

**m ante.DVA.REGISTRO UFFICIALE.I.0009259.19-04-2017**

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## OSSERVAZIONI TRIVELLAZIONI GRECIA

## COMMENTS DRILLING GREECE

Premessa .....Al governo Greco

*Le nostre organizzazioni ,associazioni,cittadini e istituzioni locali si battono da circa 8 lunghi anni e contro 4 governi italiani per salvare il mar jonio dalle trivellazioni petrolifere. Il mar jonio unisce Italia e grecia. Il mare Jonio lega i nostri popoli in una storia millenaria di scambi economici ,culturali e storici legati alla Magna grecia dal 500 a.C. ad oggi.Gli ecosistemi sono molto delicati e fragili , le correnti marine sono chiuse e circolari tra le coste italiane e greche.Il mar jonio è a rischio sismico,tsunami ed è ricco di reperti archeologici patrimonio dell'umanità. Il mar jonio è ricco di delfini e balenottere e di ogni specie marina.Il petrolio è a termine e non porta ricchezza come la cultura ,la bellezza,la pesca,il cibo e il turismo . La soluzione ai problemi energetici dei popoli resta l'energia rinnovabile. In caso di incidenti anche lo Jonio italiano sarebbe gravemente danneggiato con gravi ripercussioni sull'economia italiana. Chiediamo al governo greco di fermare le trivellazioni nello Jonio cosi come abbiamo fatto fino ad oggi per l'Italia e di applicare il principio di precauzione sancito dalla comunità europea.*

### Introduction ... ..Al Greek Government

**Our organizations, associations, local citizens and institutions compete from about 8 long years and against four Italian governments to save the Ionian Sea from oil drilling. The Ionian Sea joins Italy and Greece. . The Ionian Sea binds our peoples in a long history of economic, cultural and historical related to Magna Greece from 500 a.C to date. The ecosystems are very delicate and fragile, marine currents are closed and circular between the Italian and Greek coasts. The Ionian Sea is at risk from earthquakes, tsunamis and is rich in archaeological heritage of humanity. The Ionian Sea is full of dolphins and whales and all marine species. Oil is completed and does not bring wealth as the culture, beauty, fishing, food and tourism. The solution to the energy problems of the peoples remains renewable energy. In case of accidents also the Italian Ionian would be severely damaged with serious repercussions on the Italian economy. We ask the greek government to stop drilling in the Ionian Sea as well as we have done to date for Italy and apply the precautionary principle enshrined in the European community**



## MEDITERRANEO NO SCORIE E NO SCORIE TRISAIA



**Fig. 1. Location of 11 marine areas in Ionian Sea considered for hydrocarbon liscensing, belonging to the Greek Republic.**

