

# **Regional case studies: the Mediterranean Sea and Canary Islands**



**Joint IWC-ACCOBAMS workshop on  
reducing risk of collisions between vessels and cetaceans**

Beaulieu sur Mer, 21-24 September 2010

**Simone Panigada, Elisabetta Remonato**

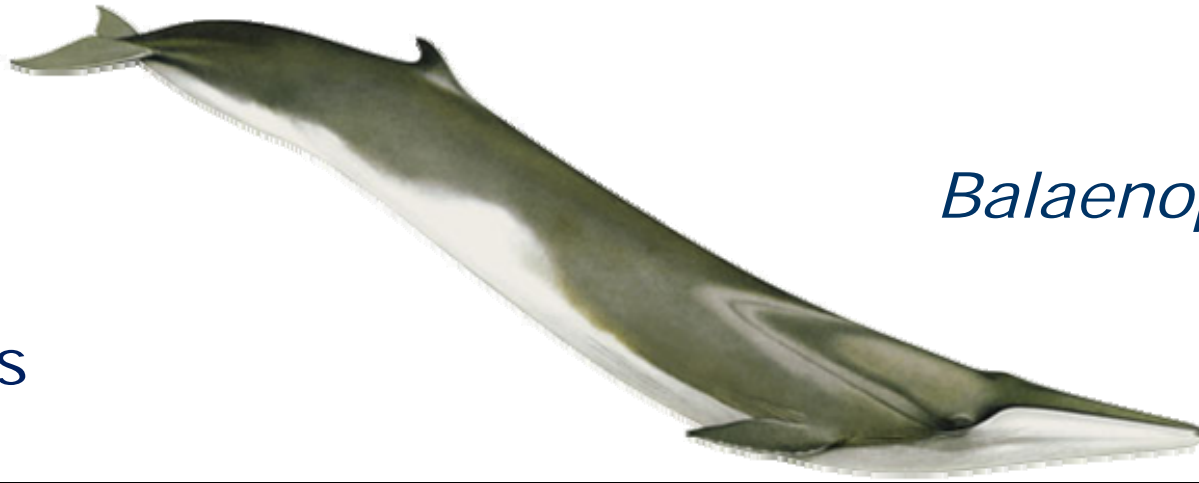
# Acknowledgements



**Ministero dell'Ambiente e  
della Tutela del Territorio e  
del Mare**







# Fin whale

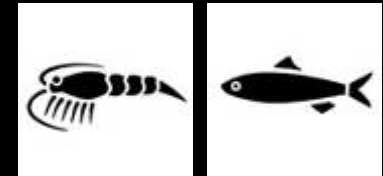
*Balaenoptera physalus*

24 m  
70 tons



regular    occasional    ? unknown

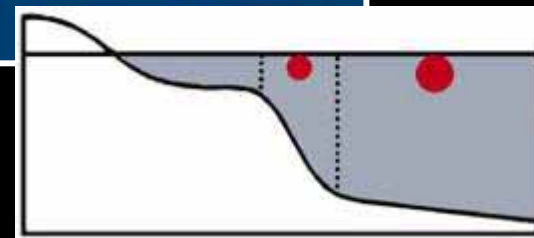
habitat



preys



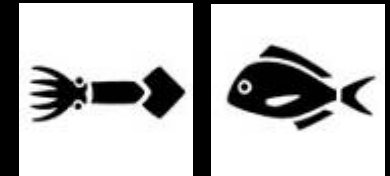
threats



# Sperm whale

*Physeter macrocephalus*

18 m  
50 tons

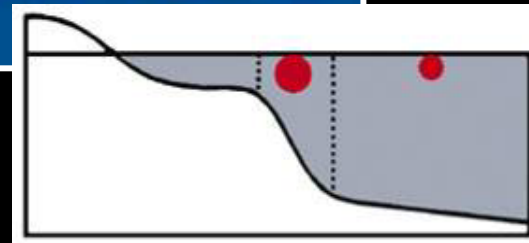


preys



threats

habitat



Species / subspecies	Unit	IUCN criterion		Status		Notes	Assessor/s
				Past trend	Present trend		
<b>Killer Whale</b> <i>Orcinus orca</i>	Strait of Gibraltar subpopulation	CR	C2a(i,ii); D	?	↘	Killer Whales in the Mediterranean were not assessed and are included in the "Visitor species" section	Cañadas and de Stephanis
<b>Sperm Whale</b> <i>Physeter macrocephalus</i>	Mediterranean subpopulation	EN	C2a(ii)	↘	↘		Notarbartolo di Sciara, Frantzi, Bearzi and Reeves
<b>Short-beaked Common Dolphin</b> <i>Delphinus delphis</i>	Mediterranean subpopulation	EN	A2abc	↘	↘	Assessed in 2003	Bearzi (2003)
<b>Common Bottlenose Dolphin</b> <i>Tursiops truncatus</i>	Mediterranean subpopulation	VU	A2cde	↘	?		Bearzi and Fortuna
<b>Striped Dolphin</b> <i>Stenella coeruleoalba</i>	Mediterranean subpopulation	VU	A4de	↘	↘		Aguilar
<b>Fin Whale</b> <i>Balaenoptera physalus</i>	Mediterranean subpopulation	DD					Notarbartolo di Sciara and Panigada
<b>Long-finned Pilot Whale</b> <i>Globicephala melas</i>	Mediterranean subpopulation	DD					Cañadas
<b>Risso's Dolphin</b> <i>Grampus griseus</i>	Mediterranean subpopulation	DD					Gaspari and Natoli
<b>Cuvier's Beaked Whale</b> <i>Ziphius cavirostris</i>	Mediterranean subpopulation	DD					Cañadas
<b>Harbour Porpoise</b> <i>Phocoena phocoena relicta</i>	Black Sea subspecies	EN	A1d + A4cde	↘	↘	Interpreted to include the animals in the northern Aegean Sea	Birkun and Frantzi
<b>Short-beaked Common Dolphin</b> <i>Delphinus delphis ponticus</i>	Black Sea subspecies	EN	A1d	↘	?		Birkun
<b>Common Bottlenose Dolphin</b> <i>Tursiops truncatus ponticus</i>	Black Sea subspecies	EN	A2cde	↘	?		Birkun



