GEBCO Science Day
8 October 2013 ISMAR-Venice

http://www.magicproject.it

MaGIC project: the Italian experience of a common effort of the scientific community to acquire, process, interpret a very large amount HR bathymetric data at a national scale

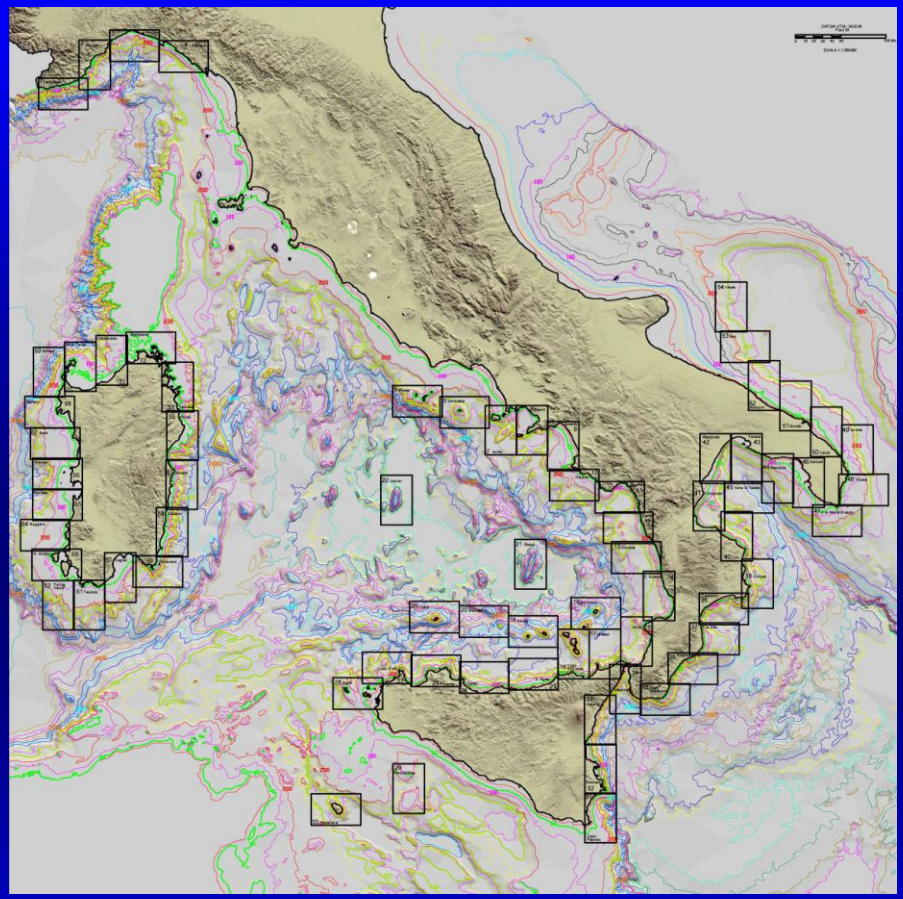
Francesco L. Chiocci and many, many coauthors

***MAGIC* project: *MA*rine *G*eohazard along the *I*talian *C*oasts**

Multibeam mapping (1:50.000) of most of the Italian margins in the depth range 50-500m

5-year period: December 2007-December 2012

Funded by the Italian Civil Protection Department (DPC)



5.25 M€ direct funding +
2 M€ ship-time CNR co-financing

Aims of the Project:

provide DPC a basic tool for monitoring and managing marine geohazards and risk

The whole Italian Marine Geology scientific community is involved in the project

CNR Roma - Istituto di Geologia Ambientale e Geoingegneria

CNR Bologna - Istituto per le Scienze del Mare

CNR Napoli - Istituto per l'Ambiente Marino e Costiero

Università di Genova
Università di Trieste
Università di Roma "La Sapienza"
Università di Palermo
Università di Cagliari
Università di Milano Bicocca
Università di Sassari
Università del Sannio

CoNISMa
Consorzio Nazionale Interuniversitario per le Scienze del Mare

Ist. Naz. Oceanografia e Geofisica Sperimentale, Trieste

OGS

***MAGIC* project: *MA*rine *G*eohazard along the *I*talian *C*oasts**

Tyrrhenian basin and Sicily Channel:

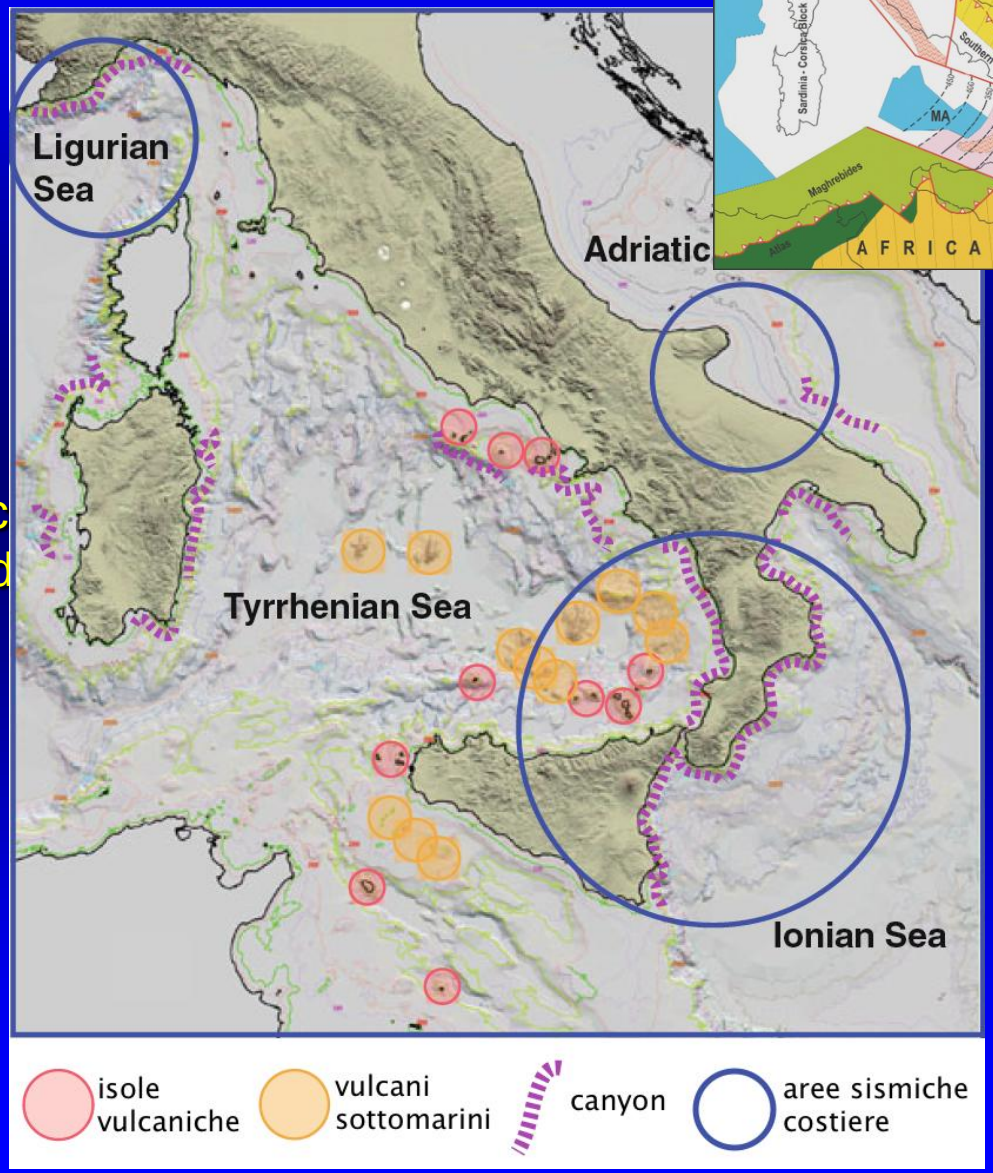
Volcanic activity
Strong seismicity

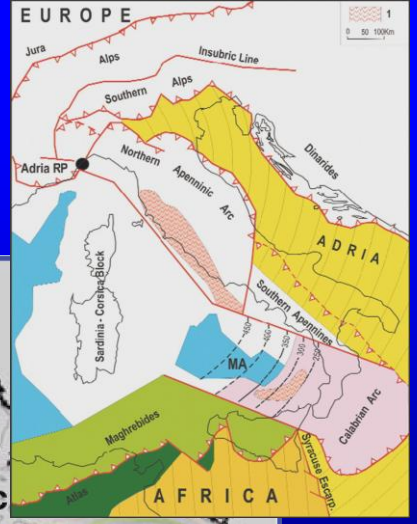
Ionian and South Adriatic:

Fault systems related with tectonic deformation and seismicity on land

All margins:

Canyon incision and sediment instability





MAGIC project: *MA*rine *G*eohazard along the *I*talian *C*oasts

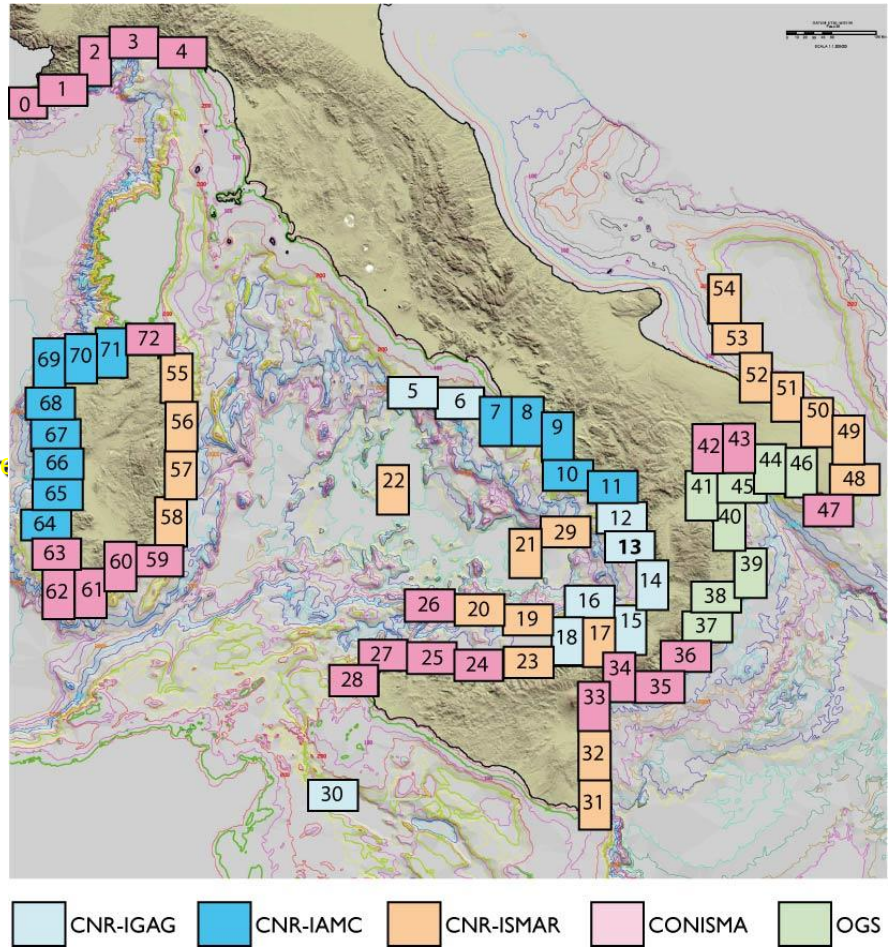
Project Partners

CNR (Consiglio Nazionale delle Ricerche)

- **IGAG** Istituto per la Geologia Ambientale e Geoingegneria - Roma
- **ISMAR** Istituto per le Scienze Marine - Bologna
- **IAMC** Istituto per l'Ambiente Marino e Costiero – Napoli

CoNISMa (Consorzio Nazionale Interuniversitario per le Scienze del Mar

- University of Genova
- University of Trieste
- University of Rome Sapienza
- University of Palermo
- University of Cagliari
- University of Sassari
- University of Milano - Bicocca
- University of Sannio (Benevento)

