

**Showcasing the advanced Tuscan experiences
on sustainable use and management of water**

23 May 2012

Brussels (Belgium)

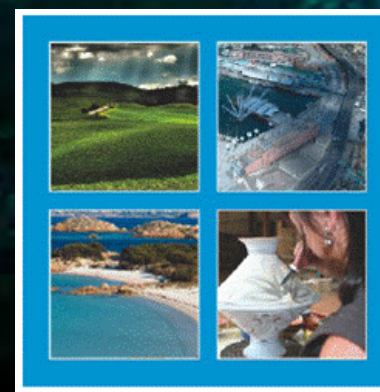
Results of the transboundary (France-Italy) project GIONHA: their use in support of the Marine Strategy Framework Directive 2008/56/EC



Fabrizio Serena
Cecilia Mancusi
Marcello Ceccanti
ARPA Toscana



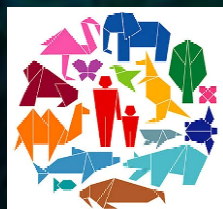
*La Cooperazione al cuore
del Mediterraneo*



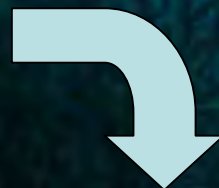
*La Coopération au coeur
de la Méditerranée*

MAIN GOALS

**Enhance the protection and
ecological value of the natural
marine/coastal habitats that
sustain the protected area
"Pelagos Sanctuary "**



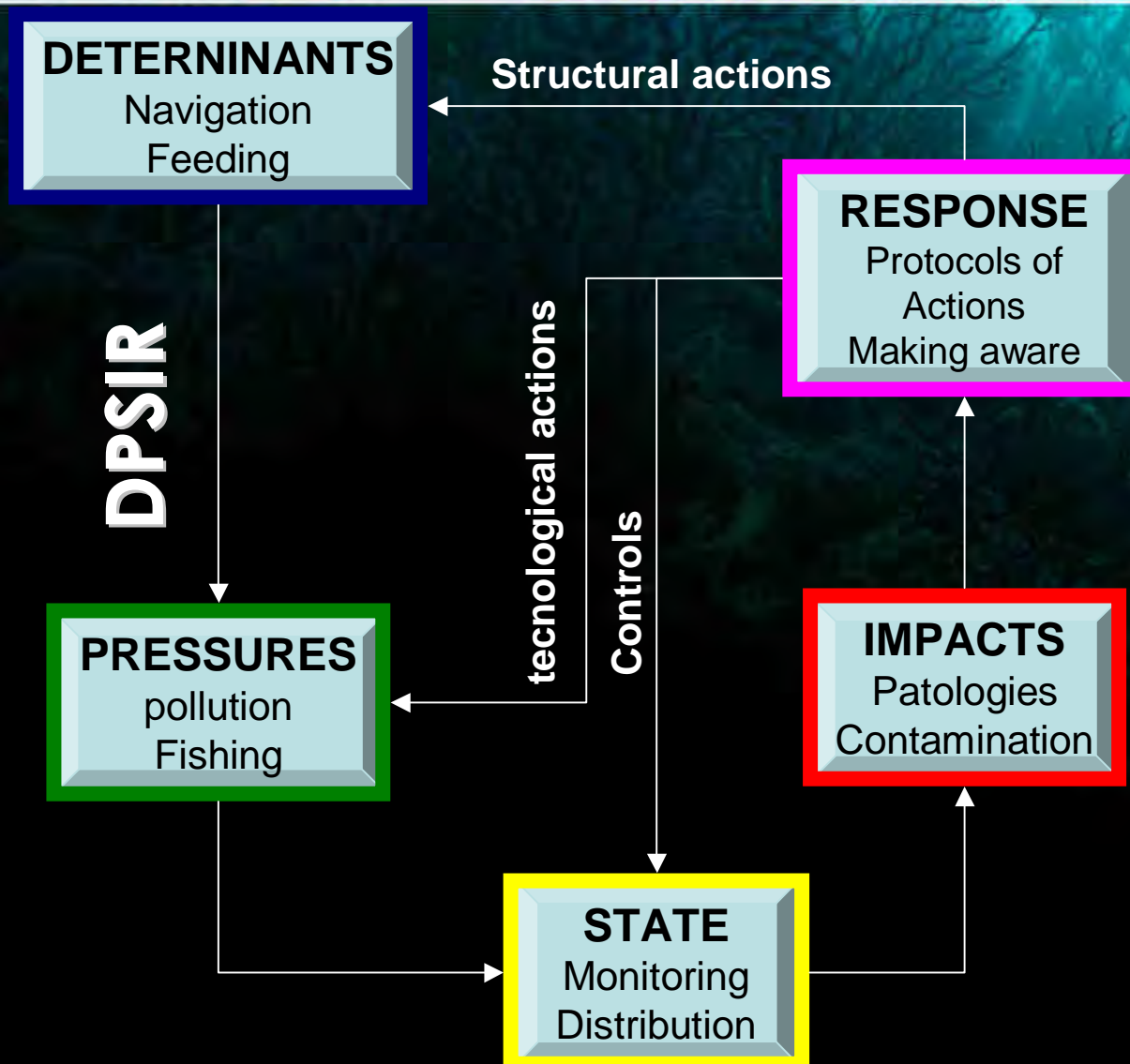
CBD



In agreement with the **Framework Directive** of the EU strategies for the marine environment (**DIR 2008/56/CE**), that encourages the sustainable use of the sea and a good ecological status of the ecosystem, the GIONHA project has defined the attainment of some **specific goals**:

SPECIFIC GOALS

- 1) Knowledge of the environmental **status** of the marine **ecosystems** in the Pelagos Sanctuary
- 2) Pilot actions, “*best practices*” aimed at a reduction of the **anthropic impacts** on the coastal ecosystems
- 3) **Improvement** of the **marine habitats** through a shared management with the “*stakeholders*”
- 4) **Environmental Education** aimed at promoting a best knowledge on the habitat
- 5) **Disemination** of goals and results of the project



The results of GIONHA project follows the scheme of a **DPSIR** model (Determinants, Pressures, State, Impact, Responses). This allows representing, through a systemic approach, the causal relationships among the human actions and the health status of the marine ecosystem.

9 | P h a s e s & 33 | A c t i o n s

PHASE 2 STUDY ON THE **ENVIRONMENTAL STATUS** AND EVOLUTIVE TREND OF THE COASTAL MARINE ECOSYSTEMS THAT CHARACTERIZE THE PELAGOS SANCTUARY

Action1 Coordination of the monitoring activities of;
Collection of historical data and comparison
with the available archives.

Action2 Monitoring, census of species with **photo-identification**.

Action3 Forecasting model of changes of the **upper limit of posidonia beds** related to coastal hydrodynamic parameters.

Action4 Chemical, physical and biological characterization of the marine environment, **trophic net**.

