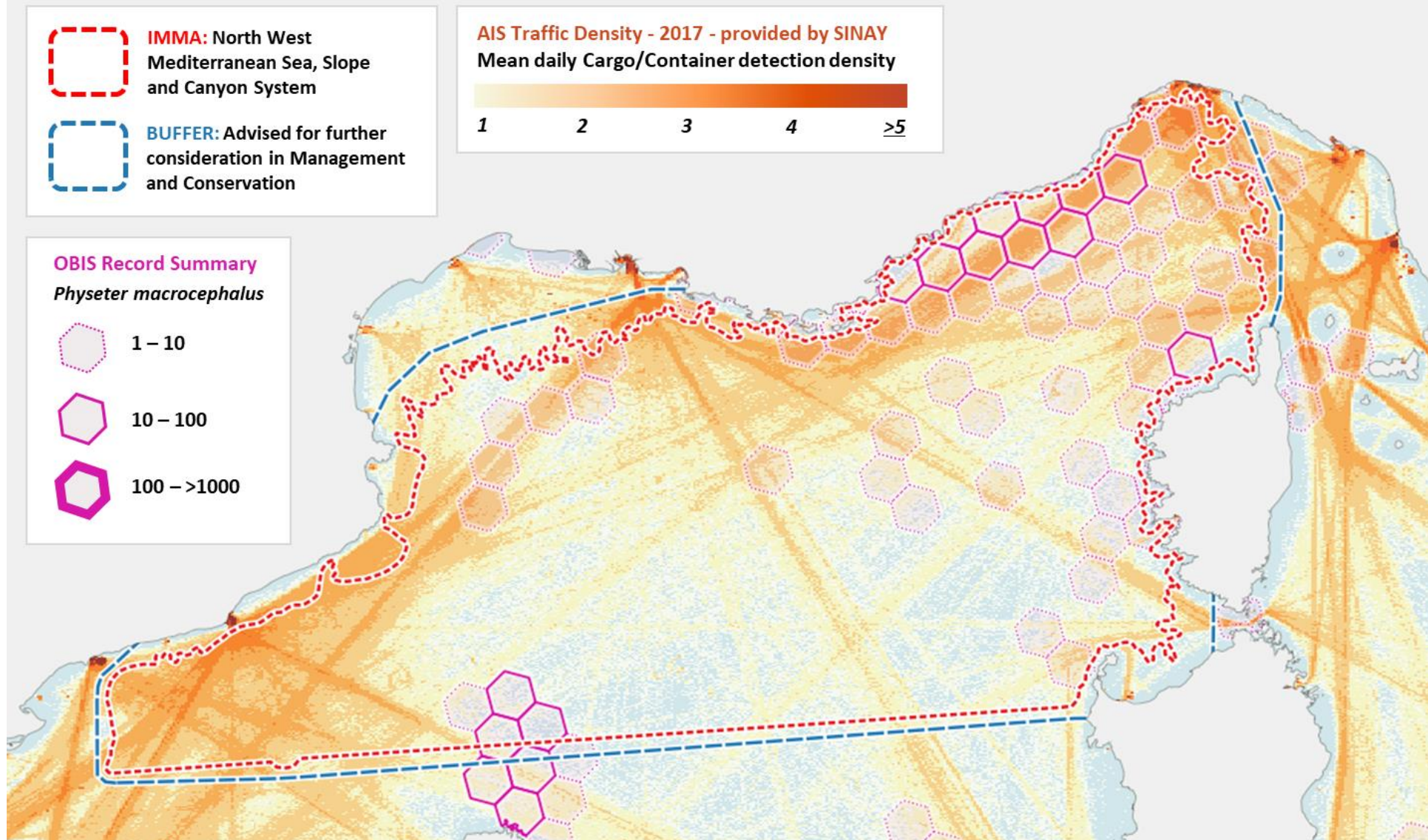


- Ship strikes involving large cetaceans represent a **worldwide problem**, causing both temporary and lethal wounds, with concern about the high collision rates reported for the **isolated and endangered sub-populations** of fin and sperm whales in the Mediterranean.
- High risk areas are defined as whale high density areas intersected by high traffic levels.
- Important Marine Mammal Areas (IMMAs) can be used to indicate areas with **higher likelihood of ship strikes**, by overlapping shipping routes using Automatic Identification System (AIS) data.
- The first IMMA workshop organized in 2016 in collaboration with ACCOBAMS in the Mediterranean Region identified a total of 26 IMMAs, of which **eight have large whales** (fin and sperm whales) **as primary species**.