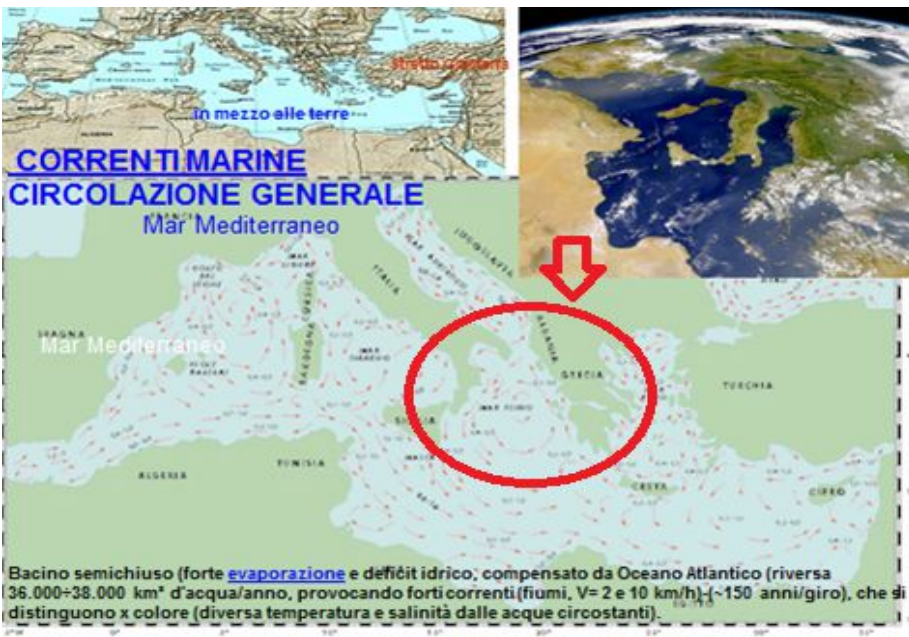
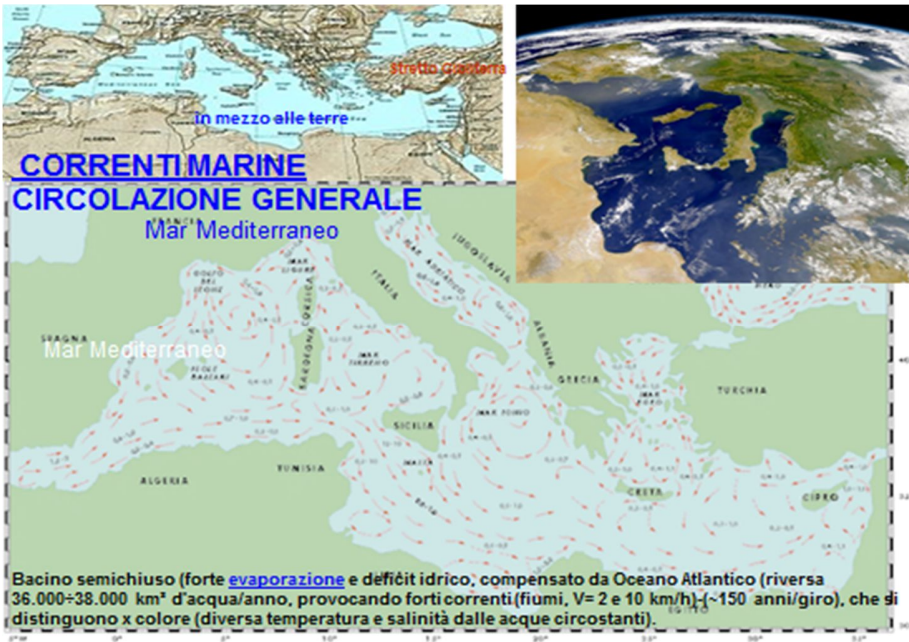
### *Correnti mar Jonio Grecia - Italia*

*Il mediterraneo e lo jonio in particolare ha correnti marine chiuse in un mare chiuso ,eventuali incidenti sulla costa greca influirebbero secondo le correnti marine negativamente sulle coste italiane. Portando inquinamento in particolare sulle coste siciliane,calabresi,lucane e pugliesi ,con ripercussioni anche in Adriatico ,come da foto allegata delle correnti marine nel mar Jonio .*

### **Currents Ionian Sea Greece - Italy**

**The Mediterranean and in particular the Ionian sea currents have closed in a closed sea, accidents on Greek coast would affect ocean currents according to negatively on the Italian coast. Bringing pollution especially on the coast of Sicily, Calabria, Basilicata and Puglia, with repercussions in the Adriatic, as per attached photo of sea currents in the Ionian Sea.**

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### SISMICITA' ELEVATA DELLA COSTA GRECA