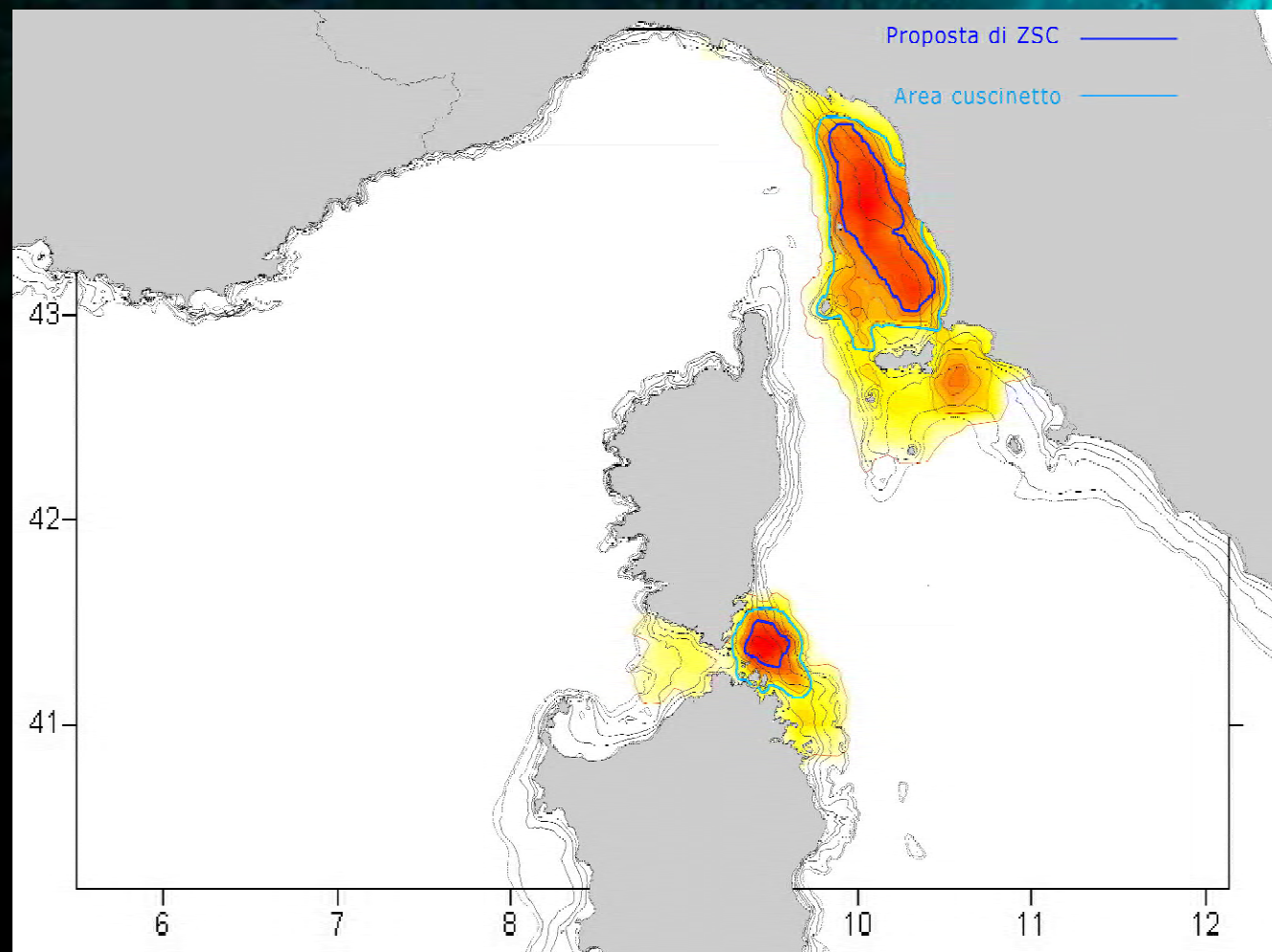
PHASE 2

Action 2

Monitoring, census of
species with
photo-identification

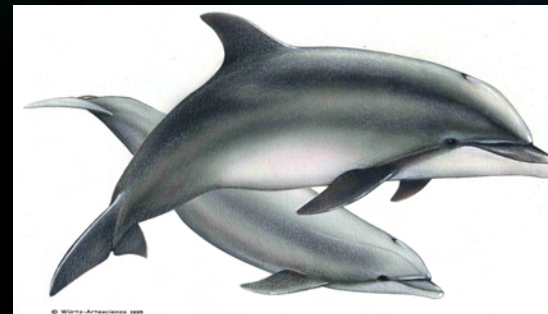


PHASE 2



Evaluation of the
 consistency in
 number of the
 Tursiops

*Tursiops
 truncatus*



PHASE 2



Assessment of
the presence
of the
Stenella

*Stenella
coeruleoalba*

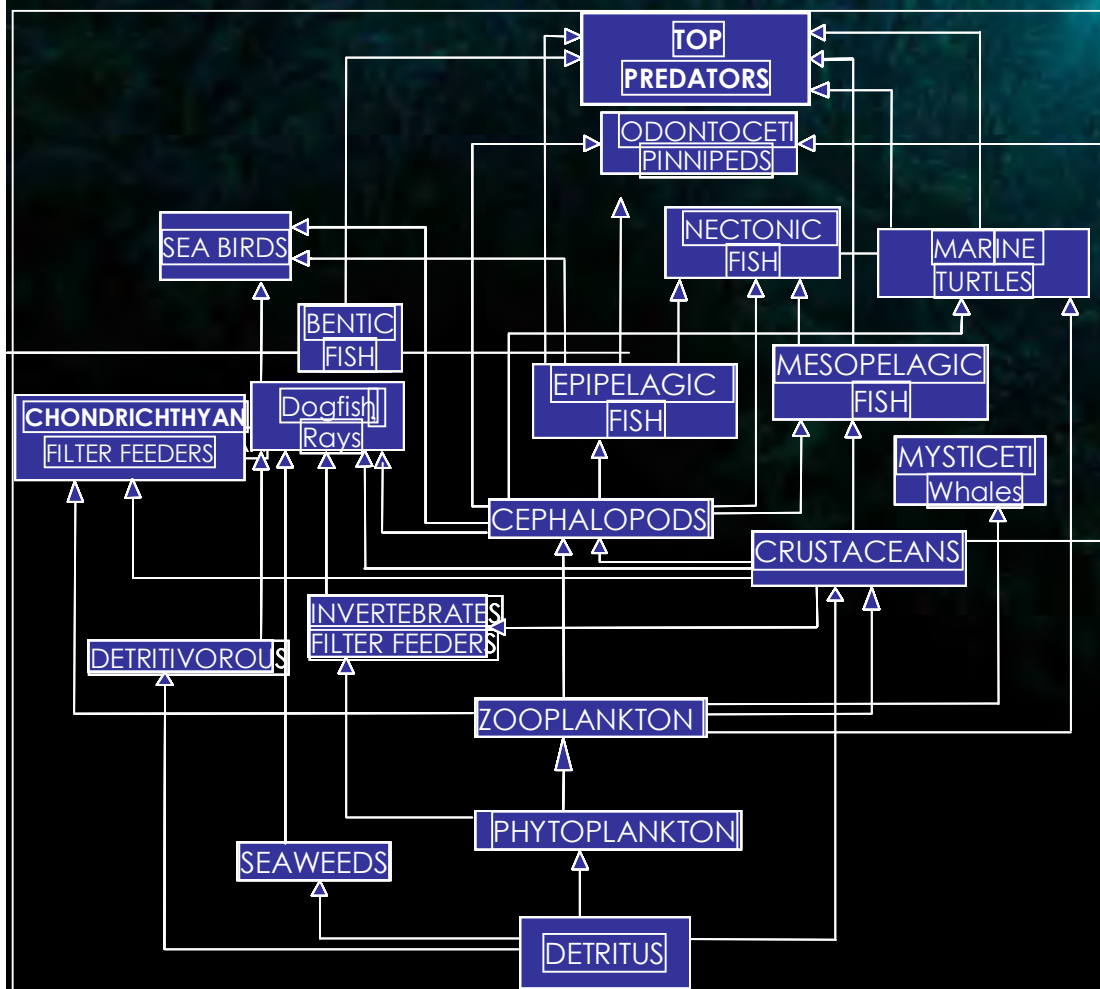


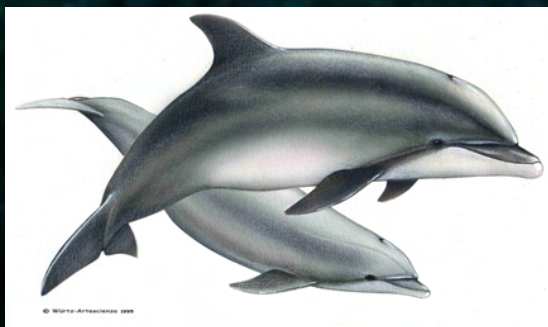
PHASE 2 Action 4

**Environmental
effects**

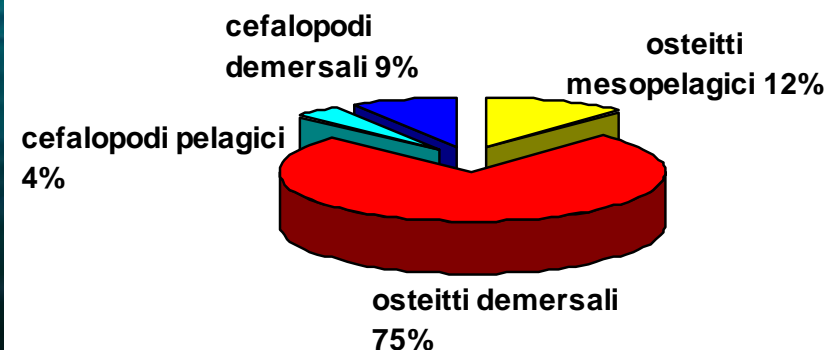


Human activity
Fishing, navigation,
etc.

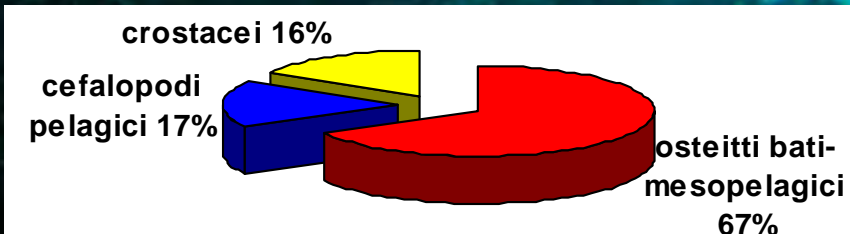




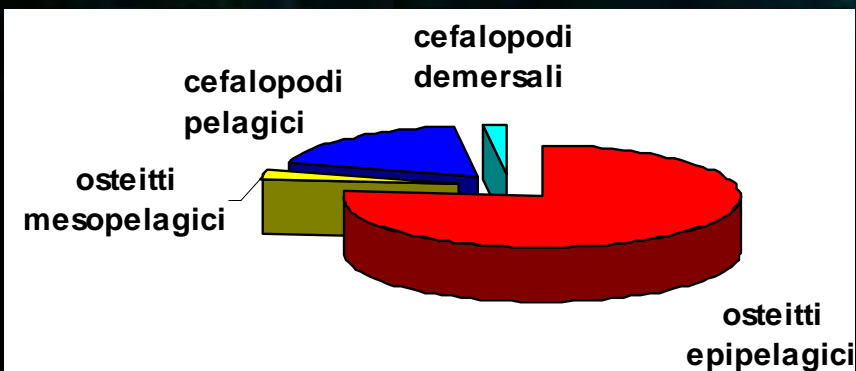
Feeding habits Tursiops



Stenella



Common Dolphin



PHASE 3 STUDY ON THE INTERACTIONS AMONG CETACEANS, THE MARINE TURTLES AND THE INFRASTRUCTURES AND HUMAN ACTIVITIES IN THE INVOLVED AREAS AND PILOT ACTIONS FOR IMPACTS MITIGATION.

Action1 Studies on the **impact on cetaceans** derived from professional fisheries activities and collisions during commercial or sport vessels navigation