The tracks covered by cargo/container vessels in 2017 and fin whale sightings in the North West Mediterranean Sea, Slope and Canyon System IMMA.



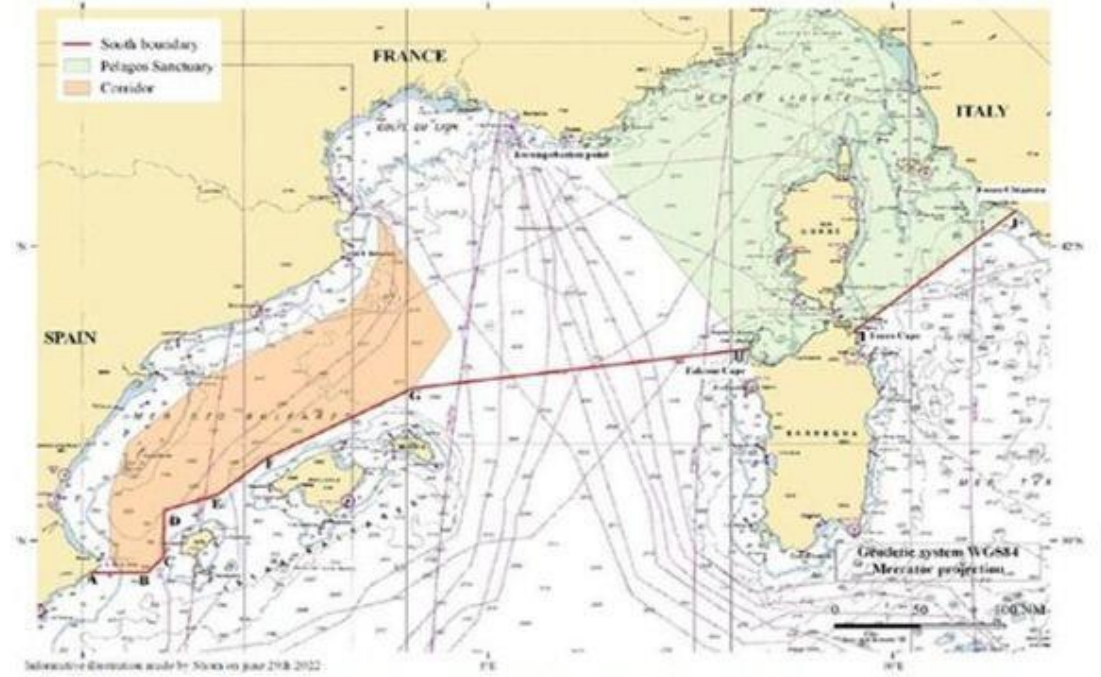
The tracks covered by cargo/container vessels in 2017 and sperm whale sightings in the North West Mediterranean Sea, Slope and Canyon System IMMA.