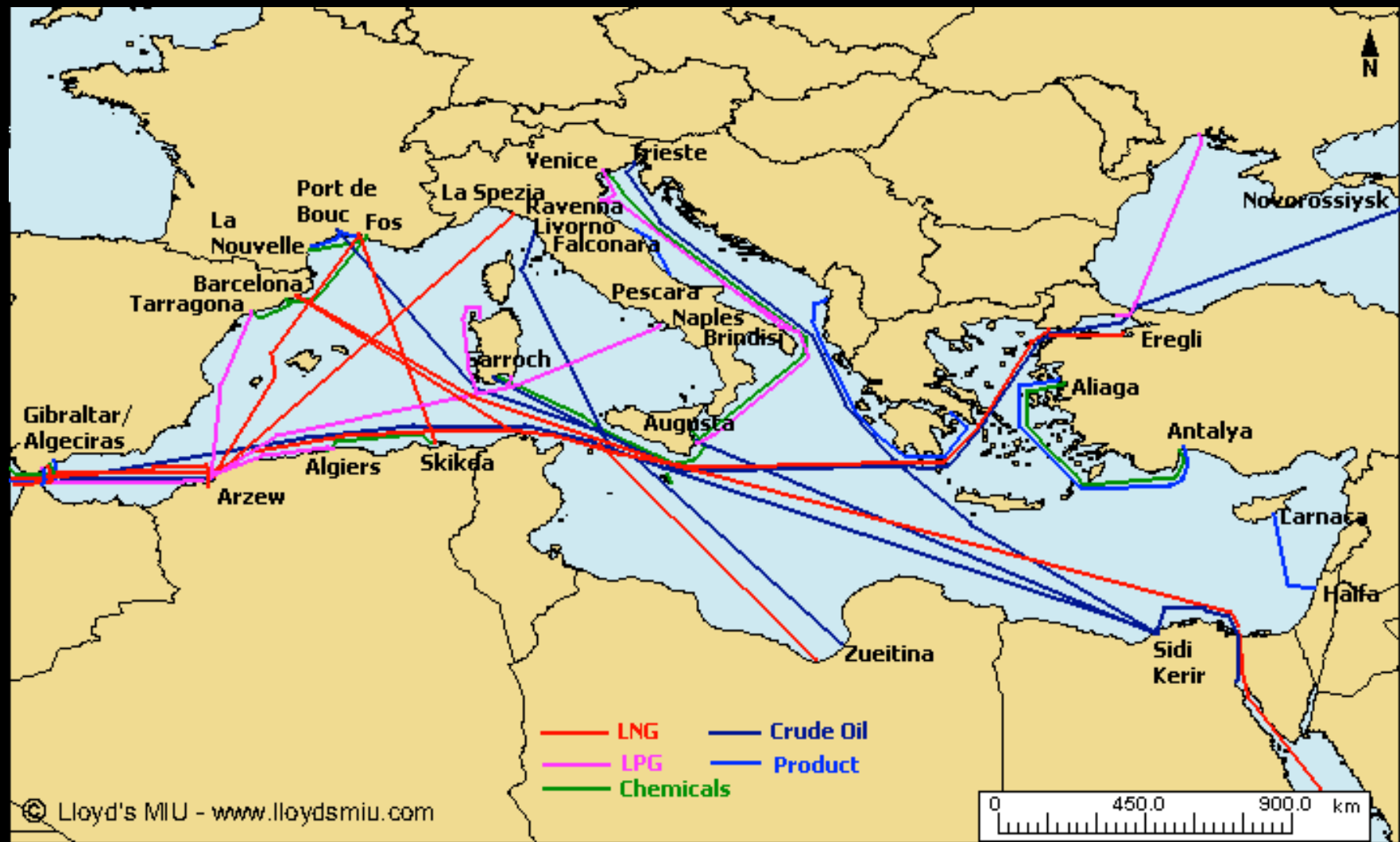
# Shipping facts for the Mediterranean Sea

- Est. 30% international sea-bourne traffic in MS
- Est. 20-25% of global oil sea-bourne traffic
- 200,000 merchant vessels of over 100 GRT annually
- 1 million cruise tourists/year
- 480 ports
  - 80% in western/central Mediterranean sea
  - 20% in eastern Mediterranean sea
- Narrow and congested passage ways
  - Gibraltar Strait (est.> 70,000 transits per year)
  - Turkish Straits ( 55,000 transits per year)
  - Suez Canal (14, 000 transit )