Action2 Monitoring of **strandings** and study of the health status of the **sea turtles** and **cetacean** populations

Action3 For rescue and collection of marine mammals stranded or in difficult situations.

Action4 **Regional network of rescue centers** for marine turtles (PATM)

FASE 3

Action 4



The Tuscany net



ARPAT

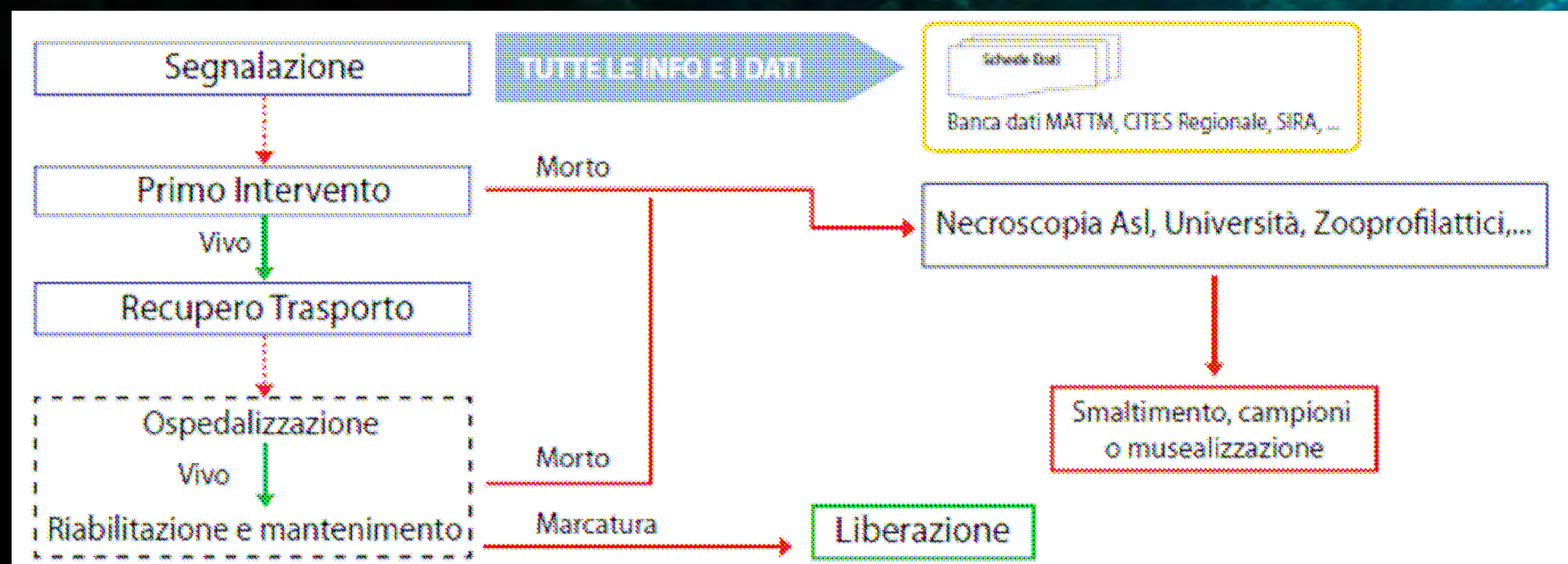
University of Siena

University of Padova

Museum of the Fisiocritici (Si)



Conceptual scheme of intervention procedure



PHASE 3 Action 2,3

Cetaceans	2008	2009	2010	2011	TOTALE animali
Stenella	4	11	21	11	47
Tursiope	3	3	7	13	26
Balenottera comune	2			2	4
Capodoglio	1				1
Delfinide indeterminato		2	2	1	5
Zifio				1	1
TOTALE	10	16	30	28	84

January – April 2012

Tursiops	3
Stenella	9
Grampus	2
Undetermined	2

Marine turtles	2009	2010	2011	TOTAL animals
Tartaruga comune	37	47	61	145
Tartaruga liuto			1	1
Tartaruga verde				
TOTAL	37	47	62	146



The rescue network allowed a major attention on such phenomenon.

In the last years the recorded cases increased over **50%**.