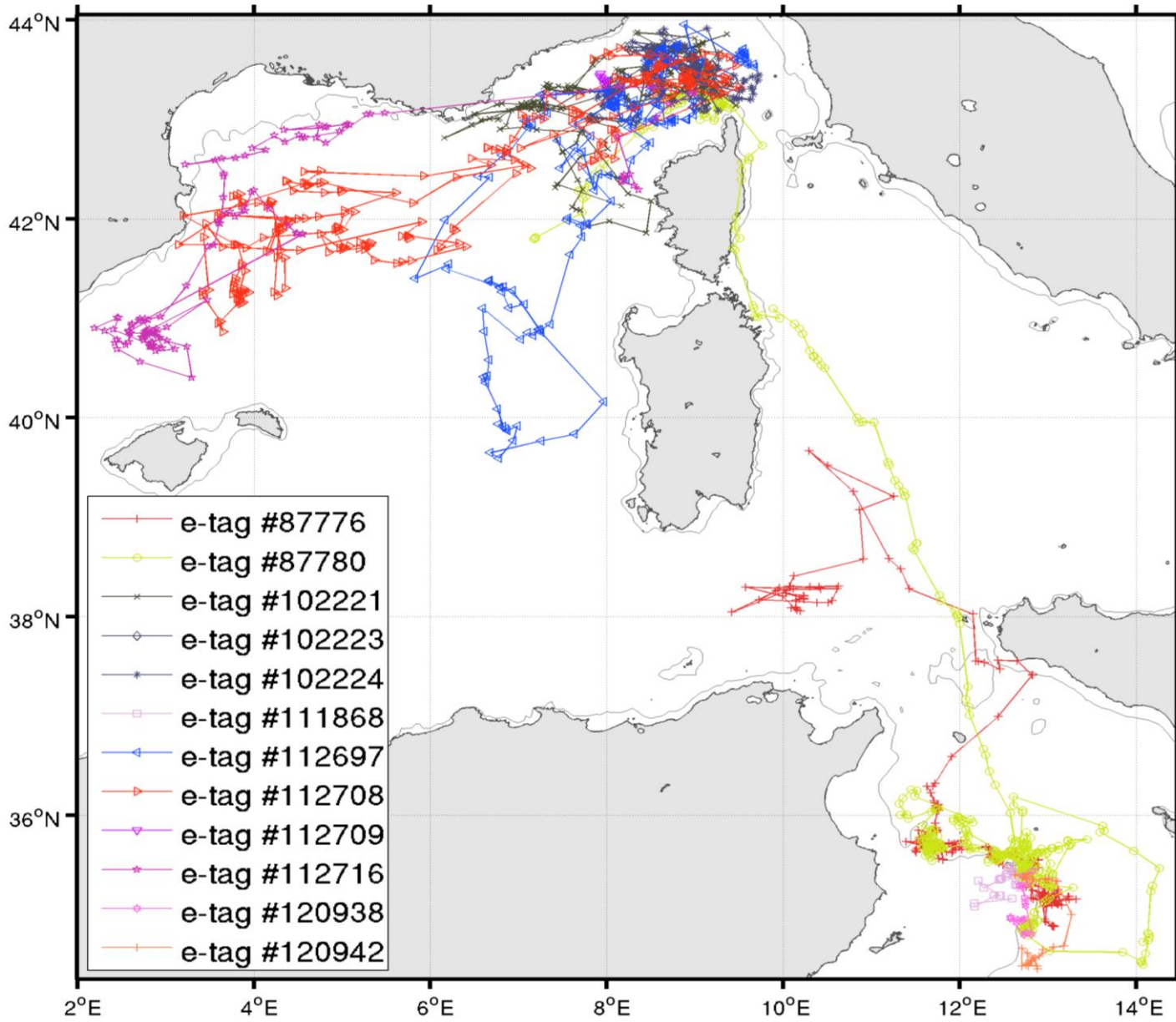
Particularly Sensitive Sea Area (PSSA)



France, Italy, Monaco and Spain have developed and supported the process for the designation of a **Particularly Sensitive Sea Area** PSSA by the International Maritime Organization (**IMO**) at a scale that includes the North-West Mediterranean Sea, Slope and Canyon IMMA, plus the Eastern portion of the Pelagos Sanctuary and the **Spanish Migration Corridor**, to take into account whale population movements and distribution.

The proposal has been accepted by the IMO in June 2023 and strike mitigation tools (e.g., **speed reduction** and **routing measures**) have been proposed as part of Associated Protective Measures (APM) within the PSSA.