SOURCE\_ Safemed REPORT ON MARITIME TRAFFIC FLOWS IN THE MS

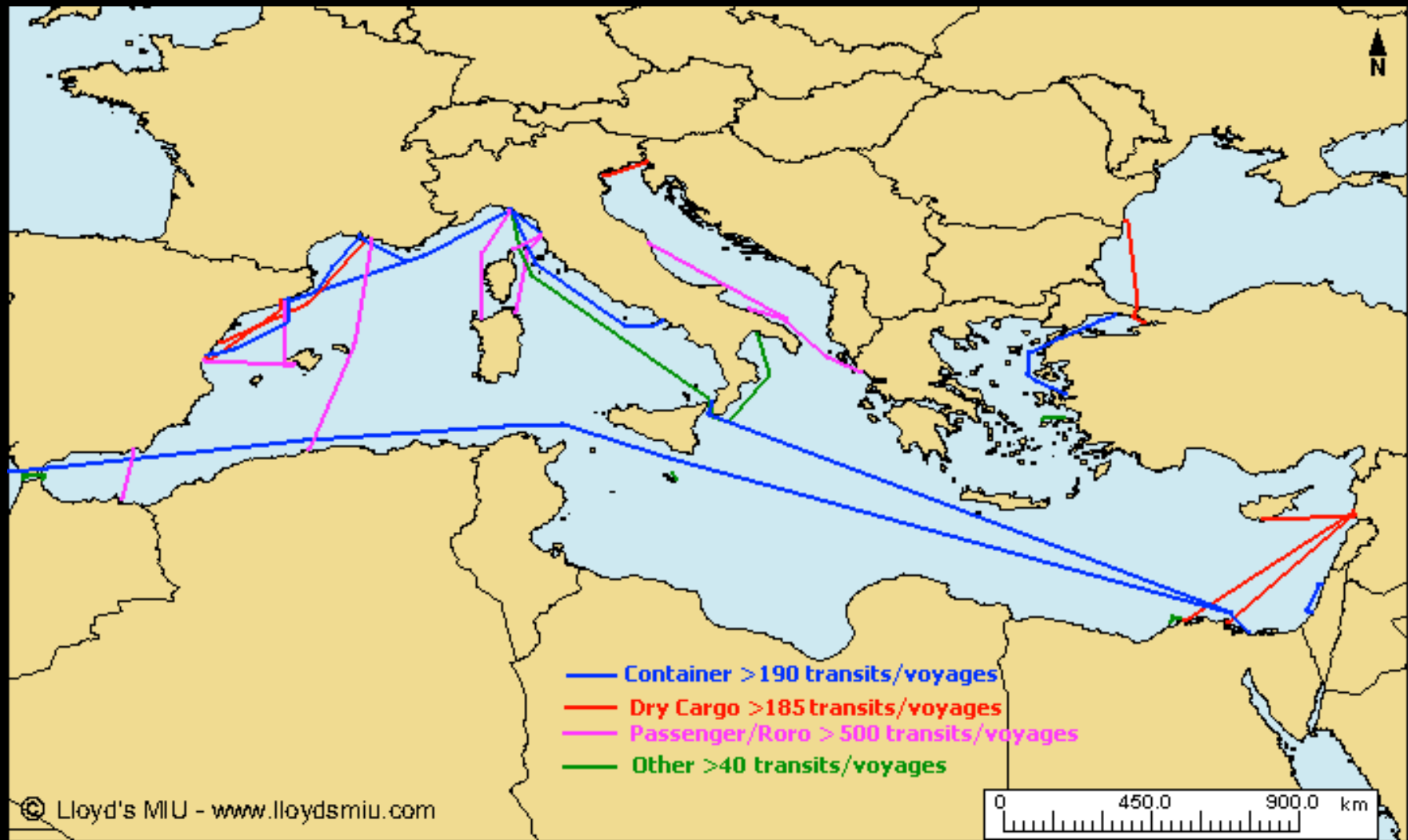


# Major tanker routes - 2006

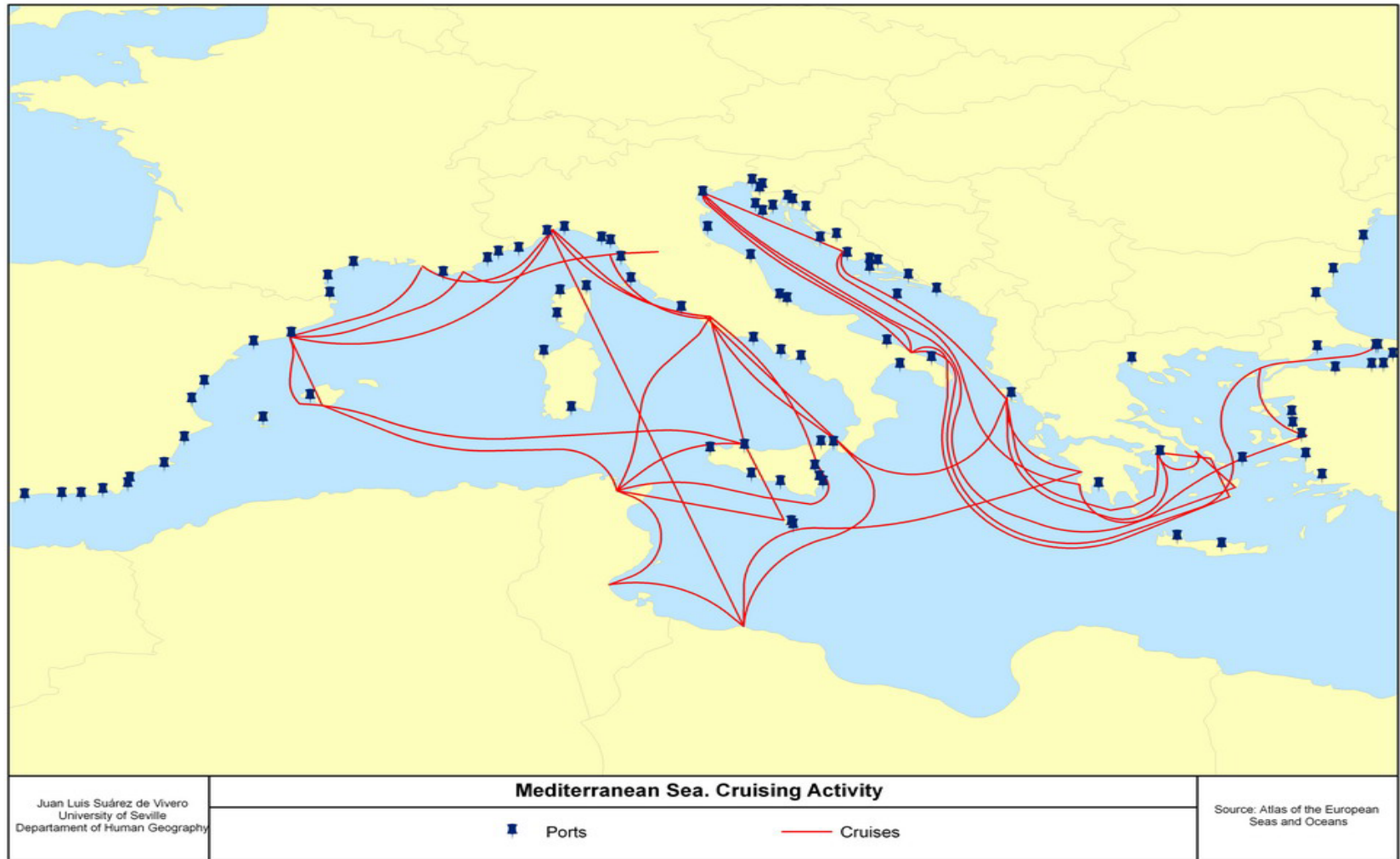




# Major non-tanker routes - 2006



# Cruise ships



# Results from the Mediterranean \*

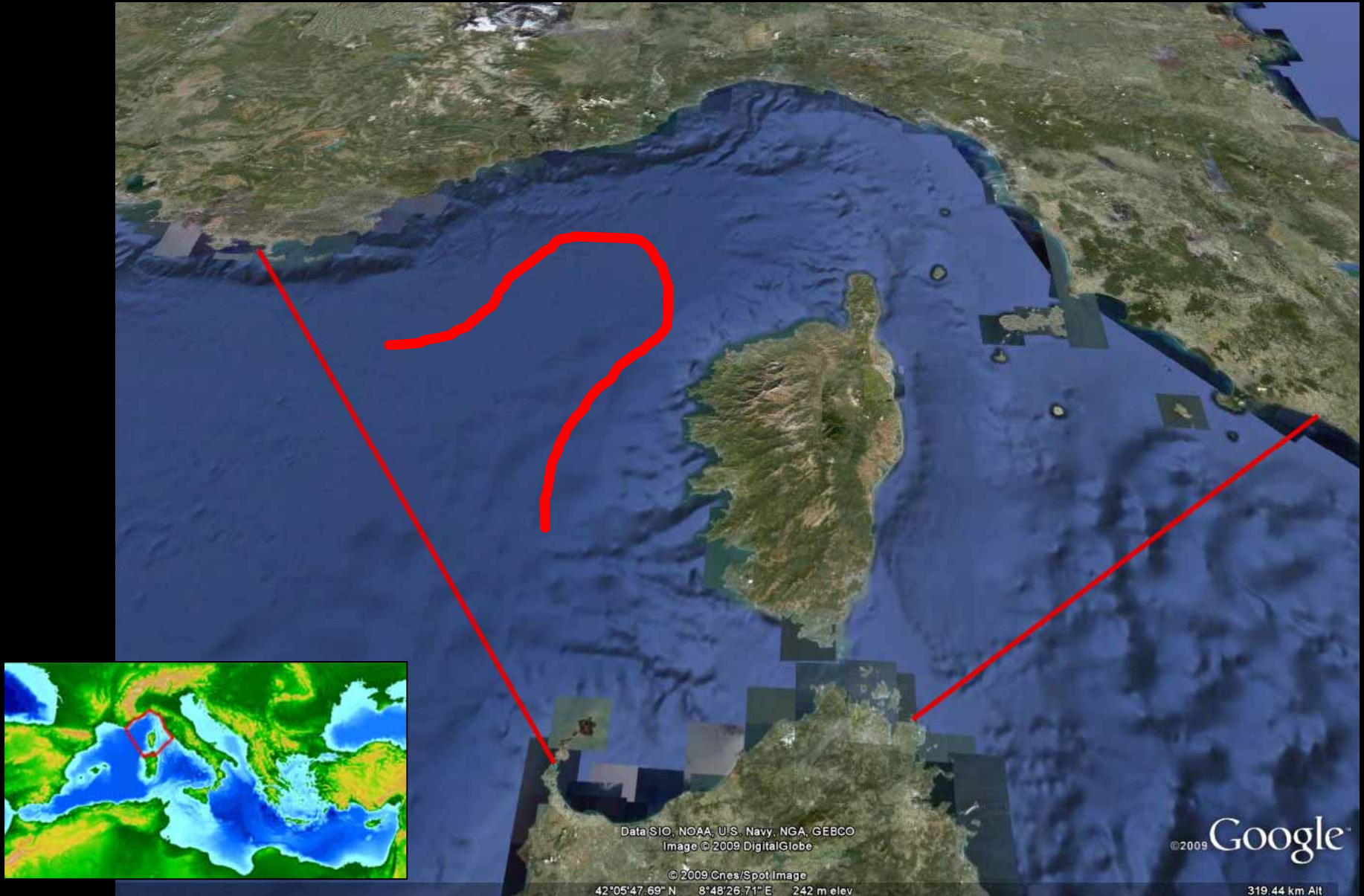
- Out of 287 carcasses, 46 individuals (16.0%) were certainly killed by boats
- This percentage rises to 19.9% if records including animals presumably killed by vessels or unidentified large specimens are considered
- 82.2% of the strike events were reported in or adjacent to the waters of the Pelagos Sanctuary
- Among ~400 photo-identified whales from the same area, 9 (2.4%) had marks that were attributed to a ship impact