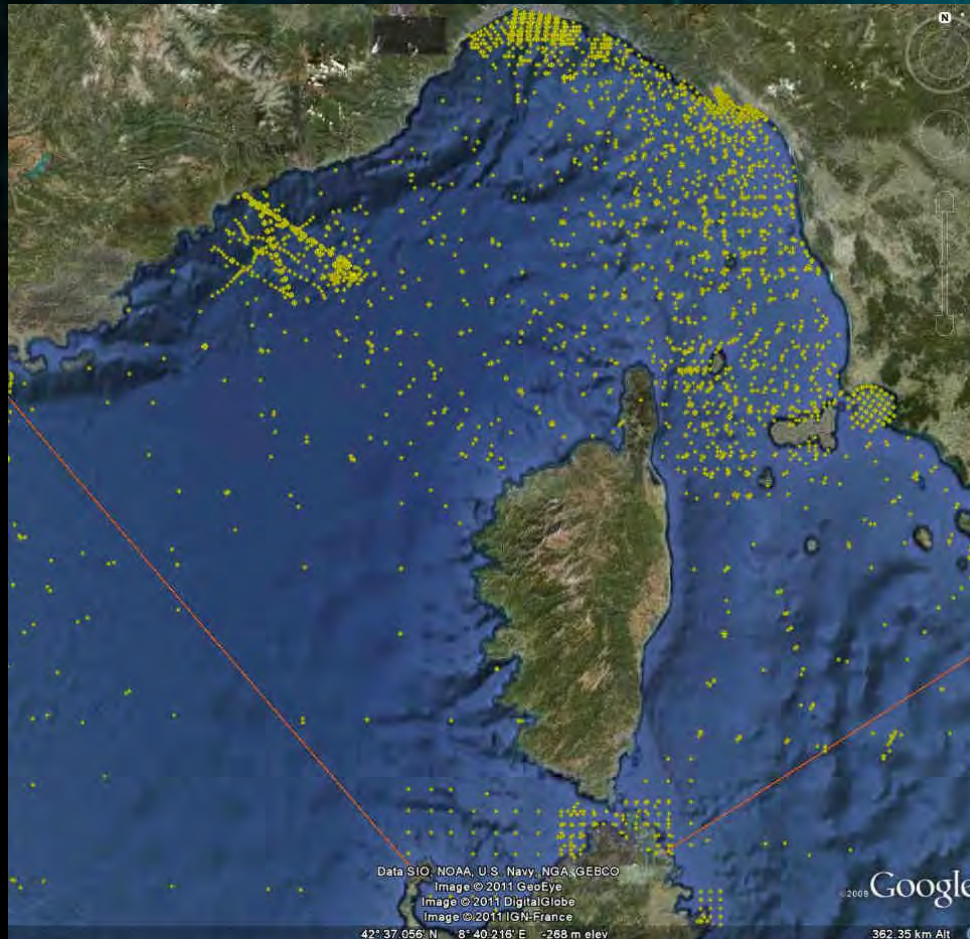
PHASE 4 STUDY ON THE POLLUTION SOURCES AND IMPACT MITIGATION ACTIONS

Action 1 Study on the pollution sources and actions of mitigation of impacts. Collection of data on **acoustic pollution** and its interaction with cetaceans

Action 2 Study on the environmental integrity of the marine coastal grounds and of the open sea and geo-referenced mapping of the **anthropic debris**

PHASE 3

Action 1



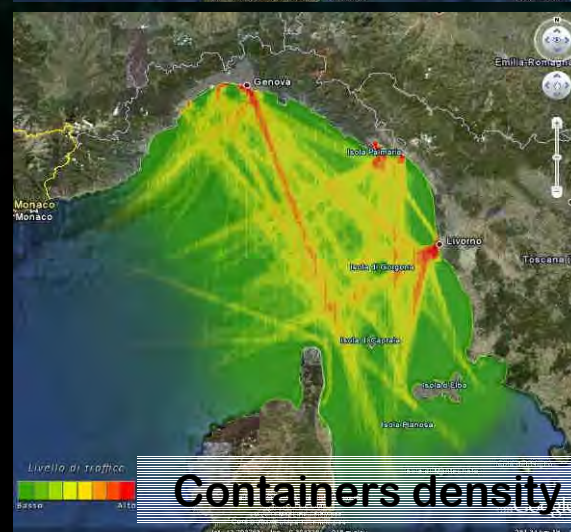
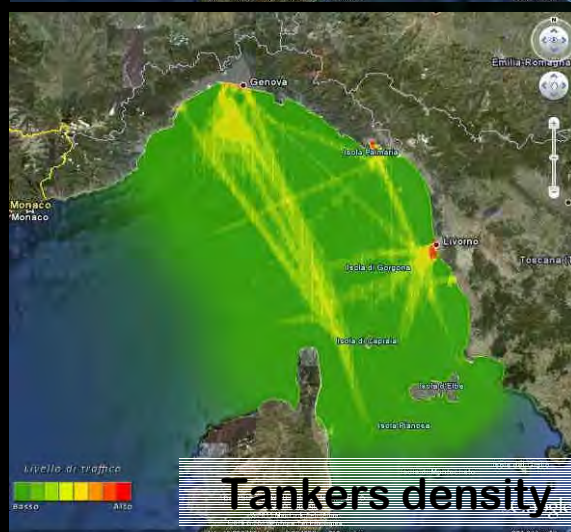
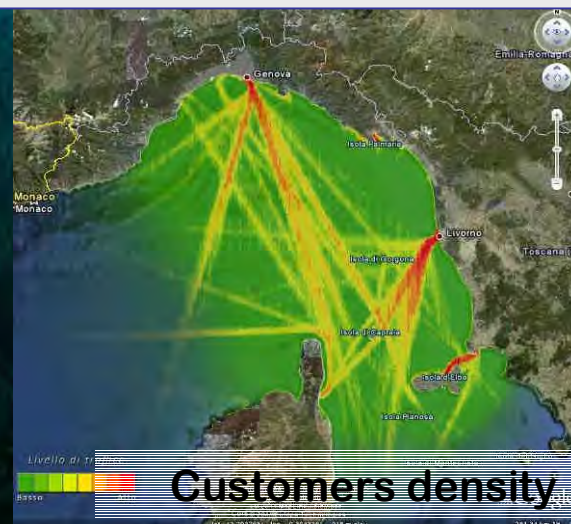
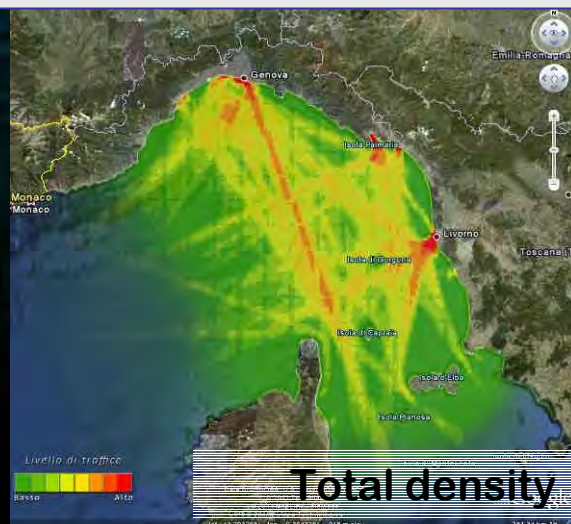
~10.000
Sound profiles

Period:
about 40 years
(1970-2009)