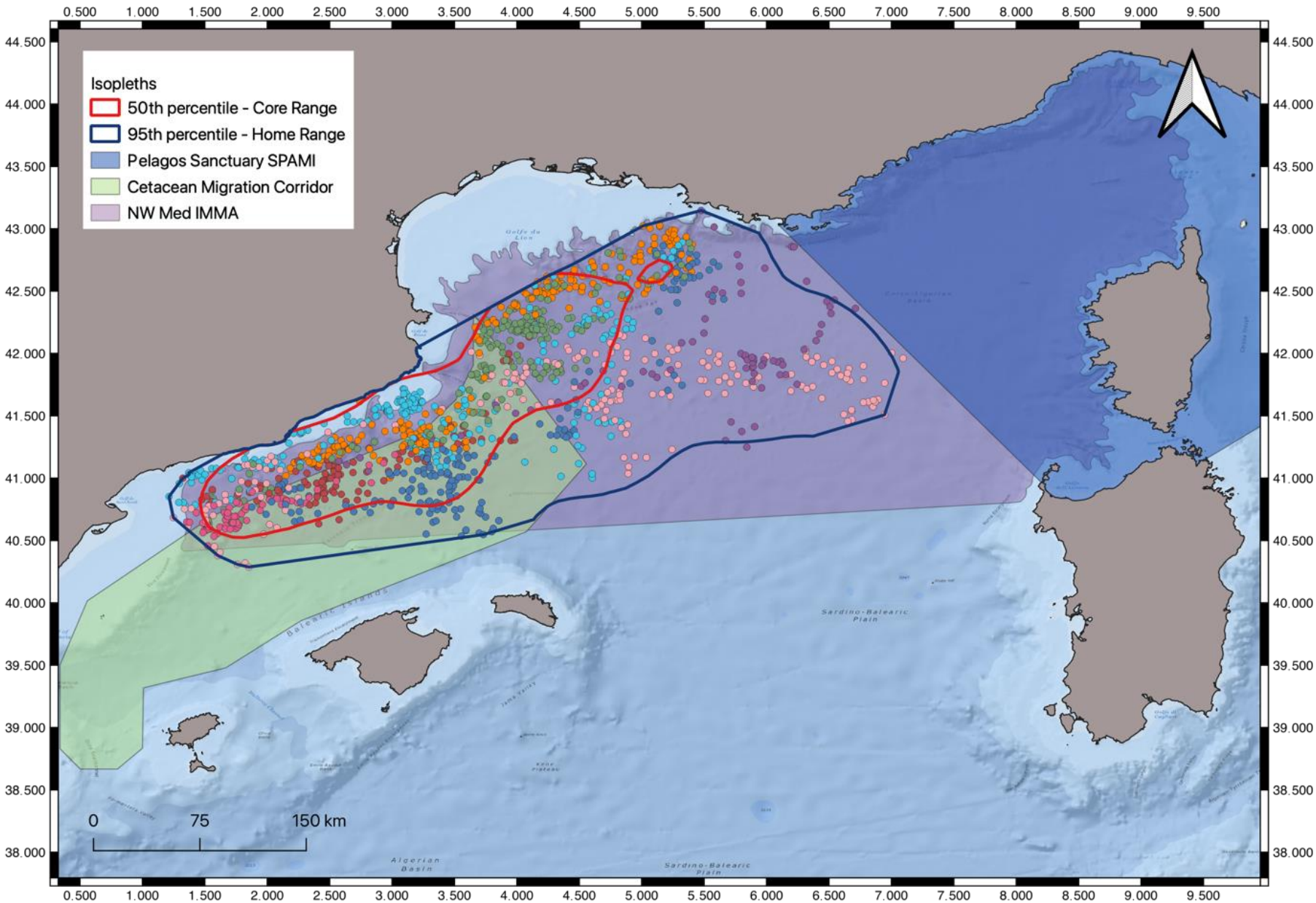
www.nature.com/scientificreports

SCIENTIFIC REPORTS

OPEN Satellite tagging of Mediterranean fin whales: working towards the identification of critical habitats and the focussing of mitigation measures

Received: 2 June 2016
 Accepted: 1 May 2017
 Published online: 13 June 2017

Simone Panigada¹, Gregory P. Donovan², Jean-Noël Druon³, Giancarlo Lauriano⁴, Nino Pierantonio⁵, Enrico Pirotta⁶, Margherita Zanardelli¹, Alexandre N. Zerbini^{6,7,8} & Giuseppe Notarbartolo di Sciarra¹



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Research



Cite this article: Panigada V, Bodey TW, Friedlaender A, Druon J-N, Huckstädt LA, Pierantonio N, Degollada E, Tort B, Panigada S. 2024 Targeting fin whale conservation in the North-Western Mediterranean Sea: insights on movements and behaviour from biologging and habitat modelling. *R. Soc. Open Sci.* **11**: 231783. <https://doi.org/10.1098/rsos.231783>

Targeting fin whale conservation in the North-Western Mediterranean Sea: insights on movements and behaviour from biologging and habitat modelling

Viola Panigada^{1,2}, Thomas W. Bodey², Ari Friedlaender³, Jean-Noël Druon⁴, Luis A. Huckstädt⁵, Nino Pierantonio¹, Eduard Degollada⁶, Beatriu Tort⁶ and Simone Panigada¹

HOW TO AVOID VESSEL COLLISIONS WITH LARGE WHALES?