\* Panigada, S., Pesante, G., Zanardelli, M., Capoulade, F., Gannier, A., Weinrich, M.T. 2006. Mediterranean fin whales at risk from fatal ship strikes. Marine Pollution Bulletin, 52:1287-1298.

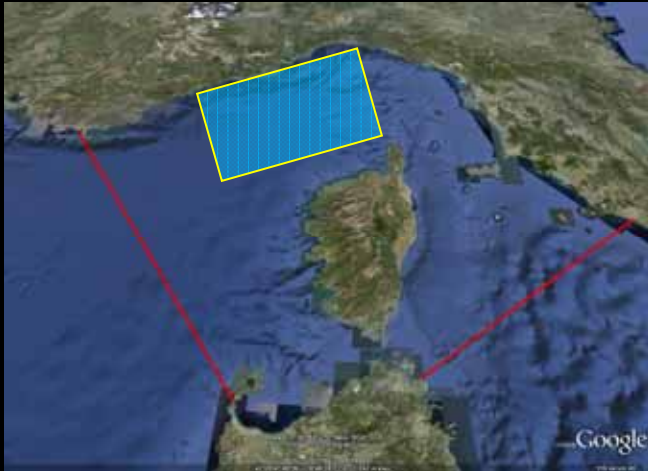




# The Pelagos Sanctuary



# The Pelagos Sanctuary



Cetacean Sanctuary Research Project

July 18 - August 18  
2010





# What is Pelagos

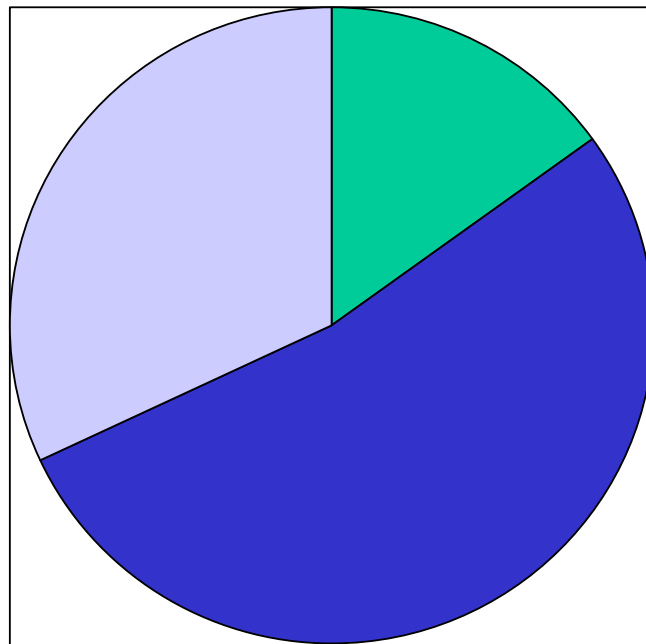
- 87,000 km<sup>2</sup> over water;
- built around a permanent ecological feature which maintains its ecosystem value;
- contains critical habitat of all the cetacean species regularly present in the Mediterranean Sea.