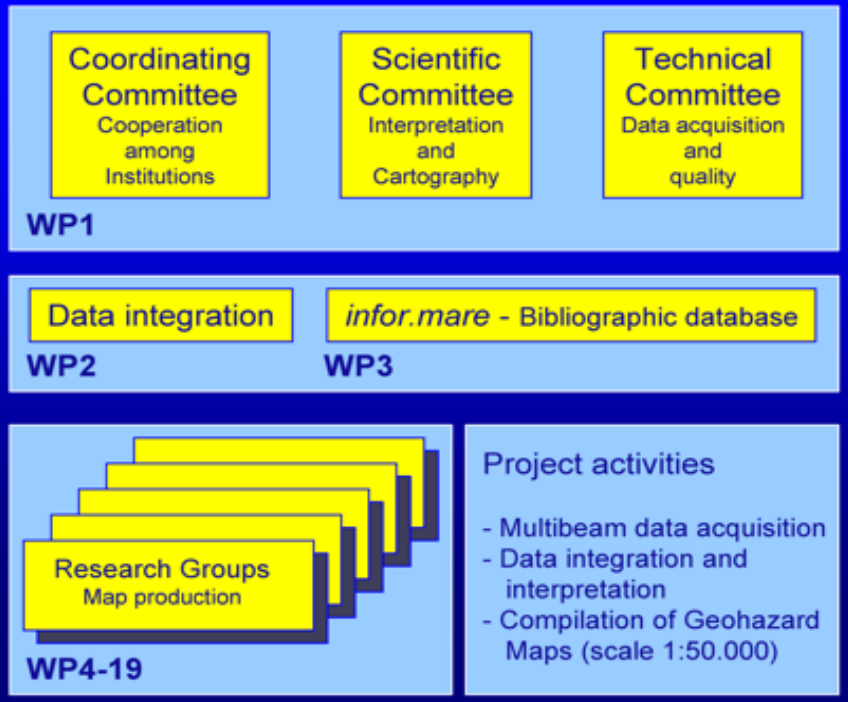


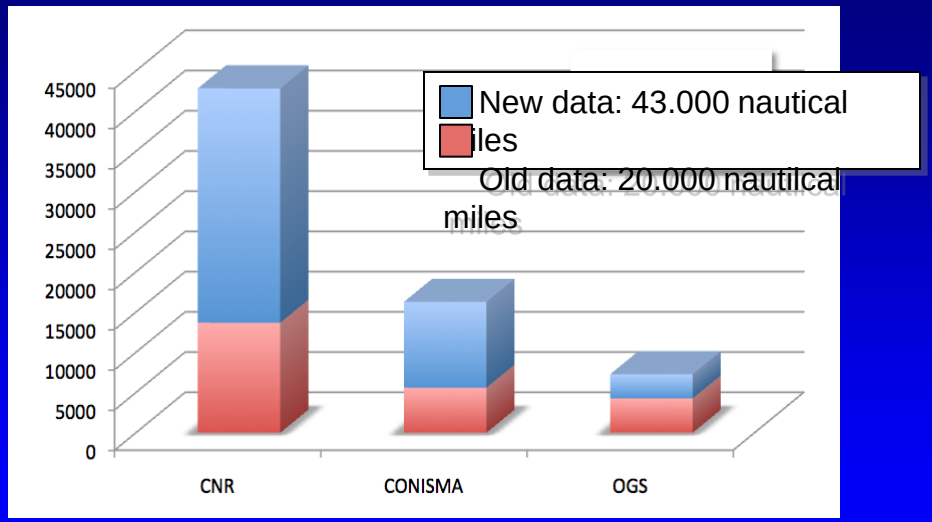
OGS Istituto Nazionale di Oceanografia e Geofisica Sperimentale – Trieste

Main Contractor CNR-IGAG, Rome

Project Leader: Prof. Francesco L. Chiocci

Structure of the project



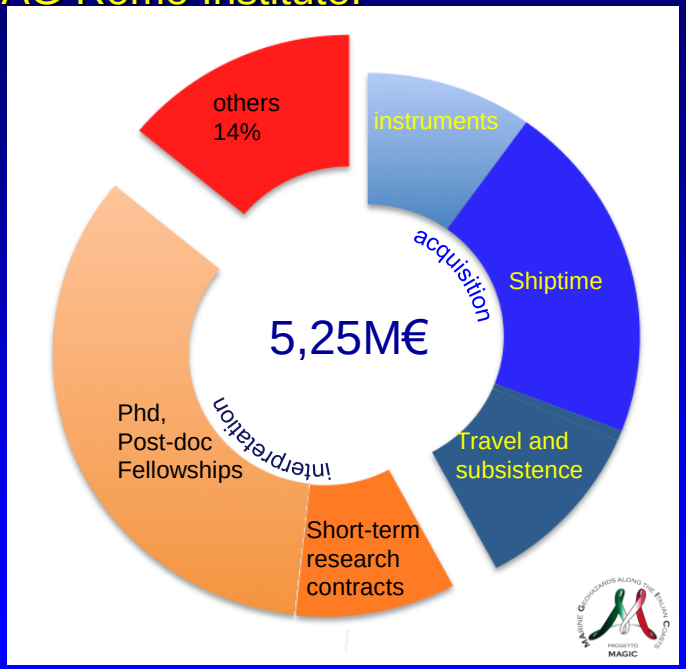


Each sheet is under responsibility of one of the 15 research groups, whose leaders form the Scientific Committee.

Funding is mainly devoted to shiptime and to fellowships and contract for young researchers .

Interpretation criteria and processing procedures are defined by collaborative approach in the committees

Respect of timetable, processing procedures, interpretation criteria is centralised at the CNR-IGAG Rome Institute.



Cronoprogramma Magic

Aggiornamento del **27/01/2011**

Legenda :
- Acquisizione non terminata
- Acquisizione completata
- Fogli consegnati entro il 2° anno
- FU — Riconsegna Foglio "Follow Up Foglio" (se le acquisizioni sono terminate dopo la consegna del foglio)
- LAVORO CONSEGNATO fino al 3°ANNO (con scritta arancio i rilasci non richiesti- in più)
- Mancanti

OS	UNI	Moduli	# Foglio	Nome	1°ANNO 1°semestre Acquisiz. Pregressa	1°ANNO 2°semestre Consegna Foglio (comprendente solo i livelli interpretativi 3-4)	2°ANNO 1°semestre Acquisiz. con nave	2°ANNO 2°semestre Acquisiz. con nave	2°ANNO 2°semestre Consegna Foglio	2°ANNO 2°semestre Consegna Schede UM+note	2°ANNO 2°semestre Consegna Note a compendio
Conisma	UniTS	4	1	Ventimiglia	Pre						
	UniTS	4	2	Savona	Pre						
	UniTS	4	3	Genova	Pre						
	UniTS	9	4	La Spezia							
	UniTS	12	35	Capo Spartivento			nave		Foglio		
	UniPA	9	24	Cefalù							
	UniPA	9	25	Palermo				nave	Foglio		
	UniPA	9	26	Ustica	Pre	Foglio		nave	FU		
	UniPA	9	27	Capo S. Vito							
	UniPA	9	28	Egadi							
	UniPA	9	29	Ferdinandea							
	UniRM	11	33	Catania	Pre	Foglio	nave			Schede	
	UniRM	11	34	Messina	Pre	Foglio	nave			Schede	
	UniMIB	13	36	Sideno	Pre	Foglio	nave		FU	Schede	
	UniMIB	13	47	S.Maria di Leuca	Pre				Foglio		
	UniSannio	15	42	Metaponto	Pre				Foglio		
	UniSannio	15	43	Taranto							
	UniCA	18	59	Carbonara				nave			
	UniCA	18	60	Cagliari				nave			
	UniCA	18	61	Teulada							
	UniCA	18	62	Toro e Vacca				nave	Foglio		
	UniCA	18	63	S.Antioco				nave			
	UniSS	18	72	Maddalena							
ISMAR		8	17	Milazzo	Pre	Foglio				Schede	
		8	19	Alicudi -Filicudi	Pre	Foglio		nave	FU	Schede	
		8	20	Sisifo Eolo Enarete	Pre	Foglio			FU	Schede	
		8	21	Marsili	Pre	Foglio			FU	Schede	
		8	21b	Vulcano-Palinuro	Pre						
		8	22	Vavilov	Pre	Foglio			FU	Schede	
		8	23	S. Agata							
		10	31	Capo Passero	Pre				Foglio		
		10	32	Siracusa	Pre				Foglio		
		16	48	Tricase							
		16	49	Otranto							
		16	50	Lecce							
		16	51	Brindisi	Pre			nave			
		16	52	Monopoli	Pre			nave	Foglio		
		16	53	Bari	Pre	Foglio			FU	Schede	
		16	54	Vieste	Pre	Foglio			FU	Schede	
		17	55	Tavolara				nave			
		17	56	Orosei							
		17	57	Arbatax							
		17	58	Costa Rei							
IAMC		6	7	Ischia	Pre	Foglio			FU	Schede	
		6	8	Napoli	Pre	Foglio			FU	Schede	
		6	9	Salerno	Pre	Foglio			FU	Schede	
		6	10	Palinuro	Pre	Foglio			FU	Schede	
		6	11	Maratea	Pre	Foglio			FU	Schede	
		19	64	Buggerru							
		19	65	Piscinas							
		19	66	Oristano							
		19	67	Bosa					Foglio		
		19	68	Alghero					Foglio		

Non sono previste consegne di Schede e Note.

Non sono previste consegne di Schede e Note.

Nome	3°ANNO 1°semestre Acquisiz. con nave	3°ANNO 1°semestre Acquisiz. con barchino	3°ANNO 1°semestre Consegna Foglio	3°ANNO 1°semestre Consegna Schede UM+note	3°ANNO 1°semestre Consegna Note a compendio	3°ANNO 2°semestre Acquisiz. con nave	3°ANNO 2°semestre Acquisiz. con barchino	3°ANNO 2°semestre Consegna Foglio	3°ANNO 2°semestre Consegna Schede UM+note	3°ANNO 2°semestre Consegna Note a compendio
Ventimiglia							barchino	Foglio		
Savona							barchino			
Genova							barchino			
La Spezia	nave						barchino	Foglio		
Capo Spartivento			FU							
Cefalù						nave				
Palermo			FU	Schede						Note (crossed out)
Ustica					Note				Schede (crossed out)	
Capo S. Vito										
Egadi										
Ferdinandea										
Catania			FU		Note					
Messina			FU		Note					
Sideno			FU	FU Schede	Note			FU	FU Schede	FU Note
S.Maria di Leuca	nave		FU	Schede				FU	FU Schede	Note
Metaponto			FU	Schede						Note
Taranto						nave		Foglio		
Carbonara	nave									
Cagliari										
Teulada	nave									
Toro e Vacca			FU	Schede	Note					
S.Antioco								Foglio	Schede	Note
Maddalena							barchino	Foglio	Schede	
Milazzo	nave				Note			FU (crossed out)	FU Schede (crossed out)	
Alicudi -Filicudi					Note					
Sisifo Eolo Enarete					Note					
Marsili					Note					
Vulcano-Palinuro								Foglio (crossed out)	Schede (crossed out)	Note (crossed out)
Vavilov					Note					
S. Agata	nave							Foglio		
Capo Passero			FU	Schede	Note					
Siracusa			FU	Schede	Note					
Tricase										
Otranto						nave				
Lecce						nave				
Brindisi								Foglio		
Monopoli									Schede	Note
Bari					Note					
Vieste					Note					
Tavolara								Foglio		
Orosei										
Arbatax										
Costa Rei										
Ischia					Note					
Napoli					Note					
Salerno					Note					
Palinuro										Note (crossed out)
Maratea					Note					
Buggerru										
Piscinas										
Oristano								Foglio	Schede	
Bosa	nave			Schede				FU		
Alghero	nave			Schede				FU	FU Schede	