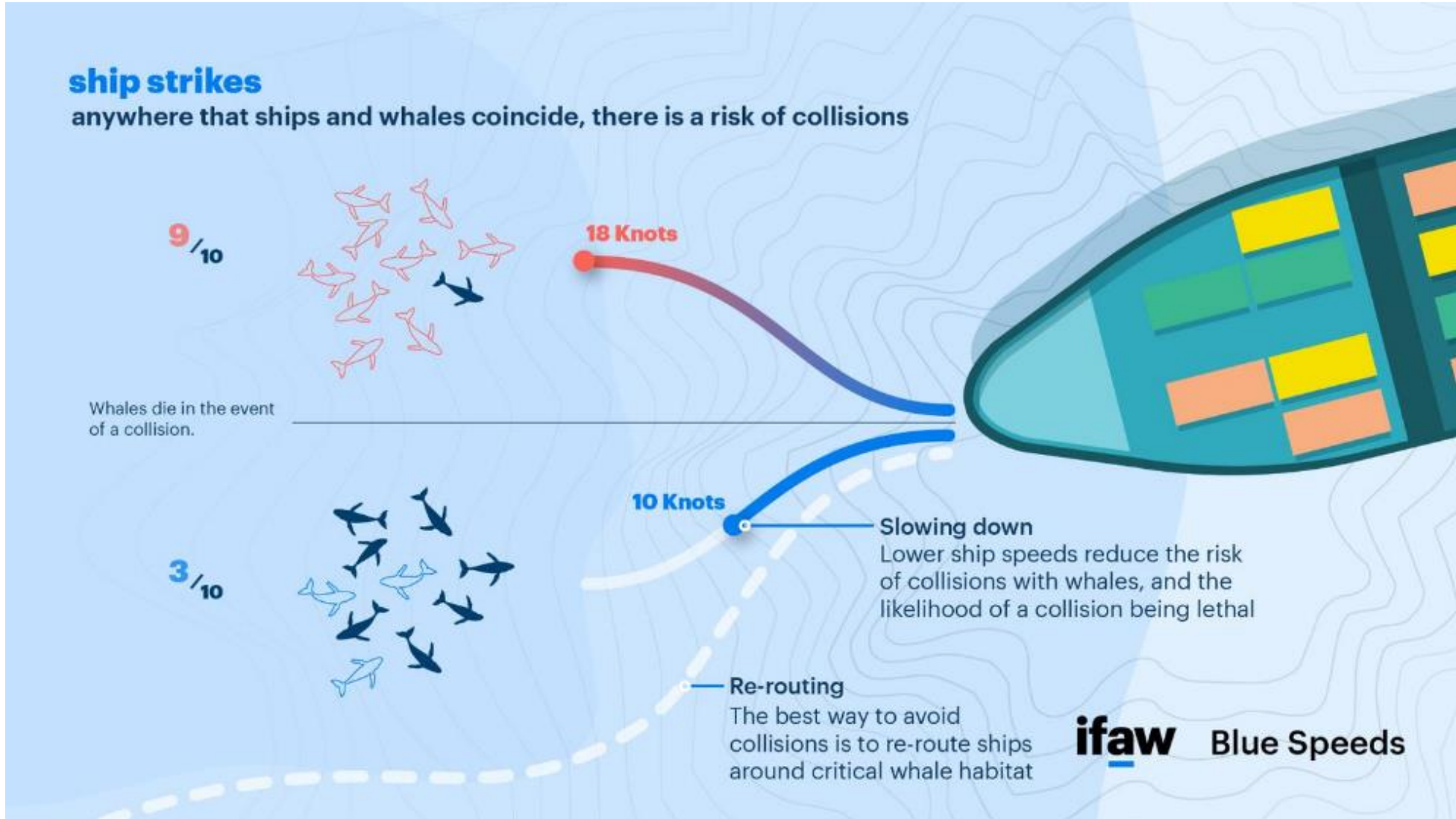


ACCOBAMS Resolution 8.18 on SHIP STRIKES

Recalling that mitigation measures for ship strikes ... :