# What is Pelagos

- Internal waters of France, Italy and Monaco: 15%
- Territorial waters of France, Italy and Monaco: 32%
- Mediterranean High Seas: 53%



■ internal waters  
■ high seas  
■ national waters

# Management actions inside its borders

- Create highly protected conservation zones;
- channel the area's intense maritime traffic along established corridors;
- use national coast guard and navies to ensure compliance;
- increase public awareness;
- implement a systematic programme of monitoring.



# Possible mitigation measures

1. Reducing ship speed when crossing through high density areas, coupled with visual observers;
2. yearly monitoring of whale presence and distribution to suggest dynamically moving ferries routes from areas of particular concentration of fin whales to areas of lower density. These could be limited to particularly risky vessel types or possible sub-areas characterized by high concentration of fin whales;
3. real time reporting to alert ships of whales in a specific area: REPCET is a network of large cetacean position report between regular commercial ships.





# Reporting forms


## 4. Increase of the existing DATABASES.

**Report a collision**


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This form aims to collect information on collision between vessels navigating in the Mediterranean Sea and cetaceans, particularly fin whales and sperm whales.

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 **Report the observation of a cetacean alive or dead showing signs of a collision** (file pdf, 180 Kb)

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 **Report the direct observation of collision between a vessel and a cetacean** (file pdf, 270 Kb)

Forms can be downloaded from  
[www.collisloni.org](http://www.collisloni.org)

Web site: [www.collisionsi.org](http://www.collisionsi.org)



Collisioni con cetacei in Mediterraneo

→ [Entra nel sito](#)

→ [Segnala una collisione](#)



# Web site: [www.collisionsi.org](http://www.collisionsi.org)

## Collisions with Mediterranean cetaceans

COLLISIONS WITH MEDITERRANEAN CETACEANS

Examples of collisions

Traffic and collisions

Mediterranean cetaceans

Report a collision

Download

Links

Credits

### Maritime traffic and collisions with cetaceans

One of the main anthropogenic causes of death for fin whale (*Balaenoptera physalus*) and sperm whales (*Physeter macrocephalus*) in the Mediterranean Sea is represented by collisions with boats.

Every year, 220,000 ships greater than 100 tons cross the Mediterranean basin and approximately 30% of international sea-borne volume originates from or is directed towards 300 Mediterranean ports. These numbers are expected to increase. The Corso-Ligurian-Provençal basin alone is crossed daily by more than 9,000 vessels, ranging from cargo ships, hydrofoils, ferries, speed boats, whale watching boats, fishing vessels, military ships etc.

The probability of collision depends on the type of boat. The vessels most often involved in accidents with large cetaceans are usually those covering long distances, like ferries, cargos and cruise ships. These vessels often navigate with the autopilot, day and night.

# Possible mitigation measures

5. Expand the database with previous data through collaborations with other institutes and organizations;
6. collaborations with Harbour Masters to collect data about types and volume of maritime traffic in the Mediterranean Sea.





# Public awareness

## 7. Informative material distribution.



# Public awareness



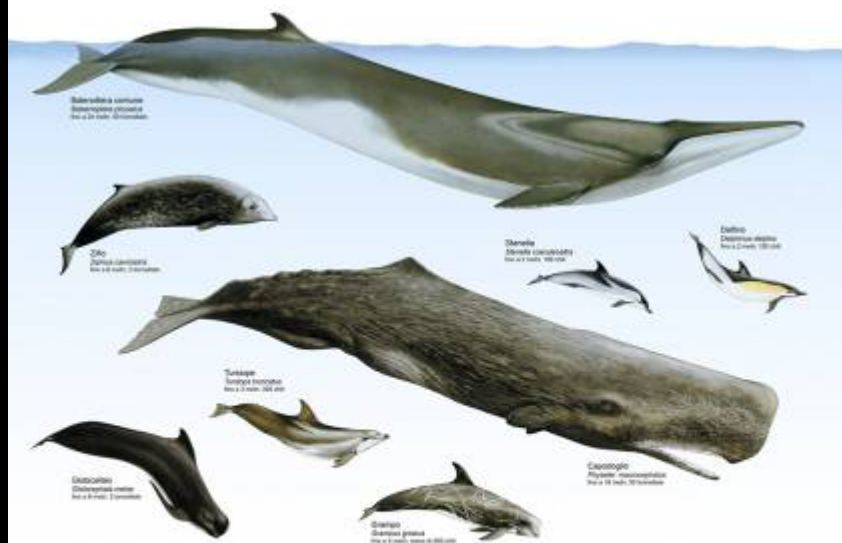
ISTITUTO TETHYS

## COLLISIONI TRA CETACEI E IMBARCAZIONI NEL MAR MEDITERRANEO

- Se avvisti un cetaceo che presenta segni di collisione
  - Se assisti a una collisione
  - Se accidentalmente urti un cetaceo con la tua imbarcazione
- fai una segnalazione su [www.collisionsi.org](http://www.collisionsi.org)**

Se hai materiale foto o video di una collisione o di un animale che presenta segni di collisione **per cortesia mandacelo**

Istituto Tethys, Viale G.B. Gadio 2, 20121 Milano  
e-mail: [collisioncetacei@gmail.com](mailto:collisioncetacei@gmail.com)



ACQUARIO  
di Genova



ACCOBAMS



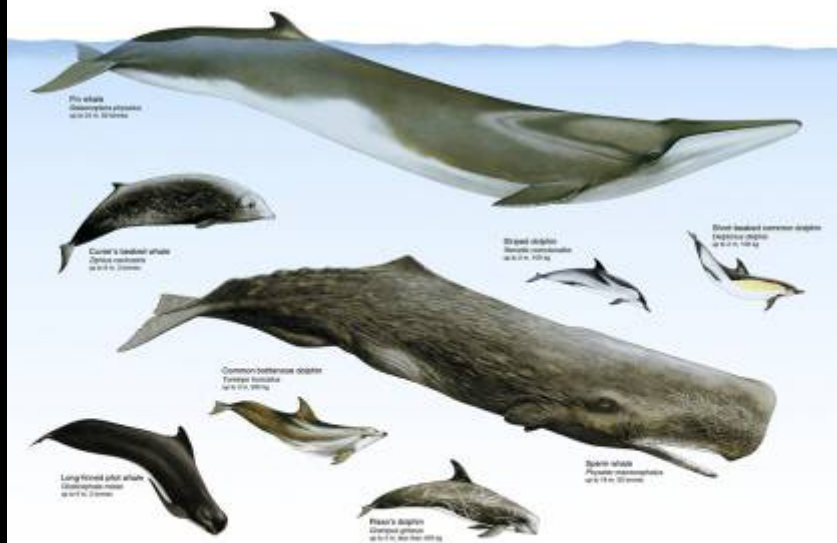
Tethys Research Institute

## COLLISIONS WITH CETACEANS IN THE MEDITERRANEAN SEA

- If you observe a cetacean with evidence of a collision
  - If you witness a ship strike
  - If you hit a cetacean by accident with your vessel
- please report it at → [www.collisionsi.org](http://www.collisionsi.org)**