Nome	4°ANNO 1°semestre Acquisiz. con nave	4°ANNO 1°semestre Acquisiz. con barchino	4°ANNO 1°semestre Consegna Foglio	4°ANNO 1°semestre Consegna Schede UM+note	4°ANNO 1°semestre Consegna Note a compendio	4°ANNO 2°semestre Acquisiz. con nave	4°ANNO 2°semestre Acquisiz. con barchino	4°ANNO 2°semestre Consegna Foglio	4°ANNO 2°semestre Consegna Schede UM+note	4°ANNO 2°semestre Consegna Note a compendio
Ventimiglia				Schede	Note					
Savona								Foglio	Schede	Note
Genova								Foglio	Schede	Note
La Spezia				Schede	Note					
Capo Spartivento				Schede	Note					
Cefalù										
Palermo					Note					
Ustica				Schede						
Capo S. Vito	nave						barchino	Foglio	Schede	Note
Egadi	nave						barchino			
Ferdinandea	nave							Foglio	Schede (struck out)	Note (struck out)
Catania										
Messina										
Sideno										
S.Maria di Leuca										
Metaponto										
Taranto				Schede	Note					
Carbonara										
Cagliari								Foglio	Schede	Note
Teulada							barchino	Foglio	Schede	Note
Toro e Vacca										
S.Antioco										
Maddalena					Note					
Milazzo			FU	FU Schede						
Alicudi -Filicudi										
Sisifo Eolo Enarete										
Marsili										
Vulcano-Palinuro										
Vavilov										
S. Agata				Schede	Note					
Capo Passero										
Siracusa										
Tricase	nave							Foglio	Schede	Note
Otranto								Foglio	Schede	Note
Lecce										
Brindisi				Schede	Note					
Monopoli										
Bari										
Vieste										
Tavolara										
Orosei										
Arbatax										
Costa Rei										
Ischia										
Napoli										
Salerno										
Palinuro					Note					
Maratea										
Buggerru						nave		Foglio	Schede	Note
Piscinas						nave		Foglio	Schede	Note
Oristano						nave		FU		Note
Bosa						nave		FU	FU Schede	Note
Alghero						nave		FU		Note

Nome	5°ANNO 1°semestre Acquisiz. con nave	5°ANNO 1°semestre Acquisiz. con barchino	5°ANNO 1°semestre Consegna Foglio	5°ANNO 1°semestre Consegna Schede UM+note	5°ANNO 1°semestre Consegna Note a compendio	5°ANNO 2°semestre Consegna Foglio	5°ANNO 2°semestre Consegna Schede UM+note	5°ANNO 2°semestre Consegna Note a compendio
Ventimiglia								
Savona								
Genova								
La Spezia								
Capo Spartivento								
Cefalù			Foglio	Schede	Note			
Palermo								
Ustica								
Capo S. Vito								
Egadi			Foglio	FU Schede	FU Note			
Ferdinandea			Foglio (crossed out)	FU Schede (crossed out)	FU Note (crossed out)			
Catania								
Messina								
Sideno								
S.Maria di Leuca								
Metaponto								
Taranto								
Carbonara			Foglio	Schede	Note			
Cagliari								
Teulada								
Toro e Vacca								
S.Antioco								
Maddalena								
Milazzo								
Alicudi -Filicudi								
Sisifo Eolo Enarete								
Marsili								
Vulcano-Palinuro			Foglio	Schede	Note			
Vavilov								
S. Agata								
Capo Passero								
Siracusa								
Tricase								
Otranto								
Lecce			Foglio	Schede	Note			
Brindisi								
Monopoli								
Bari								
Vieste								
Tavolara								
Orosei								
Arbatax								
Costa Rei								
Ischia								
Napoli								
Salerno								
Palinuro								
Maratea								
Buggerru								
Piscinas								
Oristano								
Bosa								
Alghero								

Nota: Foglio Ferdinandea consegna anticipata di un semestre con pagamanto al

...rbatrax consegna anticipata con pagamanto al 5° anno.

Nota: Qualora l'acquisizione dei Fogli IAMC area Sardegna venga anticipata al semestre precedente (per motivi di disponibilitá nave), devono essere conseguentemente anticipate allo stesso semestre le consegne dei Foglii , delle Schede e delle Note a compendio.

All the project milestones have been timely accomplished

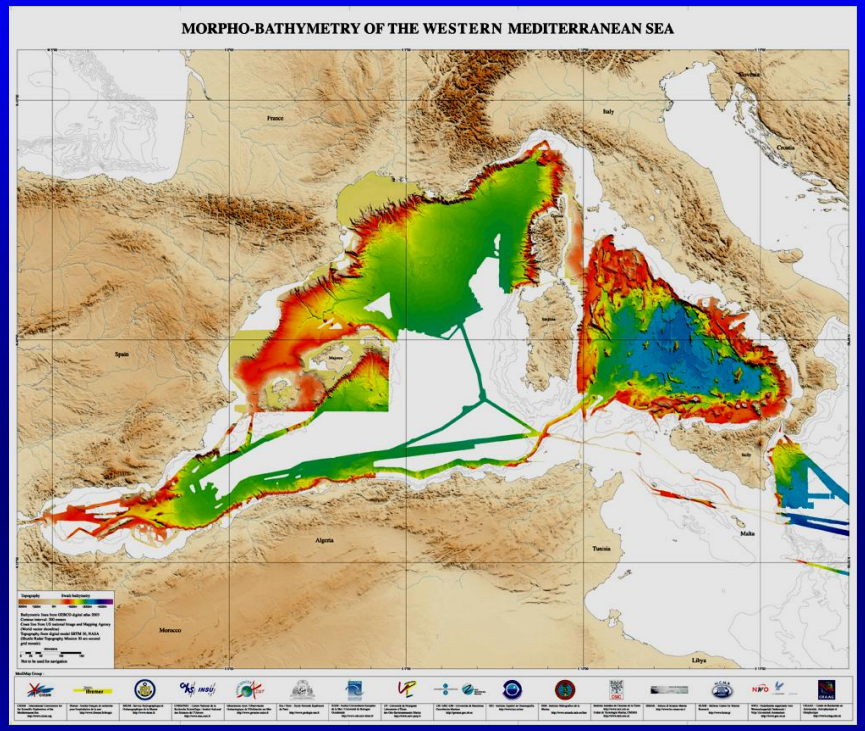
~~N/O Thethis~~ (CNR)
N/O Maria Grazia (CNR)

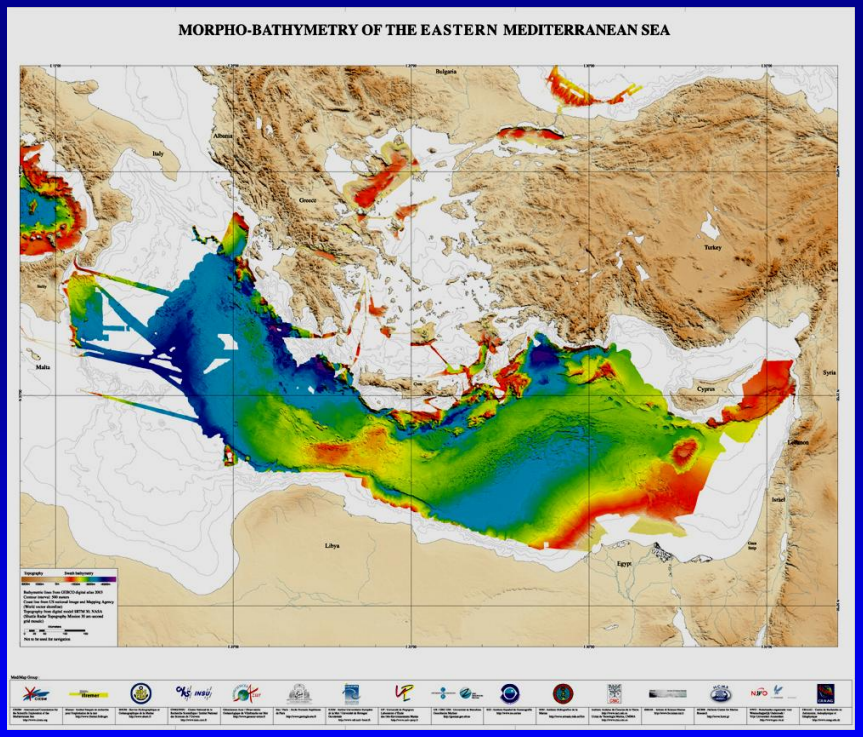
450 kHz, 0-120m
100 kHz, 25-1000 m

500 ship-days

THE COST (per km^2) IS WATER DEPTH DEPENDENT

MEDIMAP/CIESM





Ifremer-Brest

ISMAR-CNR Bologna

CNRS-Insu

Universitat de Barcelona

Universitat de Madrid

Universidad de Granada

Universiteit Amsterdam3

Unitat de Tecnologia Marina, CMIMA/CSIC, Barcelona.