Source: World
Ocean Data
Center
System

PHASE 3

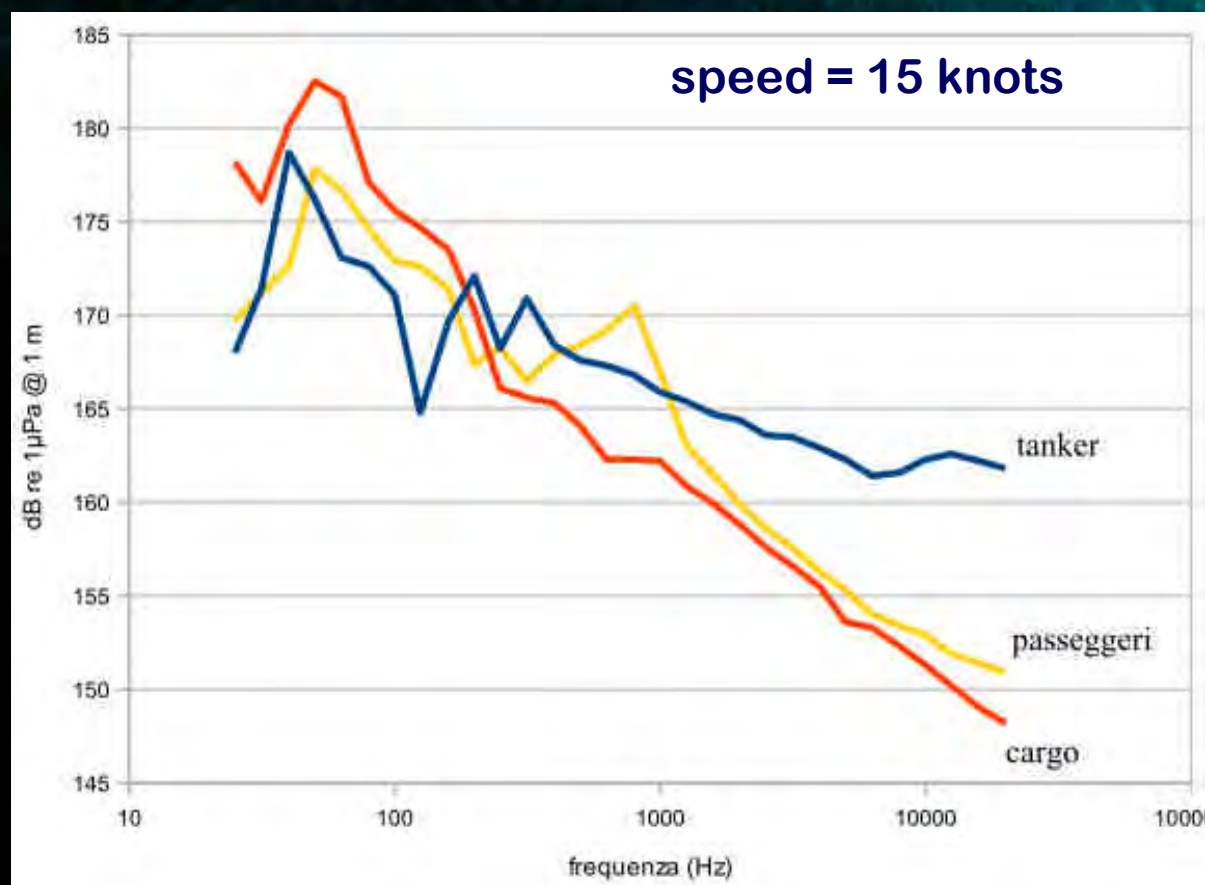
Action 1



PHASE 3

Action 1

Spectra by vessel typology



PHASE 3

63 Hz

125 Hz

Action 1

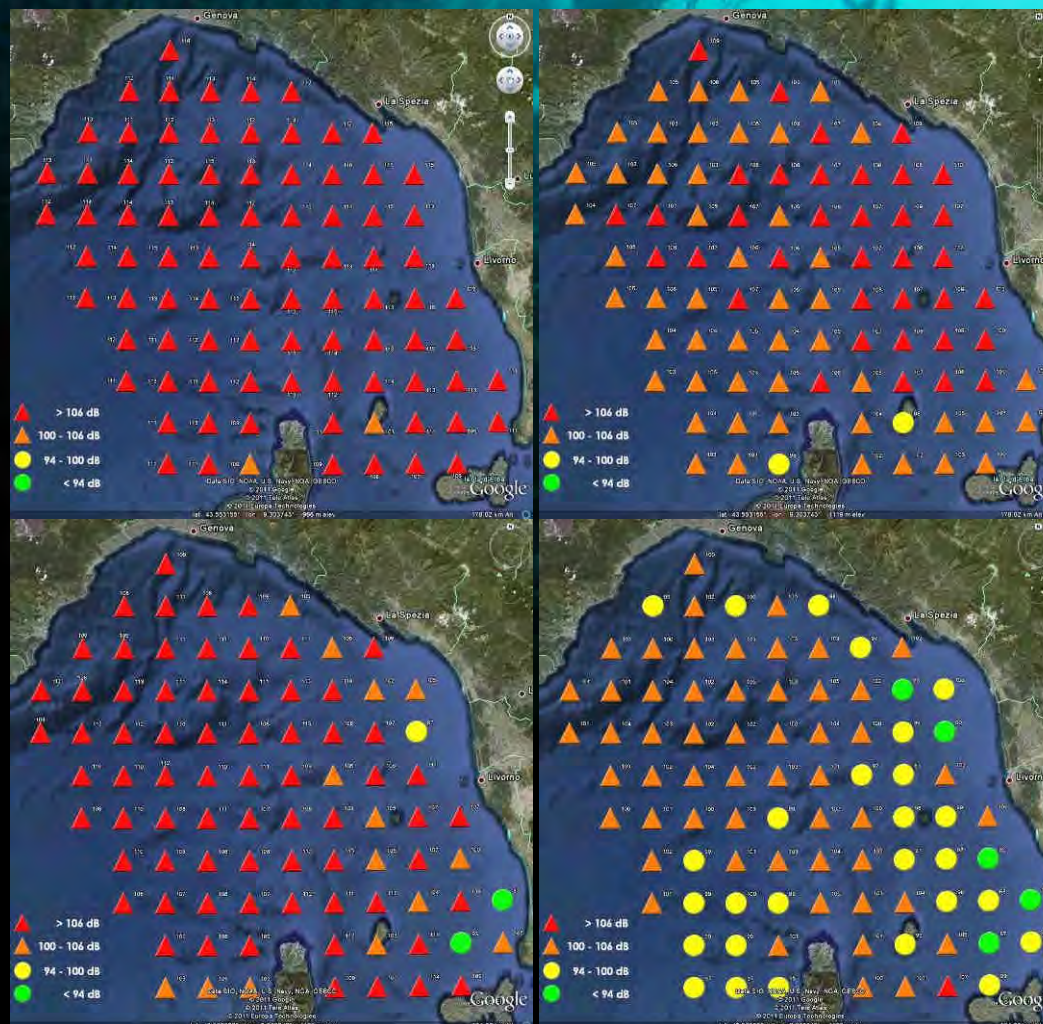
Depth

10 m

January



June



PHASE 3

63 Hz

125 Hz

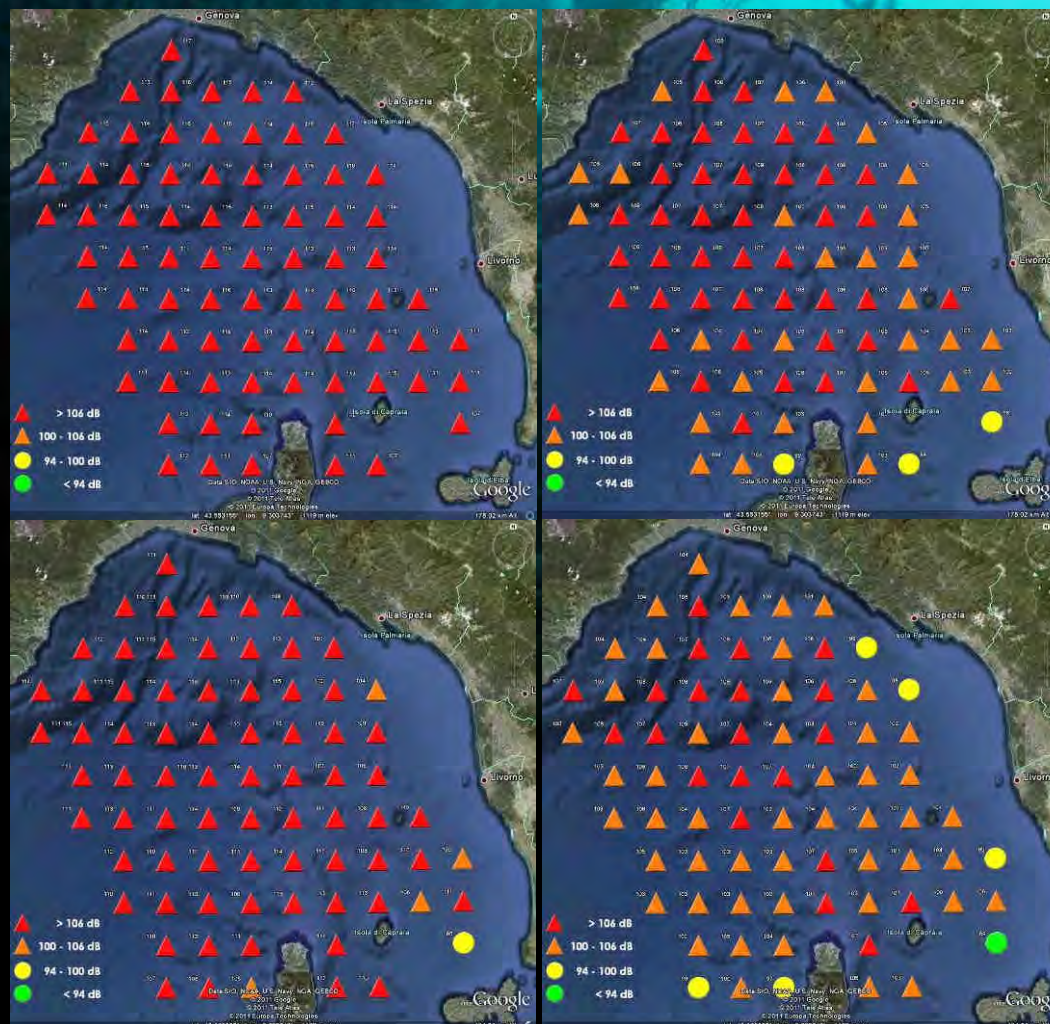