If you have photos or videos of a ship strike or from animals presenting evidence of a ship strike **please send it to us**

Tethys Research Institute, Viale G.B. Gadio 2, 20121 Milan, Italy  
e-mail: [collisioncetacei@gmail.com](mailto:collisioncetacei@gmail.com)



ACQUARIO  
di Genova



ACCOBAMS

# Possible mitigation measures

8. Possibility to train directly vessels personnel (Naval Academy, Shipping Companies);
9. Willingness to train crew members on board or sent directly dedicated researchers for sighting cetaceans also able to understand their behaviour in order to avoid collisions;
10. Science communication and awareness.



# Possible mitigation measures

## Collisions with Mediterranean cetaceans

COLLISIONS WITH MEDITERRANEAN CETACEANS

Examples of collisions

Traffic and collisions

Mediterranean cetaceans

Report a collision

Download

Links

Credits

### Cetaceans of the Mediterranean Sea

Collision risk



➔ Fin whale

HIGH



➔ Sperm whale

HIGH



Cuvier's beaked whale

MEDIUM



Killer whale

LOW



# Possible mitigation measures

Direction of movement

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## 10. Science communication.

INTERNATIONAL MARITIME ORGANIZATION



*E*

### Ship strikes identification

SIMONE PANI

<sup>1</sup> *Tethys Research*

<sup>2</sup> *School of Biology*

<sup>3</sup> *Alnitak, Nal*

### Introduction

Collisions between ships and marine mammals are a global problem. The world's oceans are home to a wide variety of marine mammals, including whales, dolphins, and seals. Ship strikes are a major threat to these animals, and can result in injury or death. This document provides information on the work carried out in the Mediterranean Sea to assess the impact of ship strikes affecting large cetaceans and to identify conservation and mitigation measures to address this issue which is a synthesis of the current knowledge of ship strikes in the Mediterranean.

MARINE ENVIRONMENT PROTECTION  
COMMITTEE  
59th session  
Agenda item 18

MEPC 59/18

8 May 2009

Original: ENGLISH

### WORK PROGRAMME OF THE COMMITTEE AND SUBSIDIARY BODIES

Measures for minimizing the risks of collisions with cetaceans

*JK*

Submitted by Italy, Spain, France and Monaco

### SUMMARY

*Executive summary:* This document provides information on the work carried out in the Mediterranean Sea to assess the impact of ship strikes affecting large cetaceans and to identify conservation and mitigation measures to address this issue which is a synthesis of the current knowledge of ship strikes in the Mediterranean

*Strategic direction:* 7.1

*High-level action:* 7.1.2

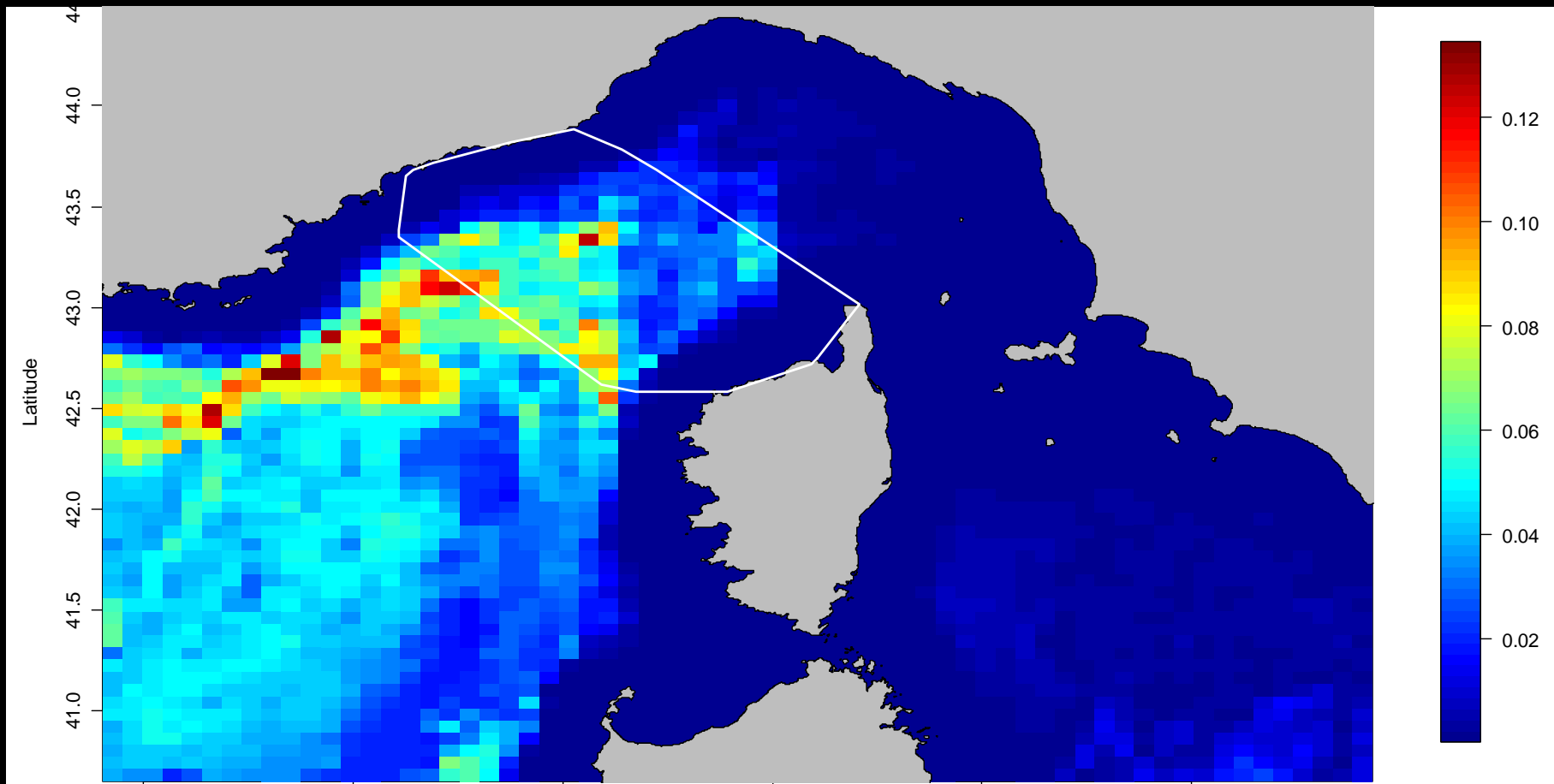
*Planned output:* 7.1.2.2

*Action to be taken:* Paragraph 24

*Related documents:* MEPC 57/21, MEPC 57/18/2; MEPC 58/18, MEPC 58/INF.15; MSC 76/23; MSC.70(23); MSC 69/INF.21; MEPC 55/22; MEPC 40/INF.9; NAV 54/3, NAV 54/3/1; NAV 53/3/13; NAV 52/18, NAV 52/3/3; NAV 48/3/5; NAV 47/INF.2 and NAV 44/3/1

ported from all  
ist et al. 2001,  
salus) is most  
ather common  
les (*Physeter*