Eurostrataform, Eurodelta and Eurodom

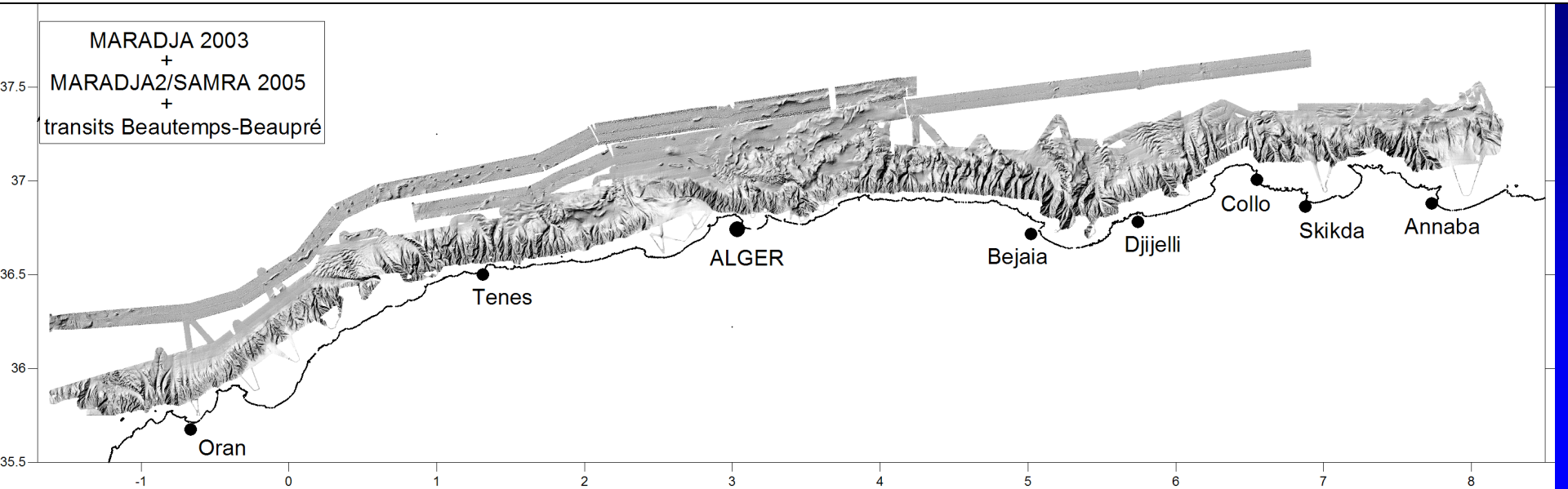
ESF Eurocores projects

West-Med and Spacoma

Spanish RTD projects

Grandes and Prodelta

Algeria: Cruises MARADJA 2003 - 2005



50km

1000

100

10

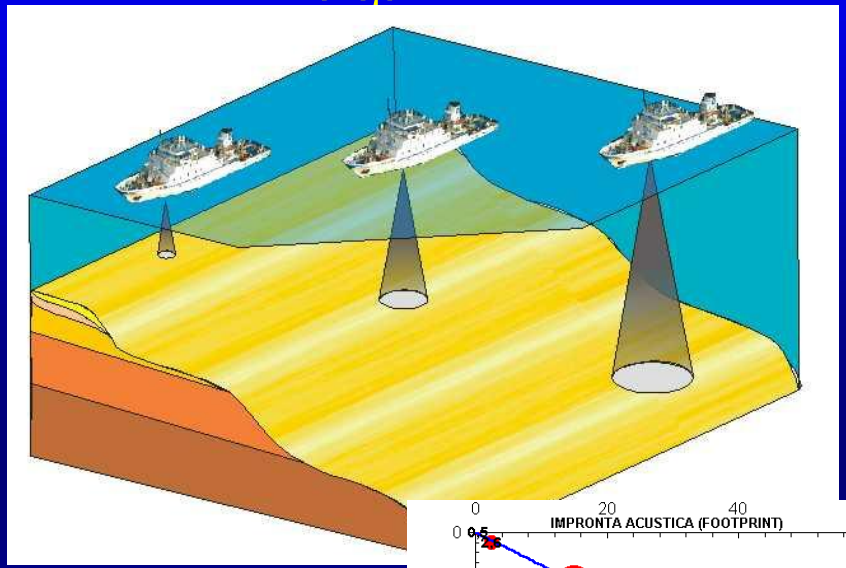
2000

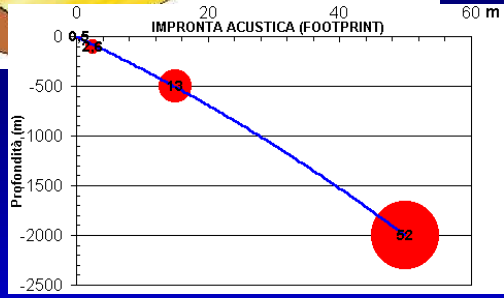
Ionian Sea

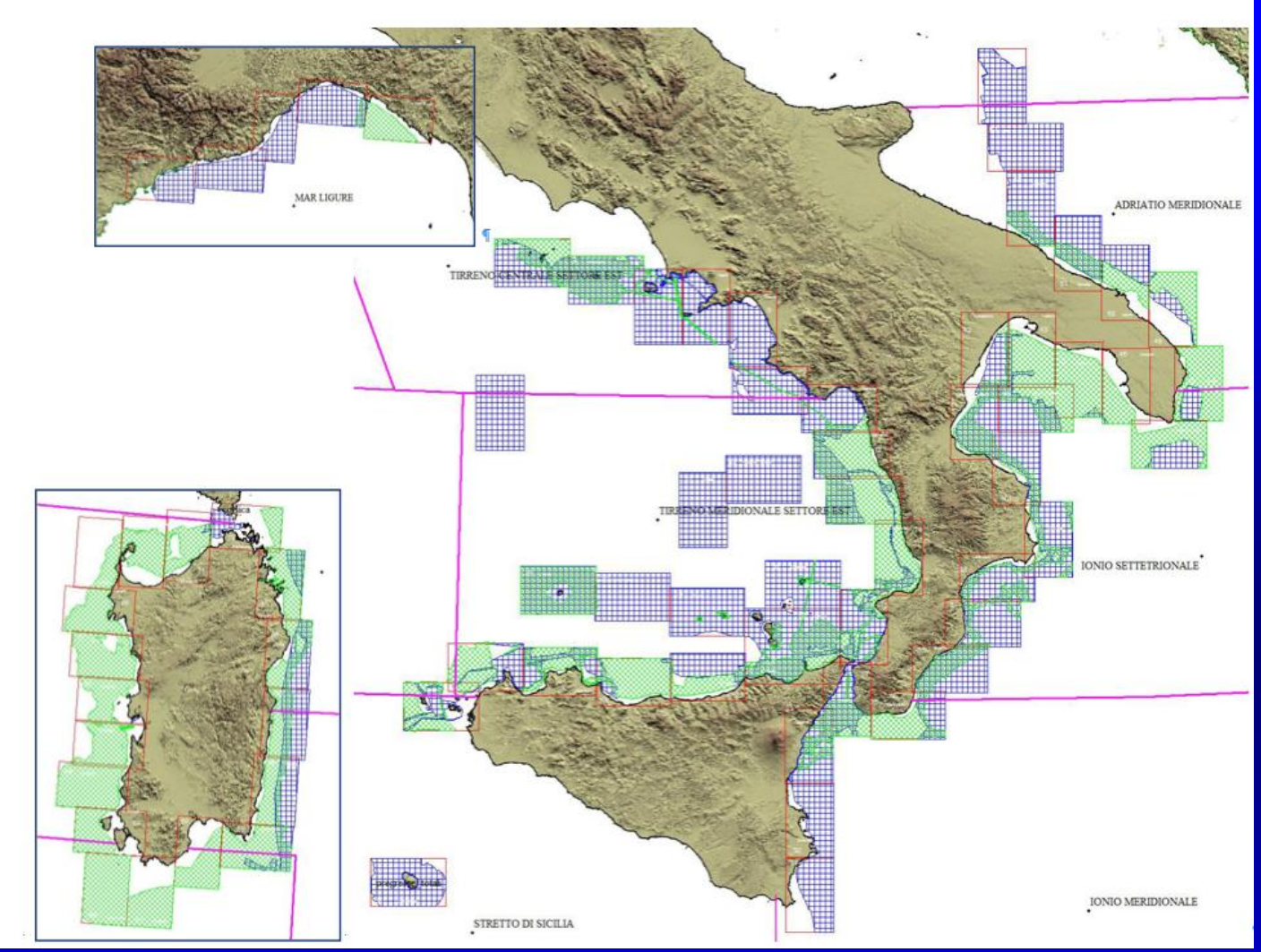
3000
Water depth

Marani et al., 2004

Seafloor coverage for one shiptime day (24h) of data



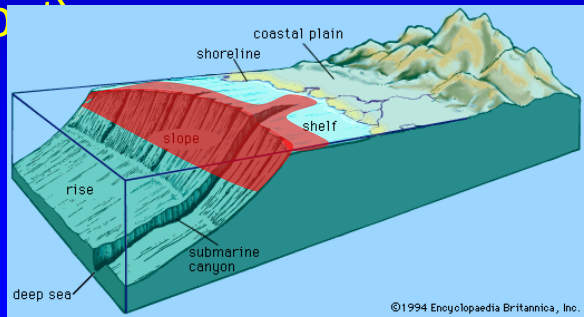




Therefore MaGIC project acquired data along the continental margins, with a reference depth range 50-500.

It can be extended to deeper water if time allows (low-co
and to shallow water if needed (e.g. canyon head)

It can be narrowed to outer shelf
if not relevant features are present



Goals of MaGIC project:

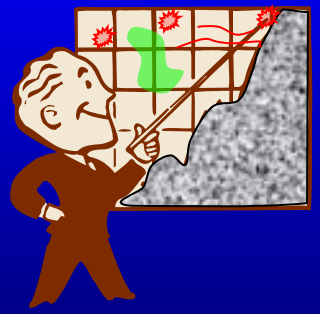
INTEREST FOR CIVIL PROTECTION

FALL OUT FOR SCIENTIFIC RESERACH

1) To realise the Map of Geohazard features of the Italian Seas (72 sheets, 1:50.000)

To identify areas with high risk, hypothesise causes and manage operations during emergencies, land planning (?)

Understand, by comparing features and interpretations, mass wasting processes in our tectonically active country



2) To create a high-resolution bathymetric database

Managing emergencies understanding of what happened

Triplicationof the amount of multibeam data acquired until now, needed base for any scientific study

3) To create a database of maps from scientific literature (infor.mare sub-project)

Quick identification of state of knowledge and competencies in a given area

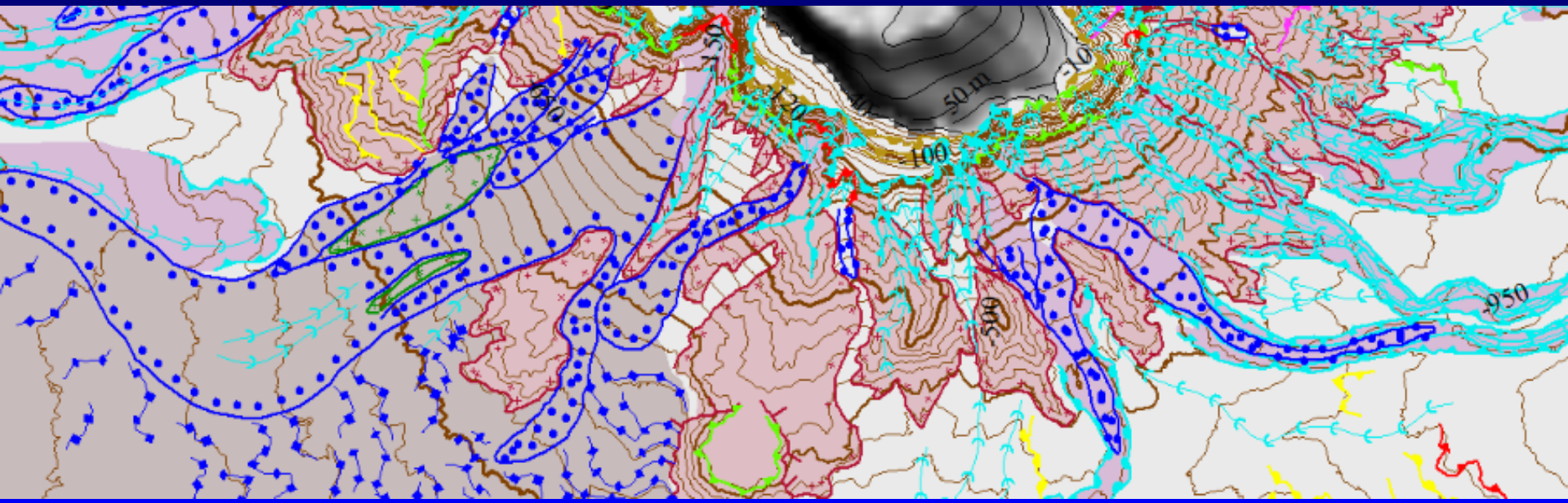
Previous knowledge synthesis tool

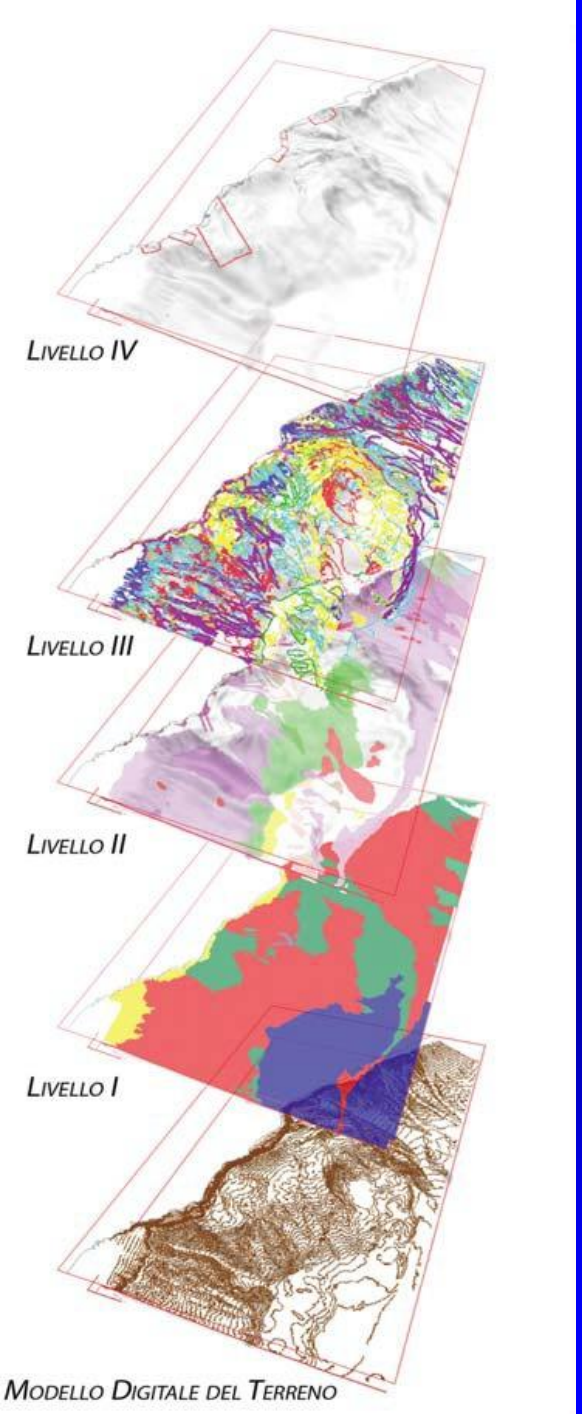
“Map of Geohazard Features of the Italian Seas”

How do we define criteria of objective interpretation and homogenous representation independent from context an interpreter experience?

How do we identify geohazards from only multibeam morphology (i.e. possibly ignoring the real genesis of some/most of the features)?