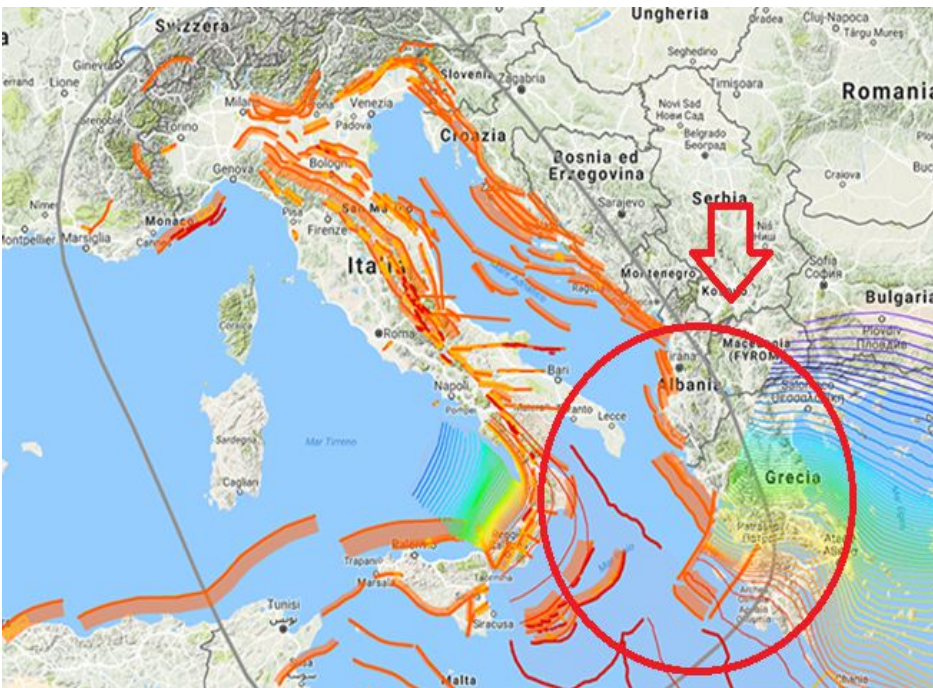
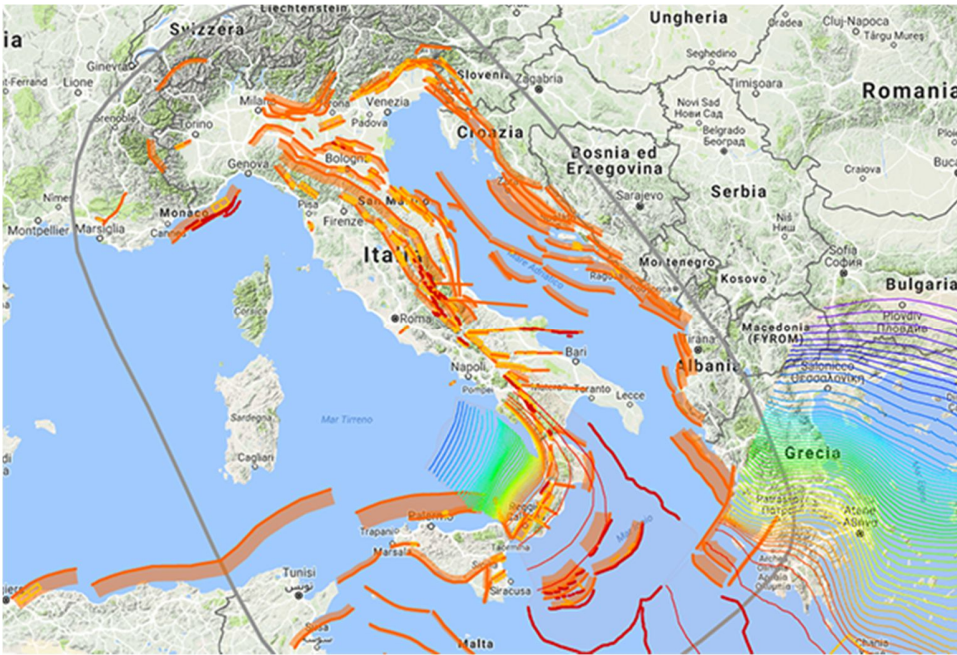
*La costa greca è piena di faglie sismogenetiche attive, le trivellazioni petrolifere potrebbero innescare terremoti, in un'area dove la sismicità è alta e frequente.*

### SEISMICITY 'HIGH OF GREEK COAST

The Greek coast is full of active seismogenic faults, oil drilling could trigger earthquakes, in an area where seismic activity is high and frequent.