## 11. Habitat modelling.





# Fin whales' habitat





# Sperm whales' habitat



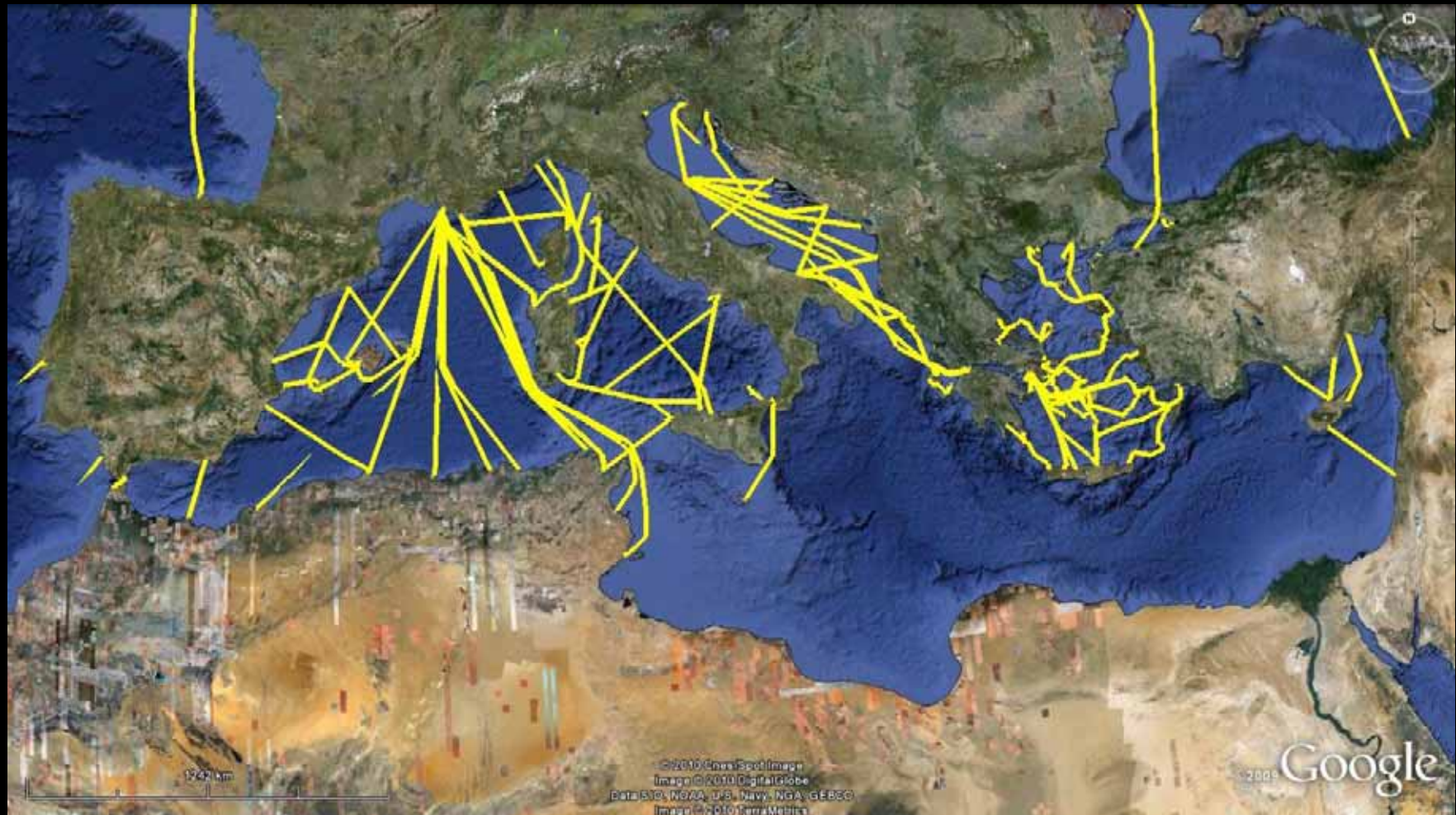


# Commercial traffic





# Passengers' traffic



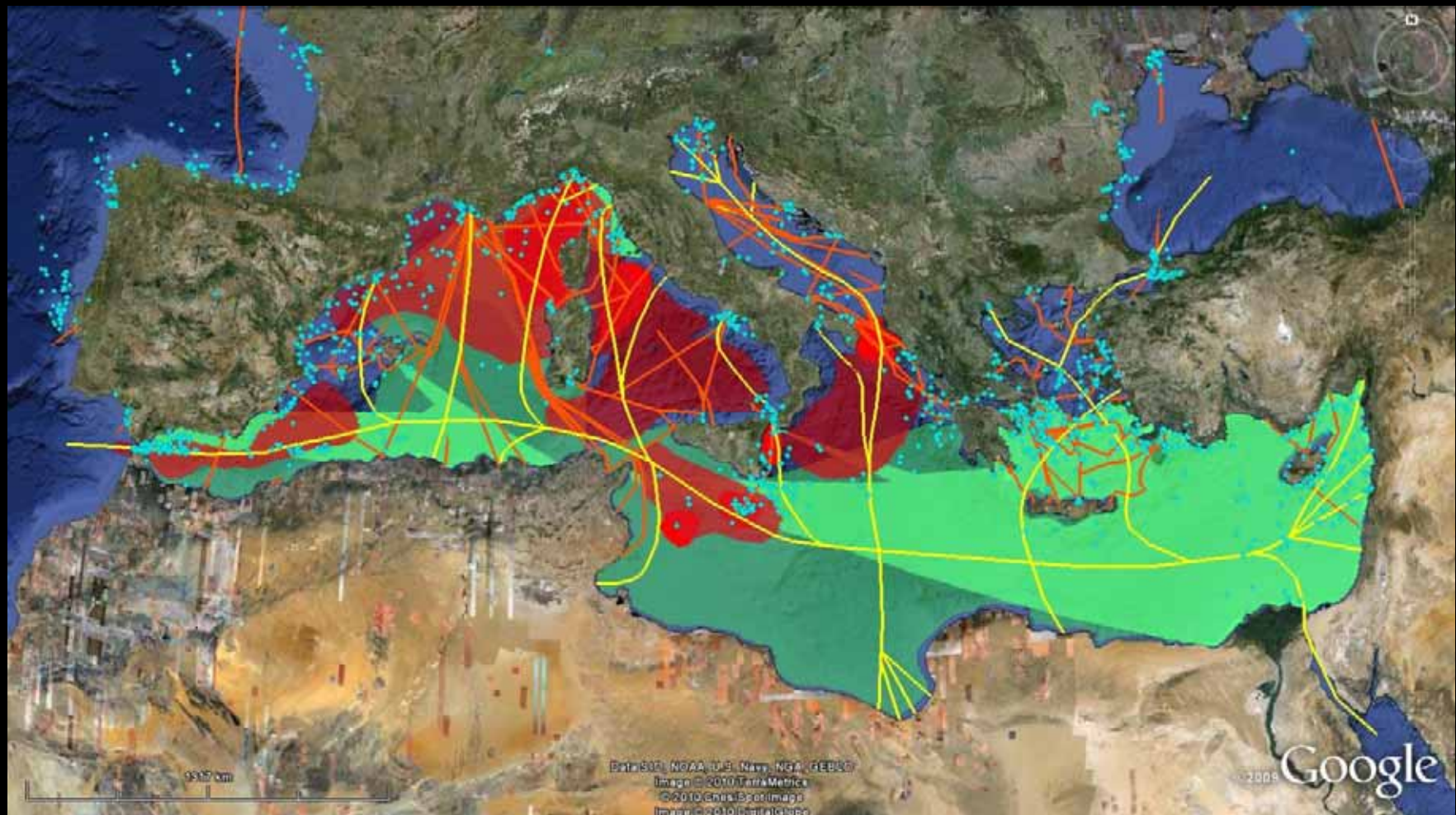


# Daily traffic (<http://www.marinetraffic.com/ais/#>)