Solution: to map ALL and ONLY features having morphobathymetric expression





Criteria of representation of geohazard features of the Italian Seas

1 - show all the available information, maintaining a good readability of the map in terms of geohazards

2 - set up criteria to define, identify and map geohazard features homogeneously

3 - establish a hierarchy among the information, trough different mapping levels

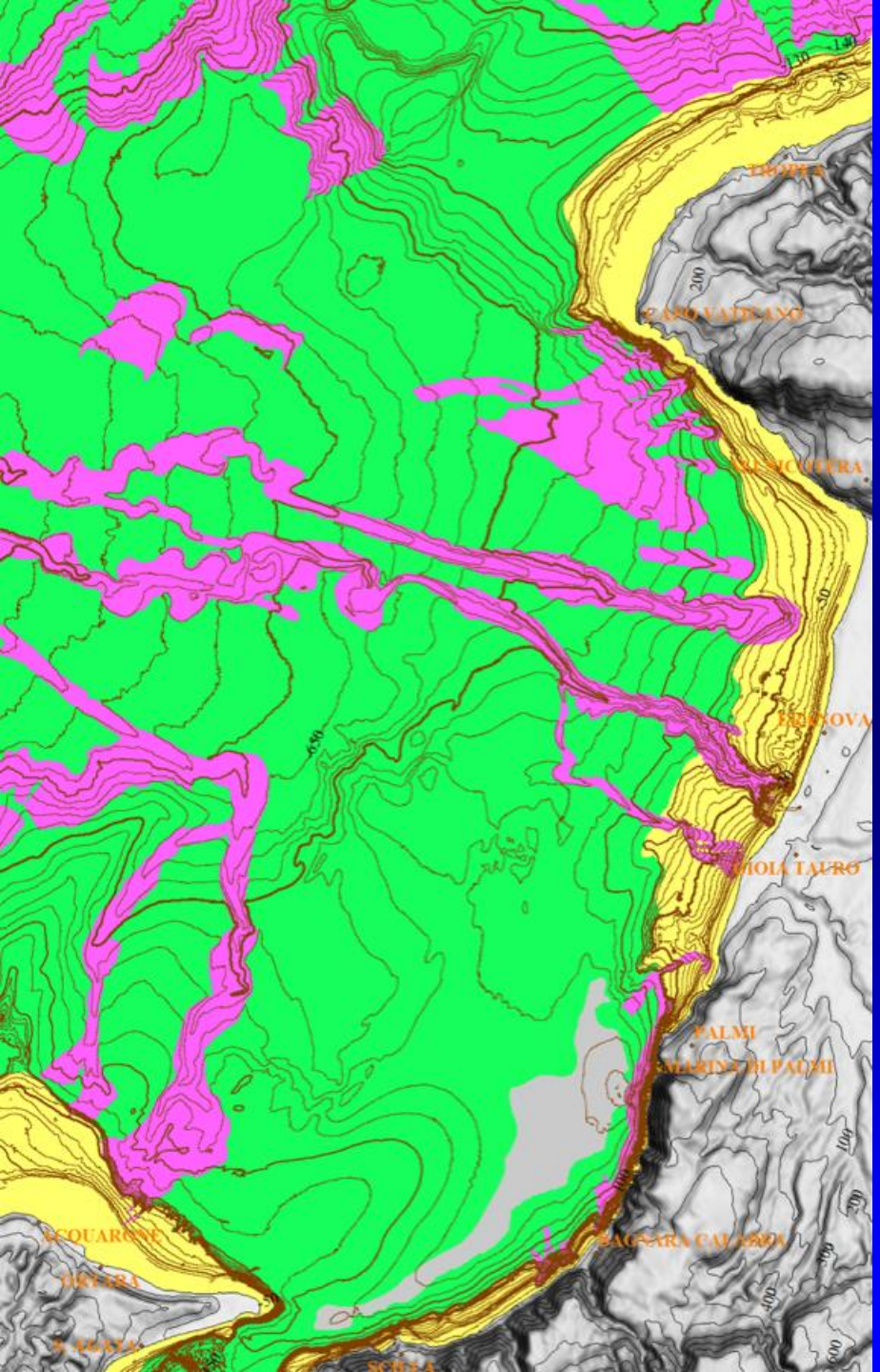
FOUR LEVEL REPRESENTATION

1st Physiographic domains (1:250.000 areas)

2nd Morphostructural units (1:50.000 areas + database)

3rd Morphpologic features (1:50.000 vectors)

4th Critical points (detailed scale - variable highlights)



FOUR LEVEL REPRESENTATION

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(1:250.000 areas)

2^nd^ Morphostructural units
(1:50.000 areas + database)

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(1:50.000 vectors)

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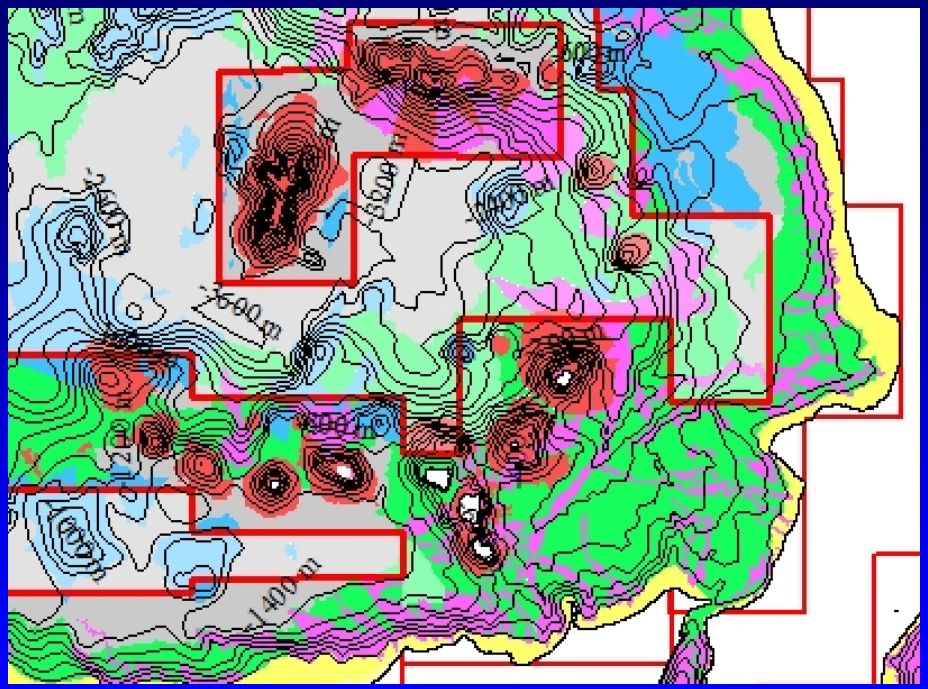
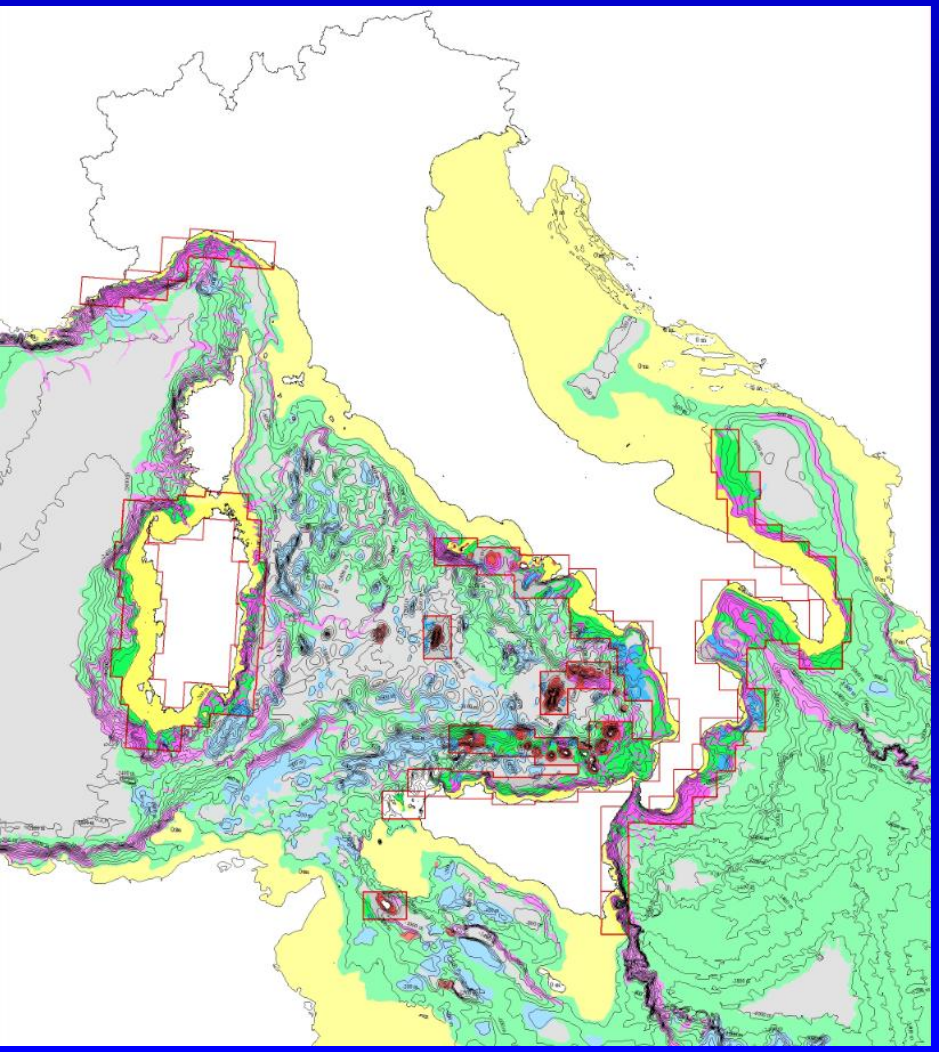
(detailed scale - variable highlights)