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### HISTORICITY 'EARTHQUAKE ON GREEK COAST

List of earthquakes since 1976 and until 2008 source INGV ITALY

Data	Lat	Lon	Prof	Mag
1976 05 11	37.56	20.35	33	6.70
1977 09 11	35.05	23.03	33	6.20
1981 02 24	38.22	22.93	33	6.80
1981 02 25	38.12	23.14	33	6.40
1981 03 04	38.21	23.29	29	6.60

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1983	01	17	38.03	20.23	14	7.20
1983	03	23	38.29	20.26	19	6.20
1986	09	13	37.01	22.18	11	6.00
1992	11	18	38.31	22.45	14	6.10
1994	05	23	35.56	24.73	76	6.10
1995	06	15	38.40	22.28	14	6.50
1997	10	13	36.38	22.07	24	6.60
1997	11	18	37.57	20.66	33	6.60
1999	09	07	38.12	23.60	10	6.00
2004	03	17	34.59	23.33	24	6.10
2006	01	08	36.31	23.21	66	6.70
2008	01	06	37.26	22.69	82	6.20

**Officials INGV Alberto Basili and Salvatore Mazza**

<http://www.ingv.it/ufficio-stampa/stampa-e-comunicazione/archivio-comunicati-stampa/comunicati-stampa-2008/terremoto-di-magnitudo-ml-6-7-grecia-evento-in-mare/>

31 agosto 2016

### Trivelle e terremoti

*Dal 2008 la frequenza dei sismi in Oklahoma e Texas è cresciuta a dismisura. La causa, dicono gli scienziati, è l'iniezione delle acque di smaltimento, provenienti dall'estrazione di petrolio e gas, in pozzi sotterranei profondi. Le iniezioni possono alterare le tensioni che tengono insieme le faglie geologiche e consentirne lo slittamento, scatenando un sisma. Lenti a reagire, alcuni Stati hanno limitato le quantità di acque di smaltimento iniettate nel sottosuolo. I terremoti continuerebbero anche se le iniezioni fossero bloccate, perché i cambiamenti di pressione già indotti nelle rocce profonde possono migrare per anni e incontrare nuove faglie* di Anna Kuchment

**source** [http://www.lescienze.it/archivio/articoli/2016/08/31/news/trivelle\\_e\\_terremoti-3215661/](http://www.lescienze.it/archivio/articoli/2016/08/31/news/trivelle_e_terremoti-3215661/)

### Drilling and earthquakes

**Since 2008, the frequency of earthquakes in Oklahoma and Texas has grown dramatically. The cause, scientists say, is the injection of waste water coming from the extraction of oil and gas in deep underground wells. The injections may alter the tensions that hold together the geological faults and allow slippage, triggering an earthquake. Lenses react, some states have limited the amount of injected water disposal underground. The earthquakes continue even if the injections were blocked, because the changes in pressure induced already in deep rocks can migrate for years and meet new faults. Fto Anna Kuchment**

**Due to the high seismicity Greek area the risk earthquakes - oil drilling is very high**

NAVI DEI VELENI E AIR GUN

## MEDITERRANEO NO SCORIE E NO SCORIE TRISAIA

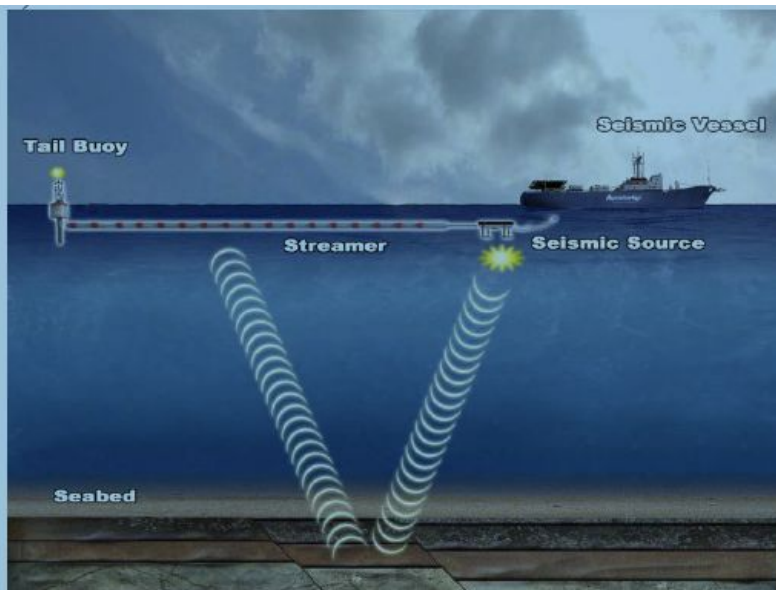
*Nel mar Jonio sono state inabissate negli anni numerose navi a perdere contenenti sostanze tossiche e/o radioattive . Su queste navi ha indagato la commissione bicamerale sul ciclo dei rifiuti del governo italiano che ha desecretato nel febbraio 2017 una serie di atti dove risultano affondate nel mar jonio decine di navi di cui alcune senza coordinate geografiche sul punto di affondamento .*