- the **most effective measures** are those that **separate whales from vessels** (or at least minimize co-occurrence) **in space and time, where such measures are possible** (using, inter alia, routing schemes),
- where routing to keep whales and vessels apart is not possible, **the only demonstrated measure to reduce fatal collisions with most large whales is to reduce speed.**

IFAW Blue Speeds

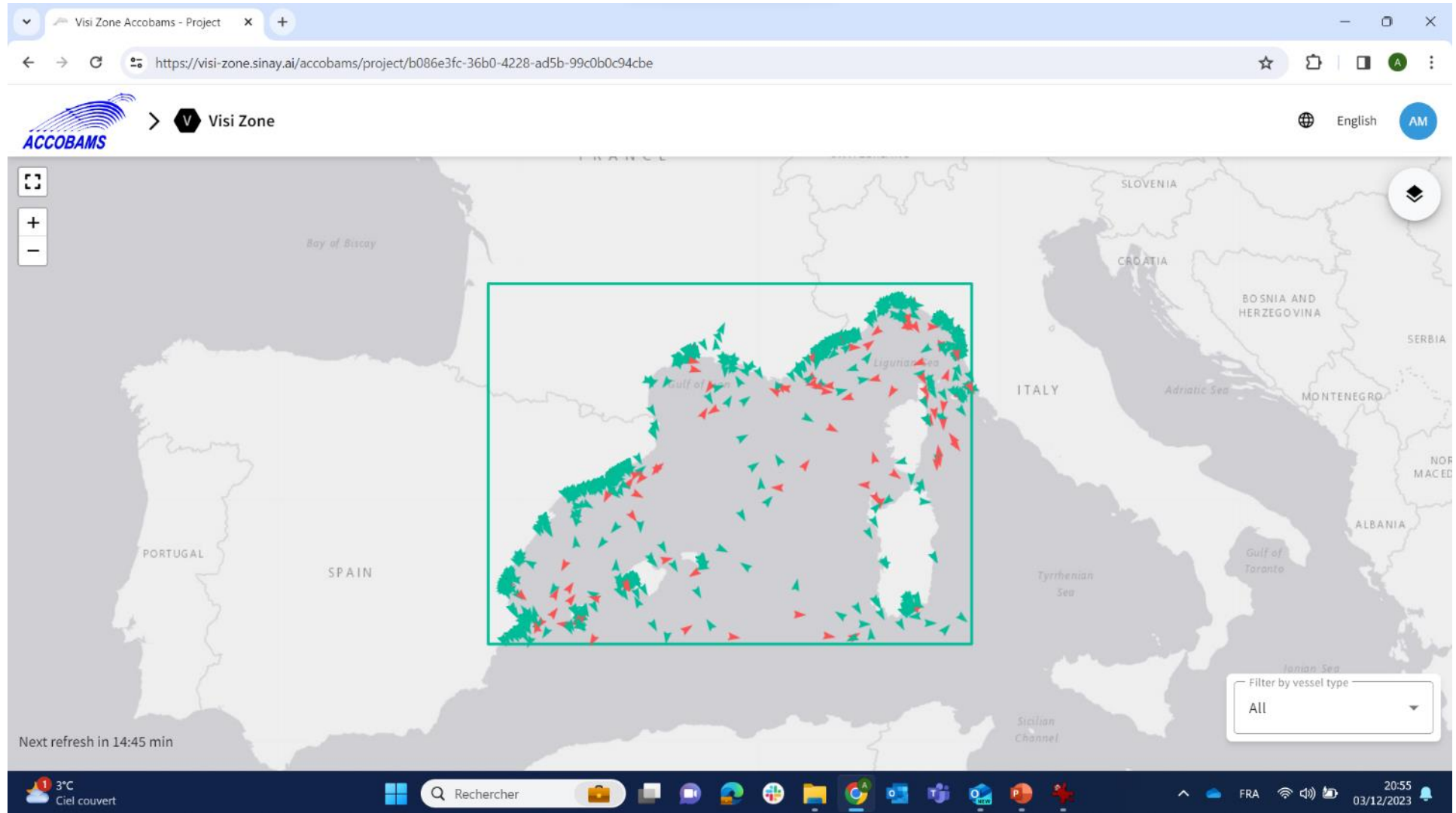


PLATFORM

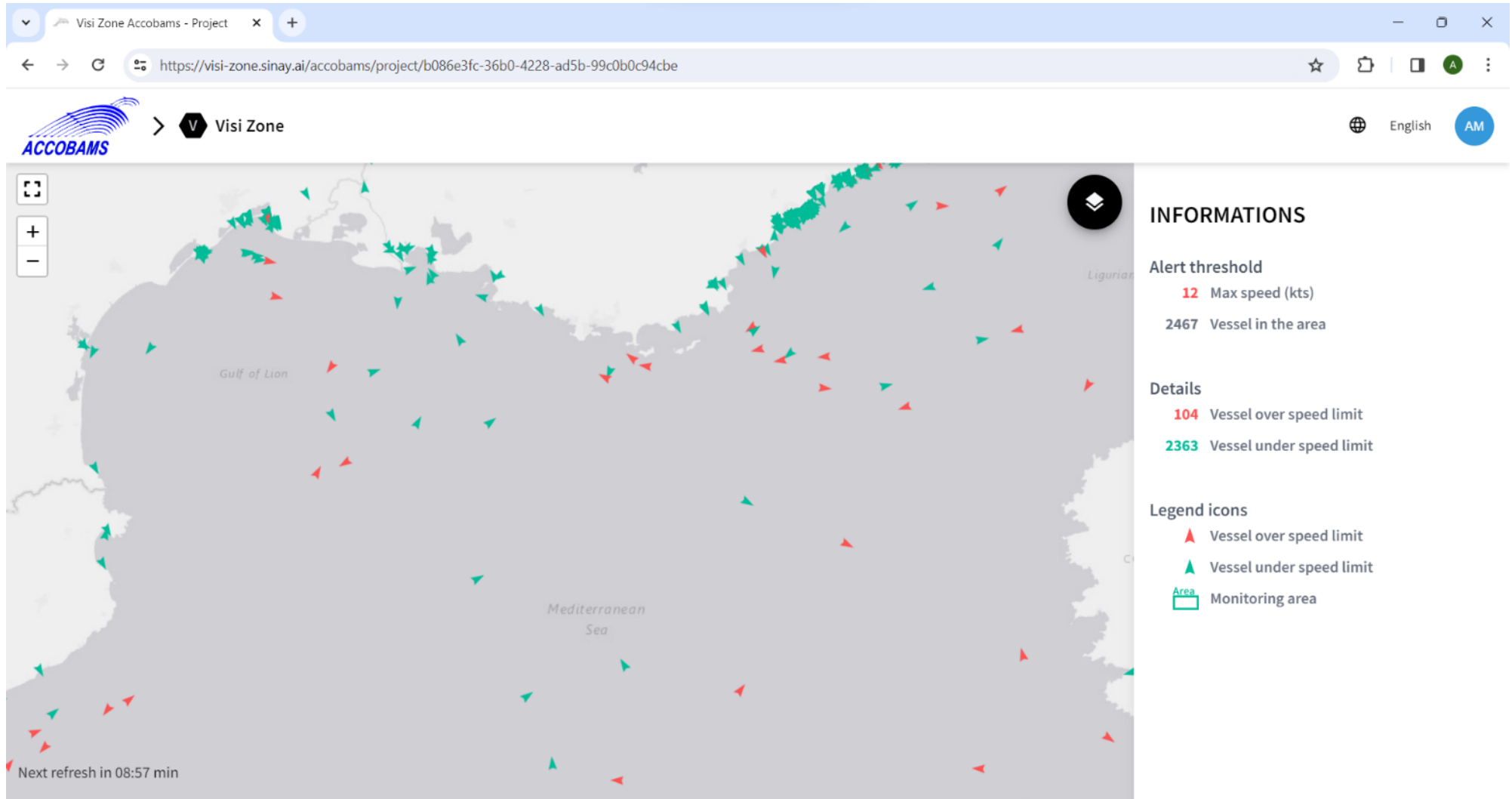


The screenshot shows a web browser window with the URL `https://hub.sinay.ai/accobams/home`. The page features a navigation menu with 'Home', 'Modules', 'Projects', and 'News'. A search bar is located at the top right. The main content area has a large blue background image of a whale's tail. The text 'Welcome to NETCCOBAMS, Alessio' is displayed in white. Below this, there is a 'Modules' section with icons for 'Acoustic map', 'Visi Fleet', and 'Visi Zone', along with a 'SEE ALL MODULES' link. A description for the 'Acoustic map' module is provided: 'A statistics module showing statistics about underwater noise levels