Map of the physiographic domains of the seas surronding Italy 1:250.000 scale



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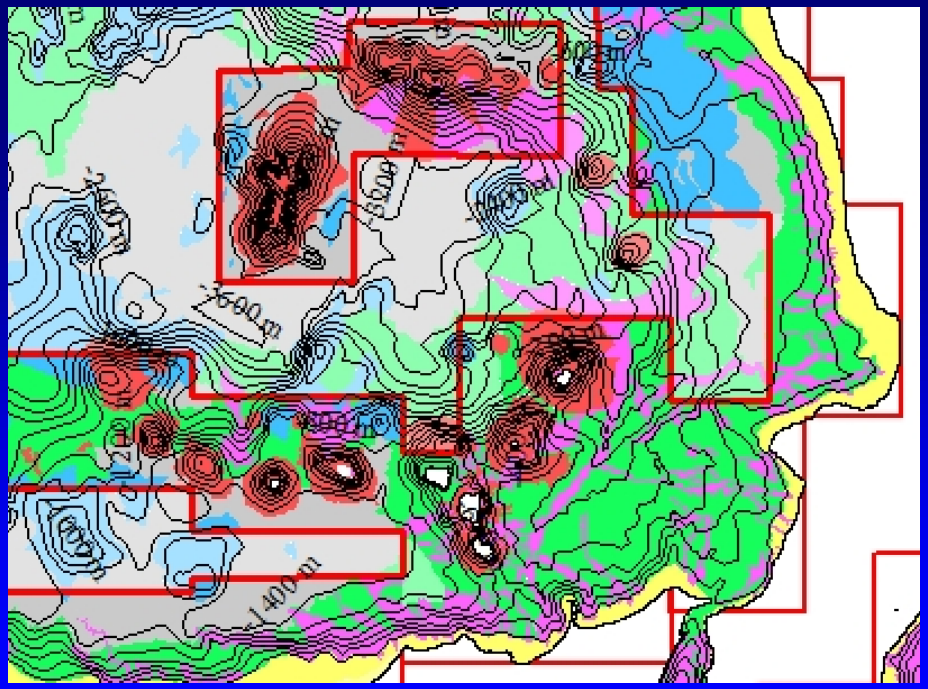
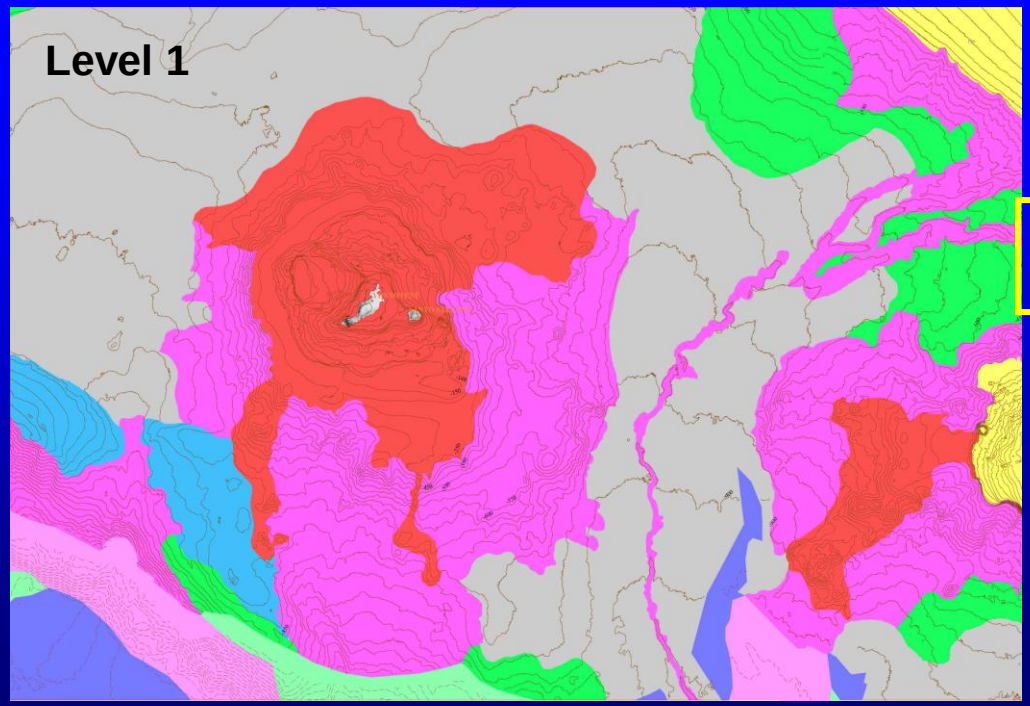
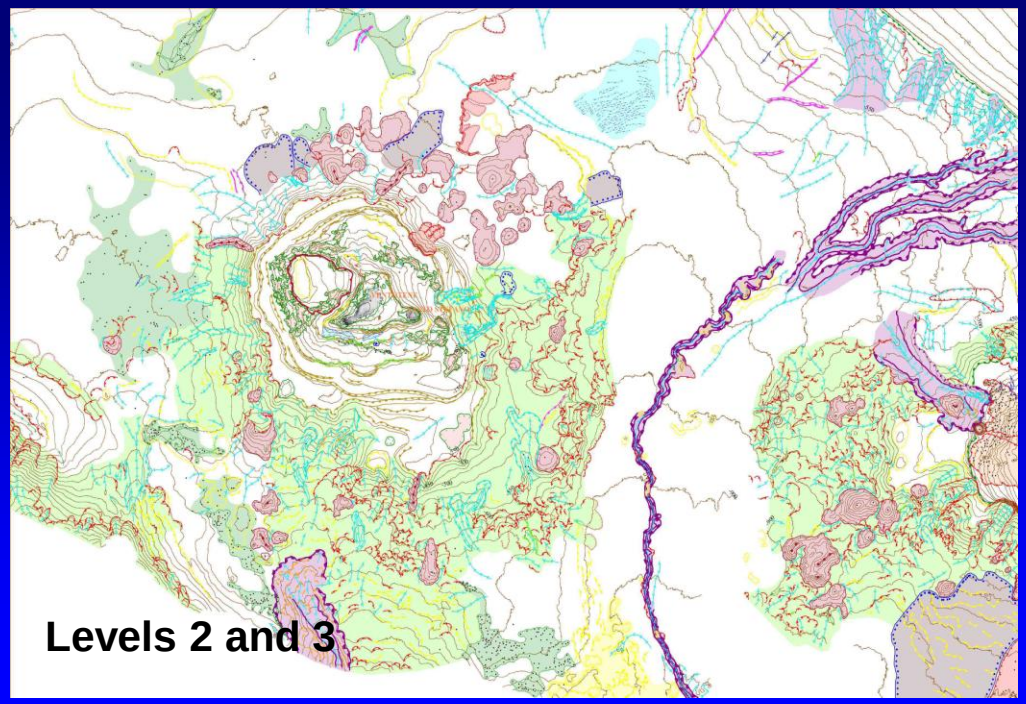
3^rd^ Morphpologic features (1:50.000 vectors)

4^th^ Critical points (detailed scale - variable highlights)







FOUR LEVEL REPRESENTATION

1st Physiographic domains
(1:250.000 areas)

2nd Morphostructural units
(1:50.000 areas + database)

3rd Morphpologic features
(1:50.000 vectors)

4th Critical points
(detailed scale - variable highlights)

Represented as color areas in 1:50.000 maps
+ accompanying morphometric sheet for each unit

Erosional Channels and Canyons (CCE)

Single Slide (FRS)

Widespread Erosion Area (ERD)

Erosional Amphiteatre Thalweg (TAE)

Bedform Area (FOF)

Fluid Escape Area (FUF)

Unchannalised Flux Area (FNC)

Rocky bedrock Area (ASL)

Volcanic bedrock Area (AFV)

Tectonic Line (LIT)

3rd Level - Morhobathymetric elements (EM)

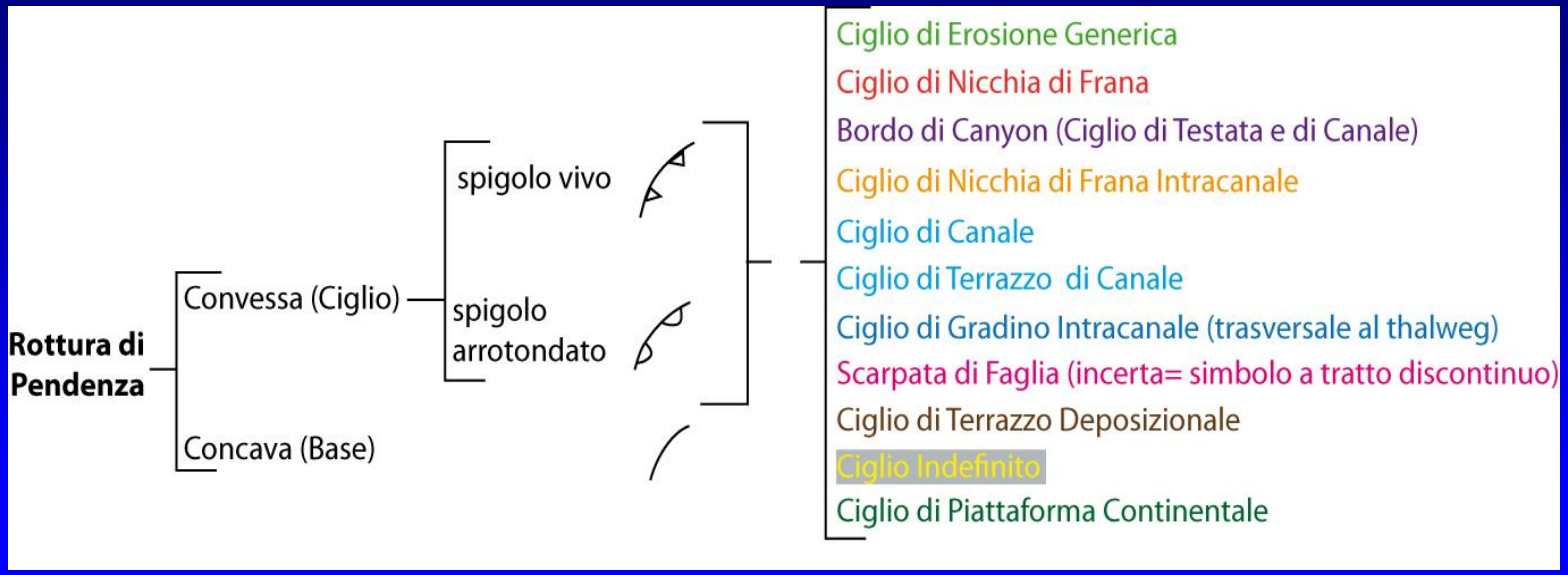
FOUR LEVEL REPRESENTATION

1st Physiographic domains (1:250.000 areas)

2nd Morphostructural units (1:50.000 areas + database)

3rd Morphpologic features (1:50.000 vectors)

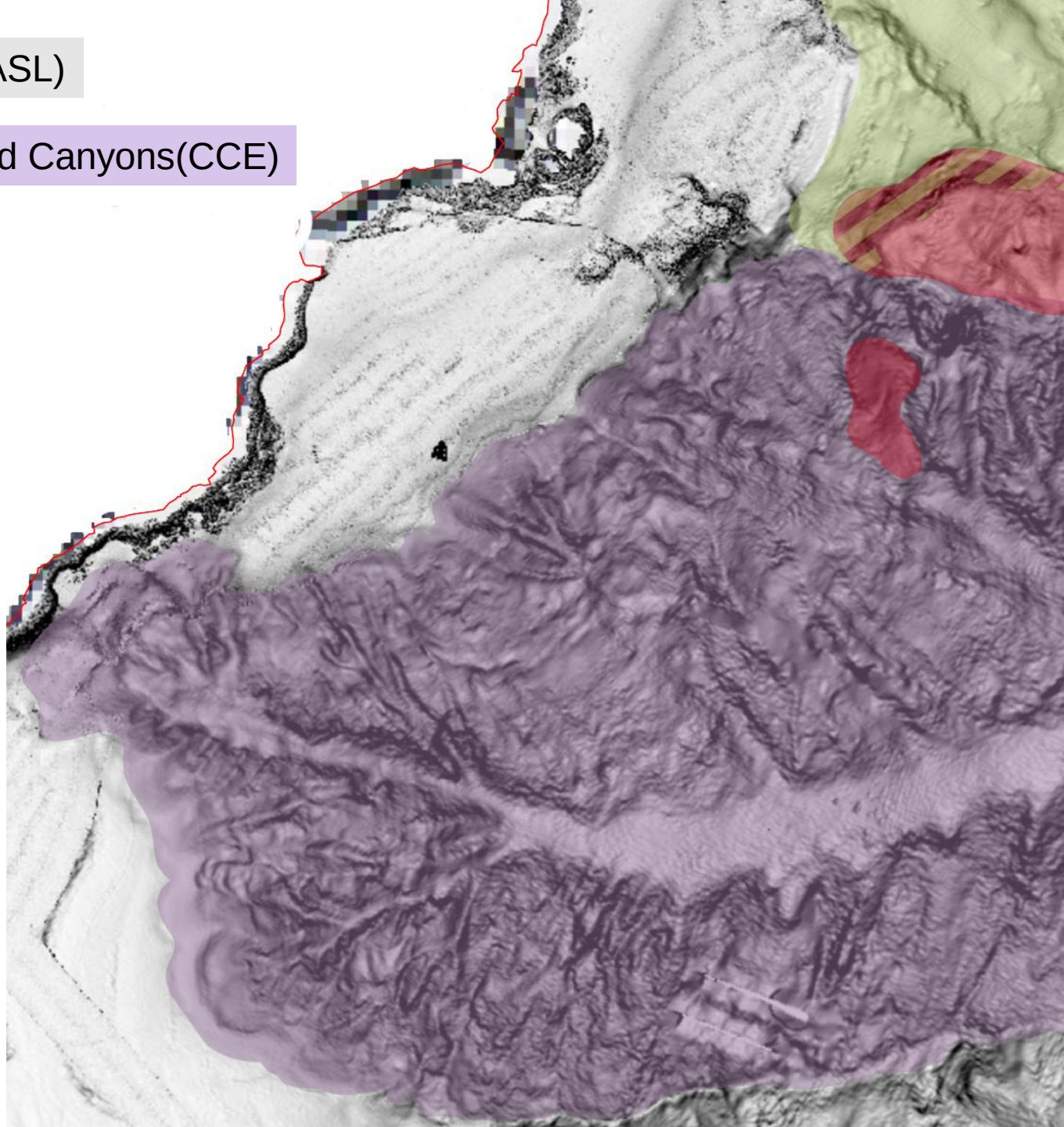
4th Critical points (detailed scale - variable highlights)



Rocky Bedrock Area (ASL)

Erosional Channels and Canyons(CCE)

Single Slide (FRS)