Action 1

Depth
100 m

January



June



PHASE 3

63 Hz

125 Hz

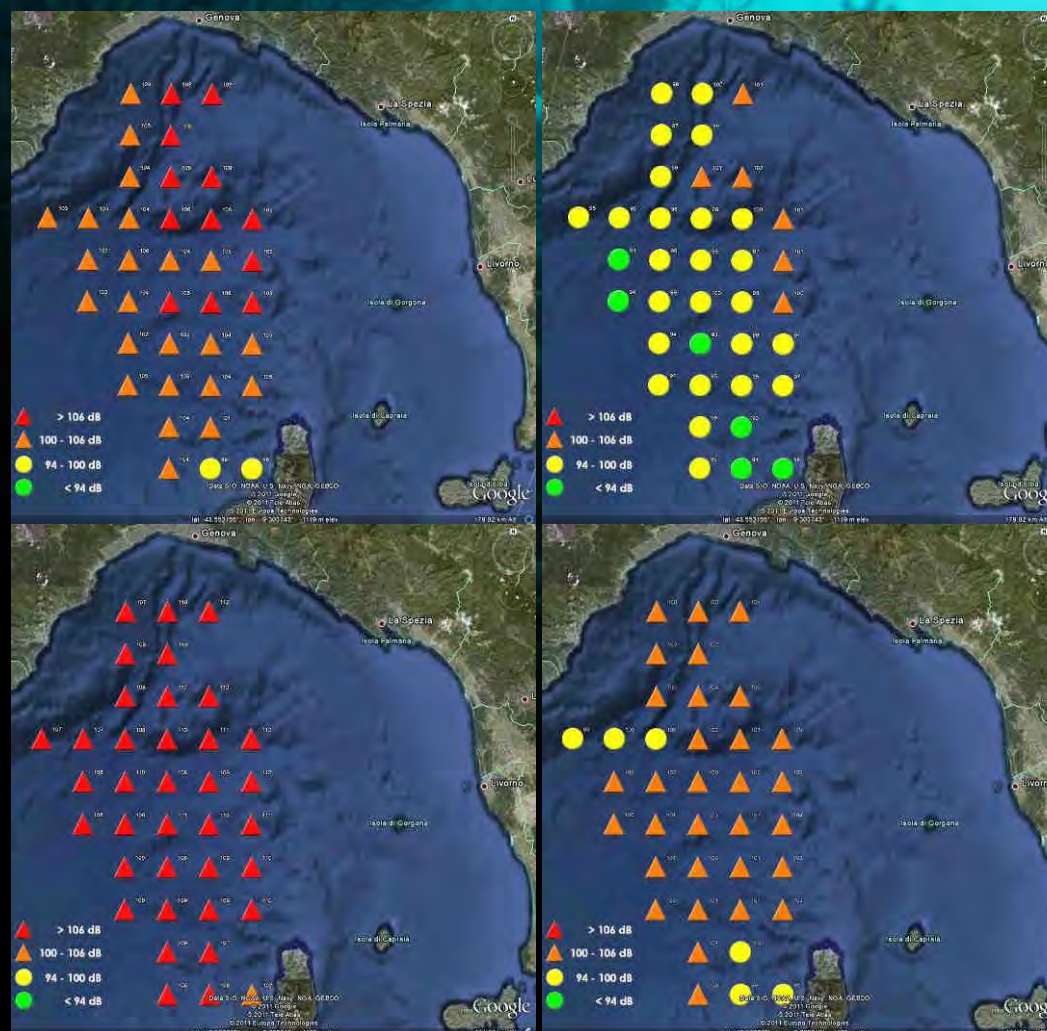
Action 1

Depth
1000 m

January



June



PHASE 3

Action 2



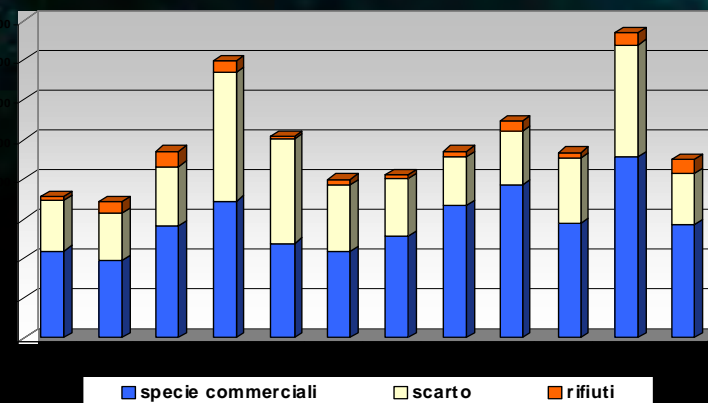
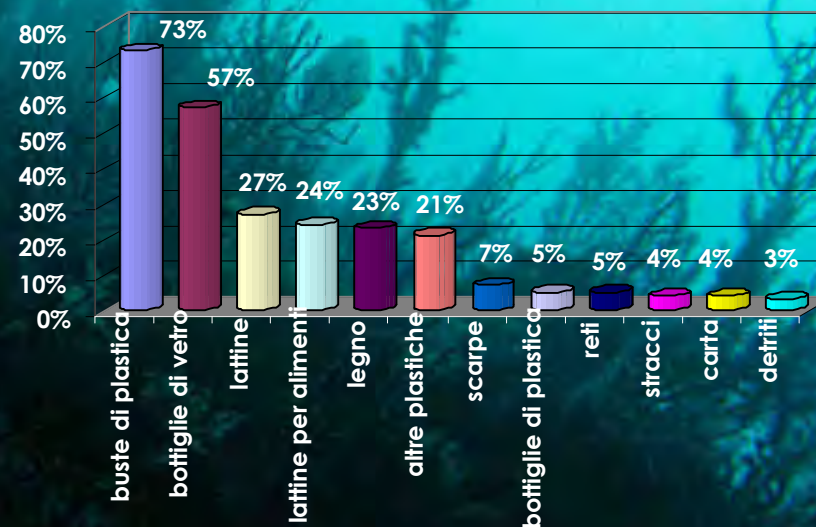
Data Collection Project of EU (**MEDITS**) 1994 - 2011