and cetacean presence.' There are 'Open module' and 'Learn more >' buttons. At the bottom, a 'Recent Projects' section displays a row of five images: a group photo of people outdoors, a group photo with a sign, a group photo of people standing, a group photo of people standing, and a grid of video conference participants. A 'View all >' link is located at the end of the row.

SHIP TRAFFIC VISIZONE



SHIP TRAFFIC VISIZONE



SHIP TRAFFIC VISIZONE



> **Visi-zone**



INSCRIPTION

CONNEXION



Area dashboard

Aug 21, 2020 - Sep 21 2020

DOWNLOAD REPORT

SHARE

Vessels in area

321

Total excess

563

Percent of vessels

11%

Co2 emitted

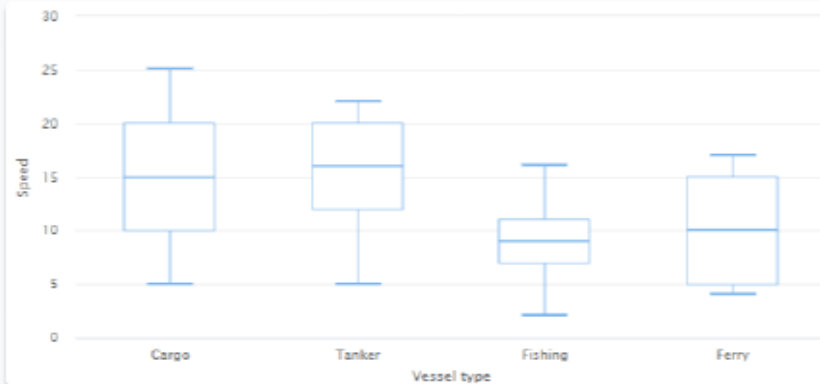
12 652t

Average time

5D 3H

Average speed

13 kts



Vessels list

| MMSI | Vessel name | Vessel type | Time in area | Average speed | Max speed |
|------|---------------|-------------|--------------|---------------|-----------|
| 1248 | Aniara | Cargo | 16h30min | 11 kts | 20 kts |
| 1259 | Asian vision | Cargo | 3d 10h | 9 kts | 15 kts |
| 1167 | Carmen | Tanker | 5h 30min | 5 kts | 5 kts |
| 1056 | Don Juan | Other | 2d 5h | 2 kts | 11 kts |
| 1302 | Fidellio | Tanker | 10d 19h | 20 kts | 25 kts |
| 1218 | Liberty | Cargo | 1d 3h | 13 kts | 16 kts |
| 1107 | Manon | Le Cargo | 2d 20h | 5 kts | 9 kts |
| 1247 | Parsifal | Cargo | 1h 15min | 10 kts | 10 kts |
| 1354 | Talia | Tanker | 25d 2h | 0 kts | 0 kts |
| 1065 | Aaron Stanton | Other | 15d 23h | 0 kts | 0 kts |





- It is crucial to better understand fin whales' **avoidance strategies** in response to oncoming traffic.
- **Reducing speed** looks like the most effective Associated Protective Measure to be fully implemented in the recently established **Particularly Sensitive Sea Area (PSSA)** in the North-Western Mediterranean Sea.
- Important data for **fin whale's CMP**.
- Preventative measures should be considered at the Regional scale **and possibly beyond**.

CONCLUSION



Vessel speed reduction:

- results in multi-environmental benefits,
- is the most effective measure to reach the objectives of the PSSA,
- is the most cost effective measure to become implemented immediately,
- if mandatory, it would create a level playing field,
- importance of compliance.