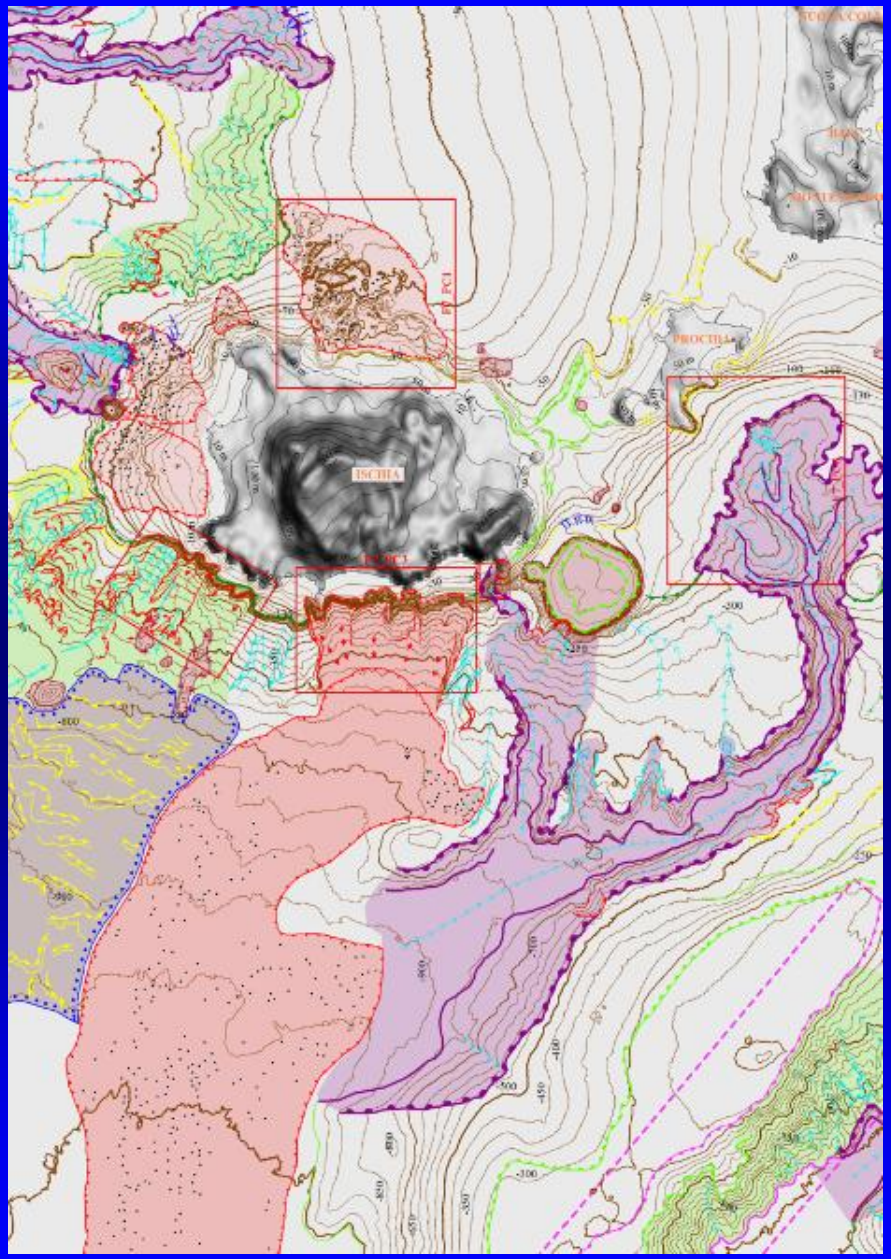


Sheet 33
(Catania)

1 km

Sheet 33 (Catania): 3rd Level - Morhobathymetric elements (EM)

4th Level : Critical Point (PC)



FOUR LEVEL REPRESENTATION

1st Physiographic domains
(1:250.000 areas)

2nd Morphostructural units
(1:50.000 areas + database)

3rd Morphpologic features
(1:50.000 vectors)

4th Critical points
(detailed scale - variable highlights)

Represented as boxes in 1:50.000 maps and described in monographs

Map of Geohazard Features of the Italian Seas

72+1 sheets

1:50.000 A0 format

2/3 of the Italian coastline covered

DATA OUTREACH

The final report has been delivered to Civil Protection Department and will be publicised to governmental authorities in mid-October

An Atlas is expected to be published by 2014, to spread the result obtained by MaGIC project over the scientists, end users and general public. Probably it will be presented on a devoted session at the Congress of the Italian Geological Society on Sept. 2014

This is the draft of the Atlas

SICILIA NORD-ORIENTALE

Inquadramento geodinamico dell'area dello Stretto di Messina

Pippo, pippol, pluto, plutoPippo, pippol, pluto, plutoPippo, pippol, pluto, pluto o, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, **pippol**, pluto, plutoPippoo, pippol, pluto, plutoPippo Pippo, pippol, pluto, plutoPippo, pippol, pluto, plutoPippo, pippol, pluto, pluto o, pippol, pluto, plutoPippo Pippo, pippol, pluto, plutoPippo, pippol, pluto, plutoPippo, pippol, pluto, pluto o, pippol, pluto, plutoPippo

Pippo, pippol, pluto, plutoPippo, pippol, pluto, plutoPippo, pippol, pluto, pluto o, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, **pippol**, pluto, plutoPippoo, pippol, pluto, plutoPippo Pippo, pippol, pluto, plutoPippo, pippol, pluto, plutoPippo, pippol, pluto, pluto o, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto,, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto,

Sismotettonoinica dell'area dello Stretto

plutoPippoo, pippol, pluto, plutoPippo Pippo, pippol, pluto, plutoPippo, pippol, pluto, plutoPippo, pippol, pluto, pluto o, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto,

Principlai lineamenti geomorfologici dell'area

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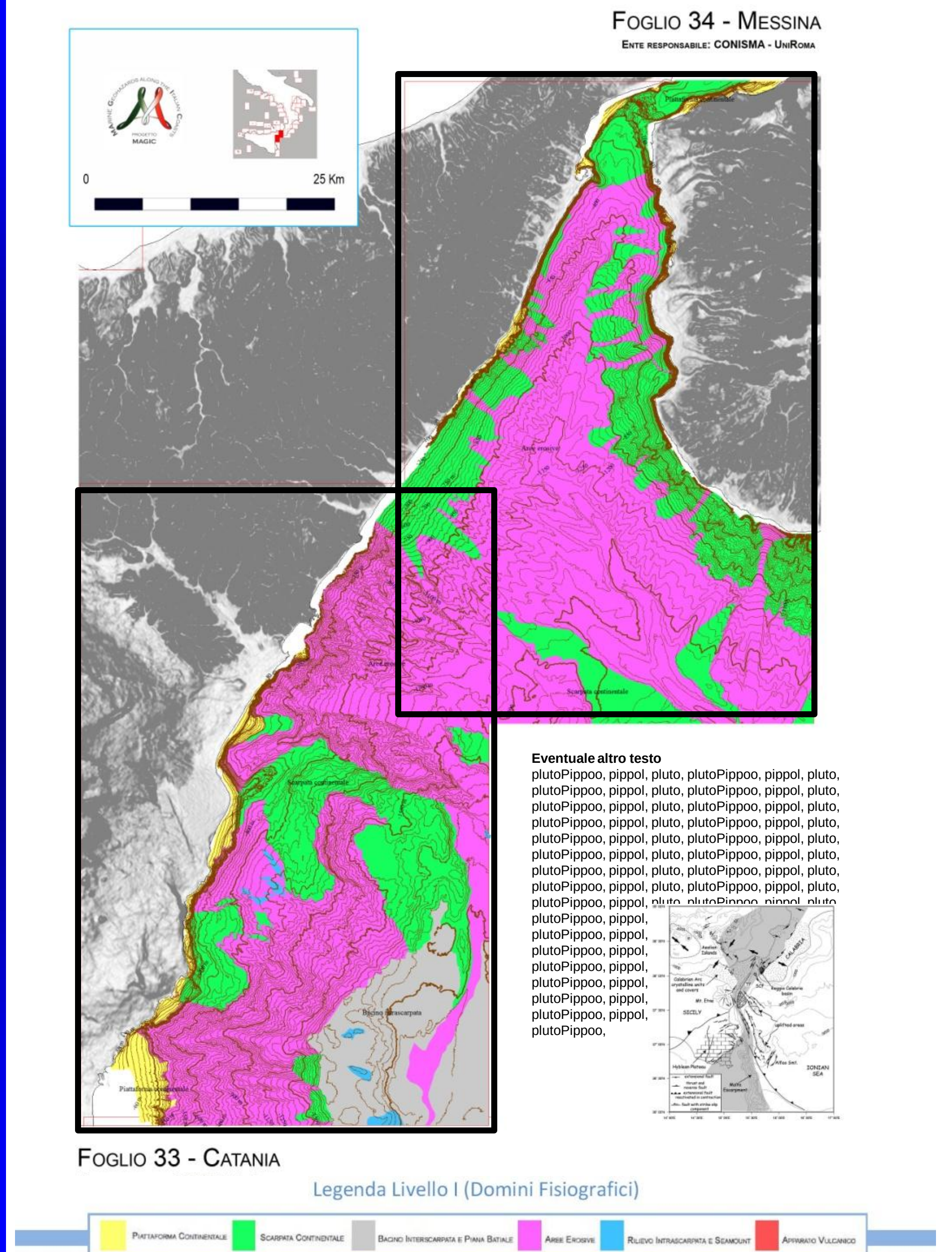
SICILIA NORD-ORIENTALE



Eventuale altro testo

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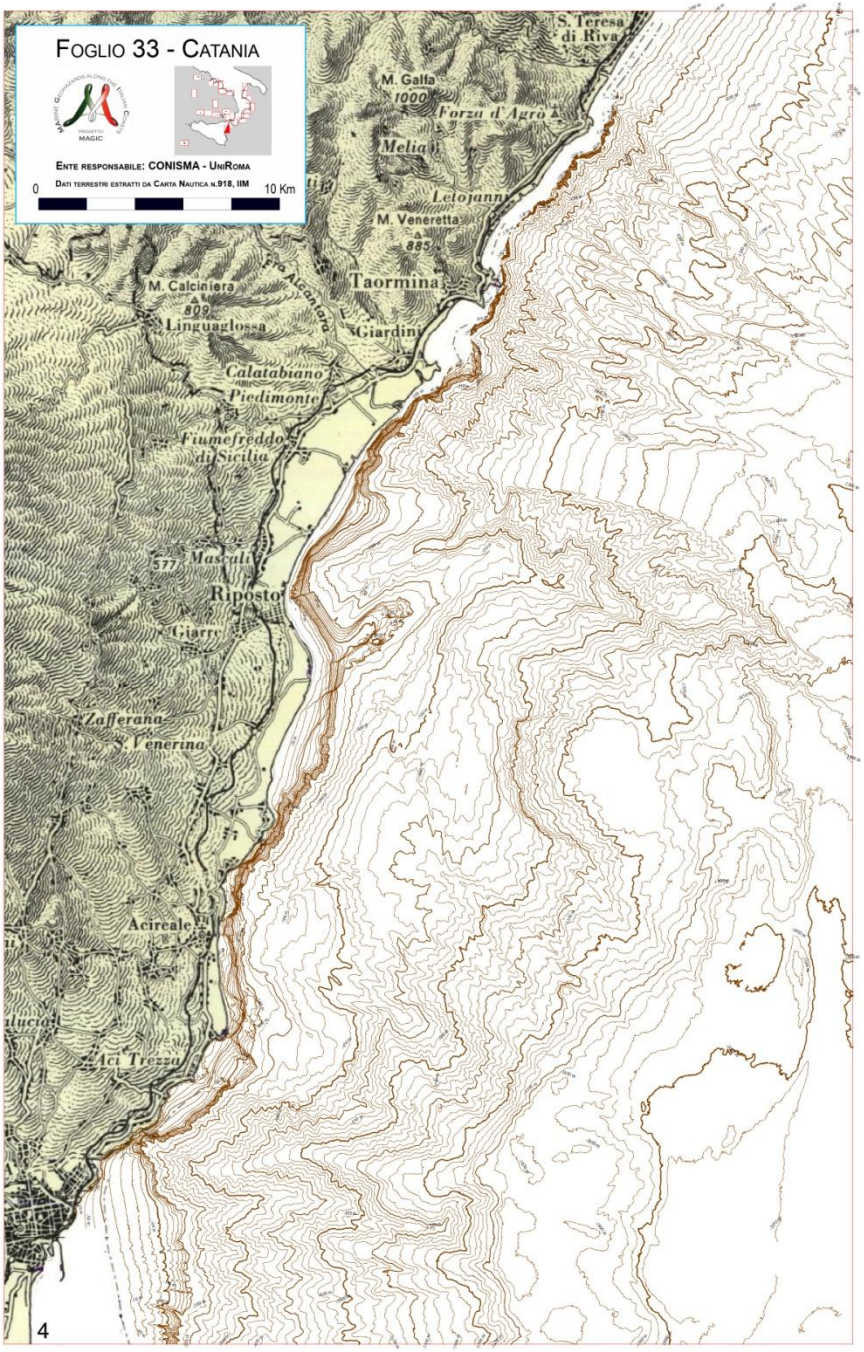
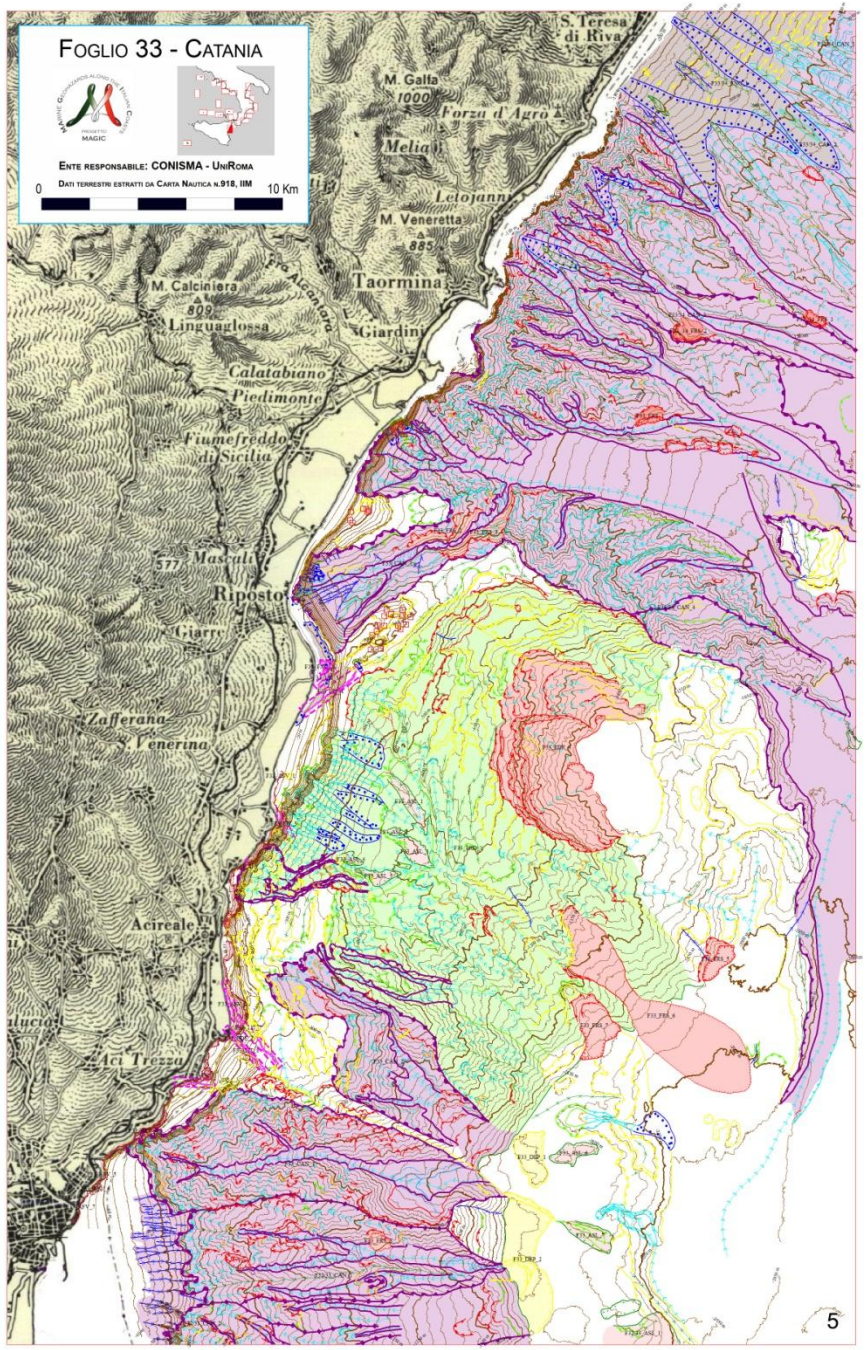