PHASE 3

Action 1



Frequenza delle diverse tipologie di rifiuti antropici



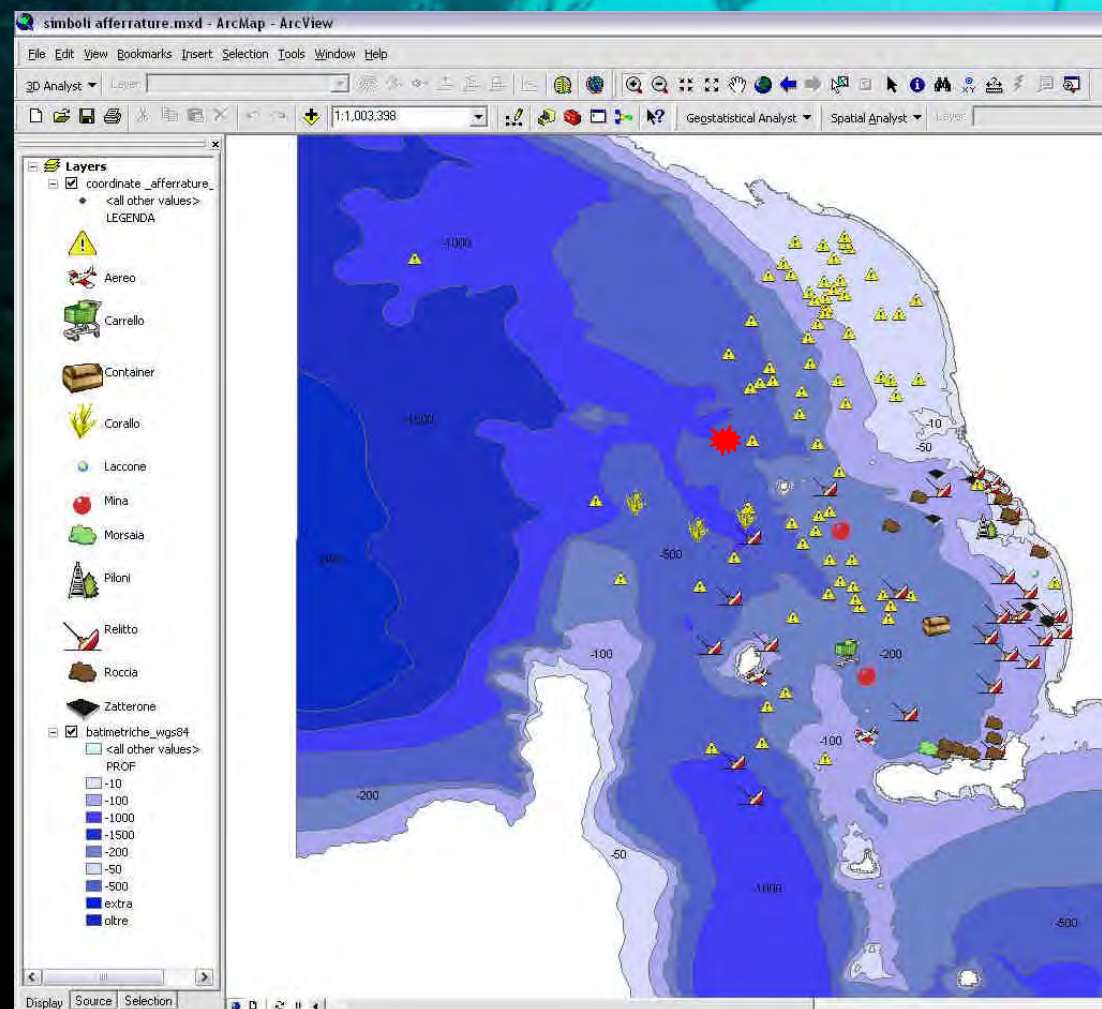
Data Collection of EU: GIS interpolation of debris abundance

PHASE 3

Action 1

Geo-referenciation
of un-trawlable
grounds

EC Venezia



PHASE 8 COMUNICATION

Action1 **Web site** dedicated to the project and
logo design (**[www. gionha.eu](http://www.gionha.eu)**)

Action2 Workshop for presentation project in Livorno
Province headquarters

Action Workshops and congresses
3,4,5,6

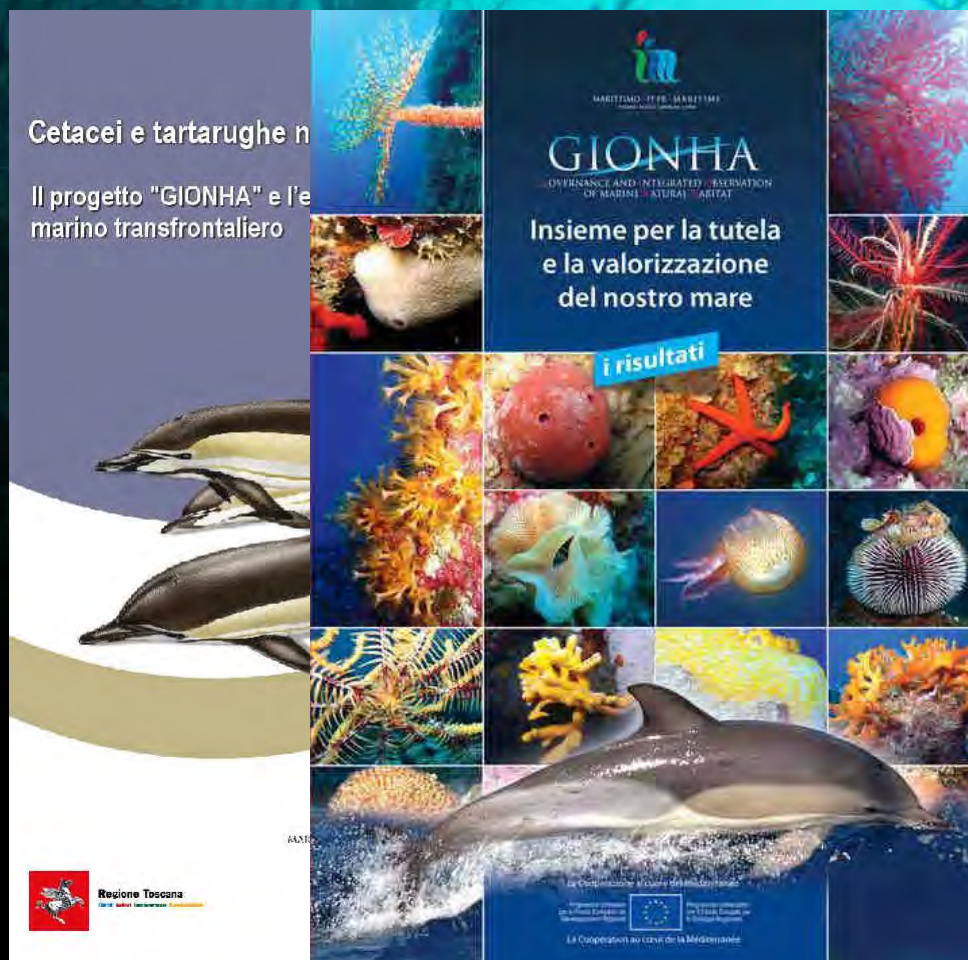
Action7 Publication of **scientific reports**, produced for
the mass media and brochure on the final
results of the project