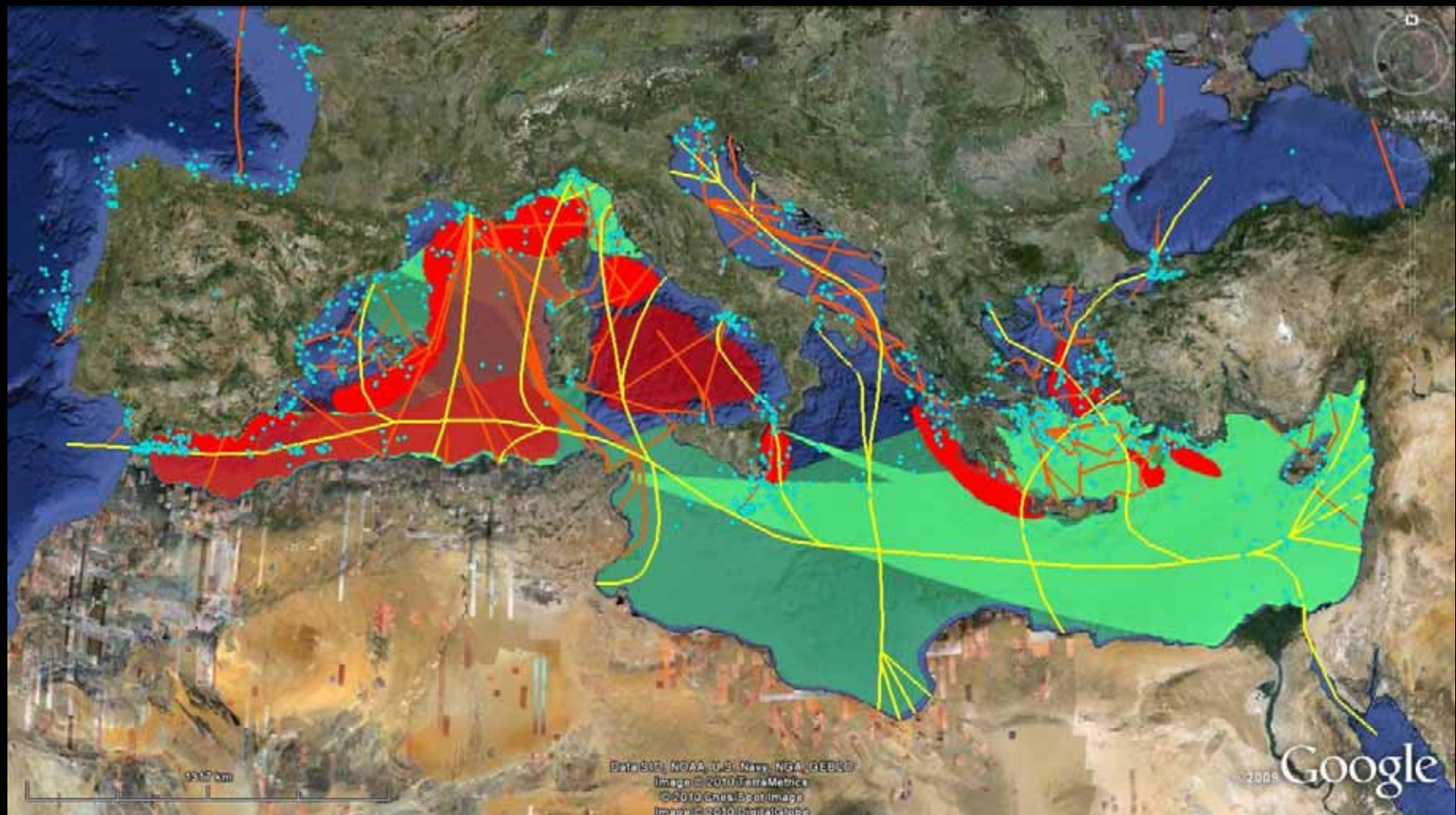


# Fin whales' habitat and traffic





# Sperm whales' habitat and traffic





# High risk areas for sperm whales



# High risk areas for fin whales





# High risk areas for sperm and fin whales