FOGLIO 33 - CATANIA
ENTE RESPONSABILE: CONISMA - UNIROMA
DATI TERRESTRI ESTRATTI DA CARTA NAUTICA N.918, IIM
0
10 Km
S. Teresa di Riva
M. Galfa 1000
Forza d'Agrò
Melia
Letojanni
M. Veneretta 885
M. Calciniera 809
Linguaglossa
Taormina
Giardini
Fra Alcantara
Calatabiano
Piedimonte
Fiumefreddo di Sicilia
577
Mascali
Riposto
Giarre
Zafferana Etnea
Acireale
Aci Trezza


FOGLIO 33 - CATANIA
ENTE RESPONSABILE: CONISMA - UNIROMA
DATI TERRESTRI ESTRATTI DA CARTA NAUTICA N.918, IIM
0
10 Km
S. Teresa di Riva
M. Galfa 1000
Forza d'Agrò
Melia
Letojanni
M. Veneretta 885
M. Calciniera 809
Linguaglossa
Taormina
Giardini
Fra Alcantara
Calatabiano
Piedimonte
Fiumefreddo di Sicilia
577
Mascali
Riposto
Giarre
Zafferana Etnea
Acireale
Aci Trezza

FOGLIO 33_CATANIA

Descrizione del foglio

plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto,,

plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto,,

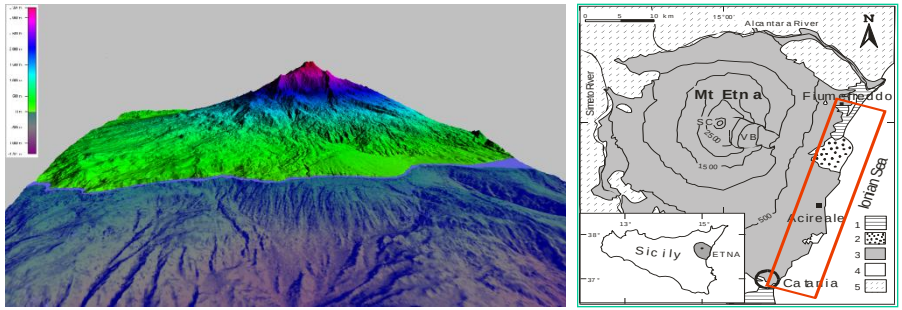


Fig. 1 a) Etna on-shore ed off-shore. b) Schema Geologico della regione dell'Etna che mostra faglie e sismicità della regione. (Brumetti et al., 2007).

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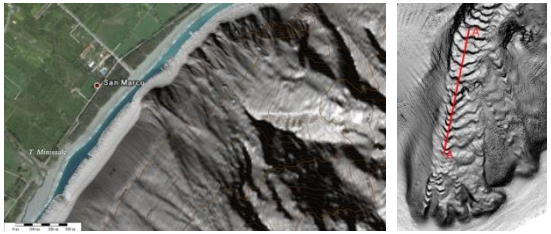

Fig. 2 PC1_F33 – a) Erosione del terrazzo deposizionale sommerso da parte di nicchie di distacco alla testata del canalone di Fiumefreddo di Sicilia. Equidistanza contour 10 m; b) Dettaglio delle frane antistanti S. Marco. Es. Vert. 3X. B) Sezione lungo l'asse del canale di Praialonga

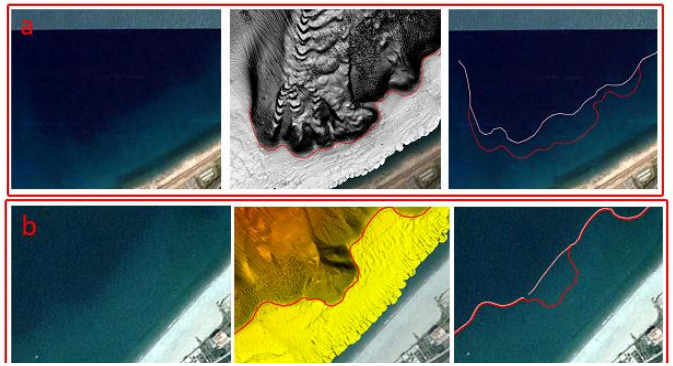

Fig. 3 PC3_F15 - Arretramento del ciglio della testata dei canali erosivi. Il confronto multitemporale tra le foto aeree e rilievi batimorfologici ha rivelato la presenza di fenomeni erosivi diffusi, costituiti da nicchie di distacco di piccole dimensioni del tutto simili per forme e dimensioni a quelle individuate nel canale di Marinella di Bagnara. a) Arretramento del margine meridionale della testata del canale di Praialonga, ubicazione rettangolo blu in Fig. 1 PC3_F15.

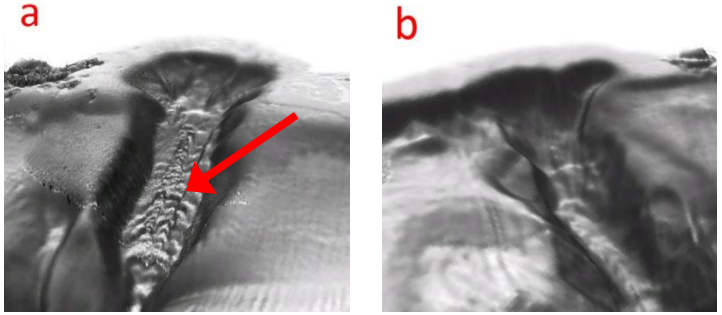

Fig. 4 PC1_F15 - Superfici 3D della testata meridionale (a, per la localizzazione rettangolo rosso in Fig.1 PC1_F15) e settentrionale (b, per la localizzazione rettangolo verde in Fig.1 PC1_F15) del canyon di Gioia (EV 3X).

plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto,

plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto,

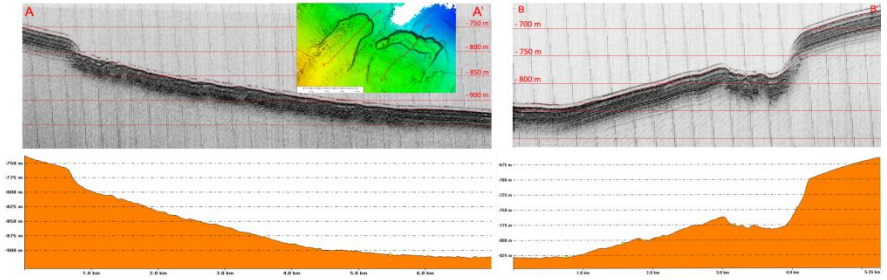

Fig. 5 PC4_F15 - Profili sismici longitudinali alla frana F1 (sinistra) e F2 (destra).

plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto,

plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto, plutoPippoo, pippol, pluto,

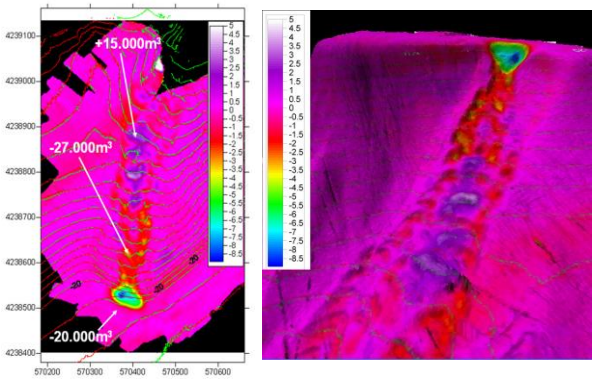

Fig. 6 PC2_F15 - Mappa dei residui batimetrici, in pianta e in visione prospettica relativa alla testata del canalone di Marinella di Bagnara. Risulta evidente la nicchia di distacco (dal verde al blu) avvenuta a poche decine di metri dalla linea di costa. Per la localizzazione rettangolo rosso in Fig. 1 PC2_F15

***MAGIC* project: *MA*rine *G*eohazard along the *I*talian *C*oasts**

Results (direct)

Some 20.000 nautical miles of existing multibeam data recovered and reprocessed (if possible)

More than 40.000 nautical miles of MB data acquired during >500 ship working days

72 Sheets (1:50.000, A0 format) of the *"Map of Geohazard Features of the Italian Seas"* have been produced (4 interpretative levels)

Nearly 8.000 maps present in scientific/technical literature have been classified, georefernced and made available in the web-GIS "infor.mare" sub-project

Results (indirect)

Creation of a large base of bathymetric data that will be used for any civil protection operation and will highlight future variation at the seafloor

Increase in our knowledge of events/processes occurring at the seafloor, by extensive data comparison and repetition of survey trough time on key areas

Spread over among the Italian Marine Geology research community competencies on multibeam data acquisition, processing and interpretation

Promote marine geology studies on the Italian Seas especially among young fellows

Create a collaborative approach among the marine geology research community, to answer needs and opportunities at national and international level

Thank you for your attention

http://www.magicproject.it