PHASE 8

Action 7

Publications of
scientific reports,
produced for mass
media and brochure on
the final results of the
project

www.gionha.eu



The Gionha project has
enriched the Siena and
Padova Universities for the
assessment of the HEALTH
STATUS
of sea turtles and cetaceans



In **2011**
over 62 stranded sea turtles
and 28 cetaceans,
14 individuals of sea turtles and
9 cetaceans have been
analysed



f. serena

Grampo - Viareggio 15 April 2012

- ❖ Collision with vessels (turtles)
- ❖ Fishing (cetaceans and turtles)

MORTALITY CAUSES



- ❖ Ingestion of plastic bags (turtles)
- ❖ Environmental pollution (PCB)
- ❖ Morbillivirus (3 individuals)
- ❖ *Toxoplasma gondii* (3 individuals)



ARPAT
Agenzia regionale
per la protezione ambientale
della Toscana

MARITTIMO - IT FL - MARITIME
TOSCANA - SICILIA - SARDEGNA - EMILIA

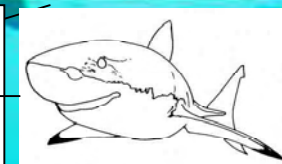
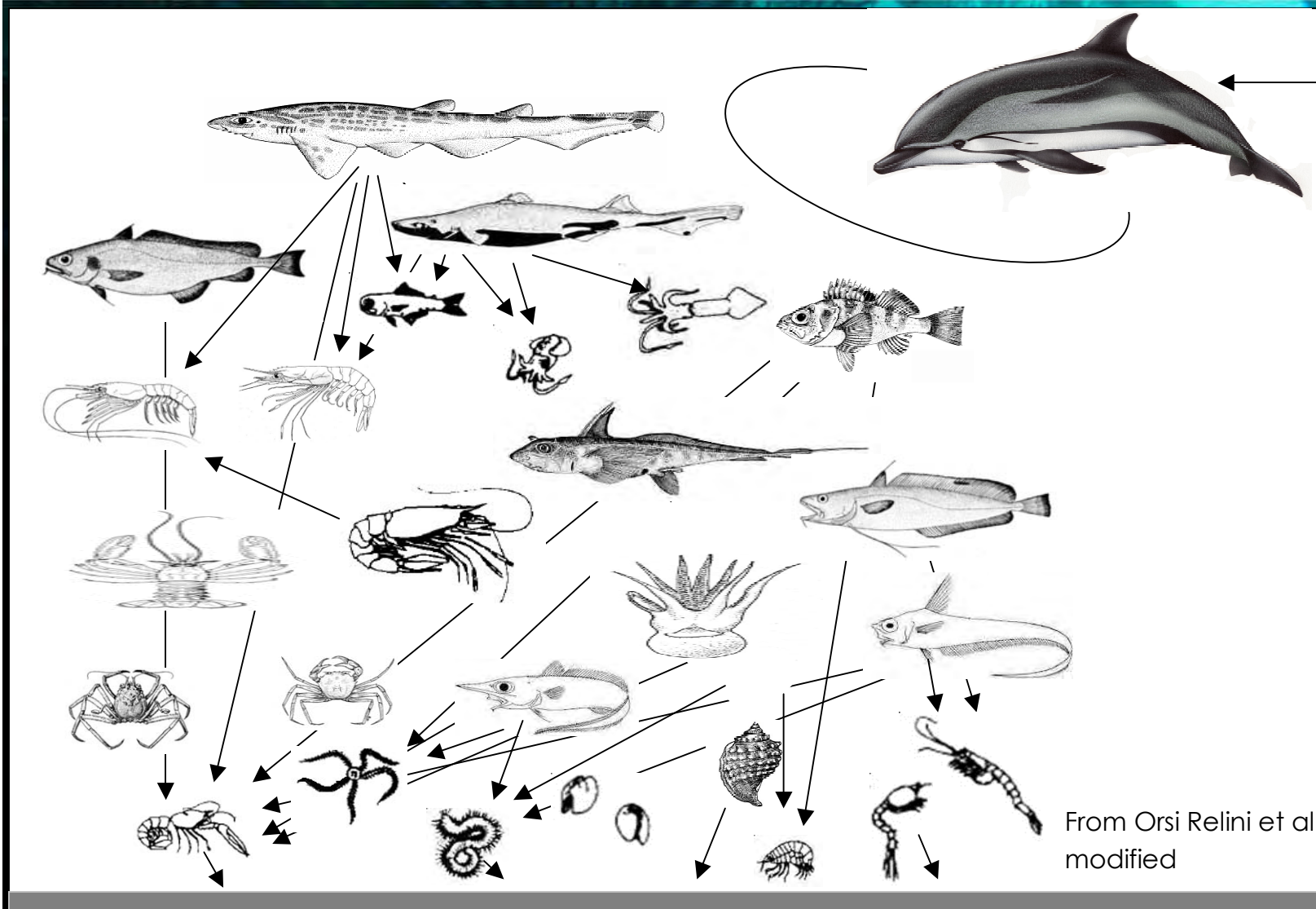


GOVERNANCE AND INTEGRATED OBSERVATION
OF MARINE NATURAL HABITAT



Programma di
sviluppo regionale
della Regione Toscana
Programme cofinancé par le Fonds
Européen de Développement Régional

Regione Toscana



**Main
meshes
of the
Ligurian
bathial
trophic
network**

From Orsi Relini et al.
modified



**Commercial
Species**

**no commercial
Species**

Detritivorous

e.g. *Calocarismaandreae*, *Munida intermedia*, *Galeodea echinophora*

Plankton

mesoconsumers

Nephrops norvegicus
Parapenaeus loringi
Pasiphaea sivado

mesoconsumers

Myctophidae
Etmopterus spinax
Capros aper
Gadiculus argenteus
Merluccius merluccius juv.

mesoconsumers

Merluccius merluccius
Dipturus oxyrinchus
Galeus melastomus
Todaropsis eblanae
Illex coindetii
Lophius spp
Phycis blennoides

mesoconsumers

predators

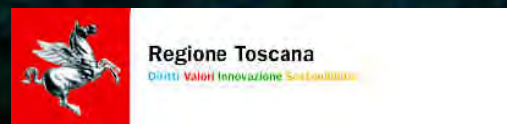
Dolphin

man

**Emergency
EC Venezia
10 nm
North-East
Gorgona Island**

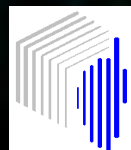


By ISPRA



MOMAR

RETRAPARC



COREM

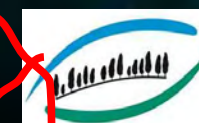
SISTEMA

MARTE +



ARGOMARINE

GIONHA



Beyond the answers that we may supply for dealing with the requests proceeding from the **Marine Strategy Framework Directive** (2008/56/CE), the experience gained through the performance of the “Marittimo programmes”, allowed us to understand the importance of being ready to addressing, in a very concrete and positive way, any environmental emergency.

A photograph of two dolphins leaping from the ocean. The dolphin in the foreground is in mid-air, its body arched as it moves towards the left. Its tail is still submerged, creating a large, energetic splash of white water. The second dolphin is positioned slightly behind and to the right of the first, also in mid-air. The ocean is a deep blue with small, choppy waves. The sky is a pale, clear blue. The text "thank you" is written in a simple, white, sans-serif font in the lower-left area of the image.

thank you