*L'air gun potrebbe smuovere i fondali e disseminare tramite le correnti il contenuto dei fusti tossici e radioattivi contenuti in queste navi. Le correnti porterebbero gli inquinanti sulle coste greche e italiane*

### **SHIPS OF POISON AND AIR GUN**

**In the Ionian Sea we were sunken over the years many ships to lose containing toxic substances and / or radioactive. On these ships has investigated the bicameral committee on the waste cycle of the Italian government has declassified in February 2017 a series of acts which are sunk in the Ionian Sea dozens of ships, some of which no coordinates on the point of sinking.**

**The air gun could shake up the seabed and disseminate through the current content of toxic and radioactive drums contained in these vessels. The currents would bring the pollutants on the Greek and Italian coasts**



**Εικ. 5.4.** Απεικόνιση ενός σκάφους ερευνών που ρυμουλκεί μία σεισμική πηγή (airgun) και υποβρύχια υδρόφωνα. Ο ρυμουλκούμενος εξοπλισμός μπορεί να αναπτυχθεί σε απόσταση από 3 έως 12 χλμ πίσω από το σκάφος (από: SEA Cyprus, 2008).

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17  
1/26/371

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a seguito della comunicazione del  
Presidente del Consiglio dei Ministri alla  
Presidente della Camera dei Deputati,  
in data 5 maggio 2014

Doc. N. 786 / 1708

MINISSEC @X@VIII  
el n. 36020/11.6/SA.61  
del 21/05/2011

MINISTERO DEI TRASPORTI E DELLA NAVIGAZIONE  
CAPITANERIA DI PORTO REGGIO CALABRIA

7

TEL. + 39 (0)965-21130-21139 TELEX 890071 TELEFAX + 39 (0)965-893894

A (TO) [REDACTED] - URGENTE - 06/4821098

DA (FROM) [REDACTED]

OGGETTO (OBJECT) [REDACTED]

TESTO (TEXT):

**SEGRETO**

DA CONSEGNARE URGENTEMENTE

[REDACTED]

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PAGE 1 OF 7 PAGES  
TOTAL PAGES INCLUDING THIS COVER 7

AMi 11-10-093



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DOCUMENTO DECLASSIFICATO

Esito del procedimento di declassificazione del Consiglio dei Ministri alla Presidente della Camera dei Deputati, in data 5 maggio 2014

95 205

Rif

... Della notizia trova riscontro in particolare nell'affondamento della nave da carico RIGEL di bandiera Maltese, inabissatasi il 21.09.1987 a 20 miglia Sud-Est da Capo Spartivento. La citata nave proveniva da Marina di Carrara ed era diretta a Limassol e prima della partenza risulta avere avuto problemi giudiziari per il carico a bordo.

Sono in corso accertamenti per verificare la rispondenza della notizia acquisita, nonché il manifesto di carico della nave all'atto della partenza da quel porto.

PreMESSO ciò, si traccia qui di seguito uno specchio riguardante la situazione generale delle navi affondate nel Mar Jonio e Tirreno:

1. M/N "ASO" - Bandiera italiana - ton. 499 - carica di 900 tonnellate di solfato ammonico - affondata a circa 6 miglia dalla costa dell'abitato di Locri in data 16.5.1979;

2. M/N "MARIA PIA M." band. Italiana - Ton. 983 - Carico generale - Affondata in lat. 38 gradi 56' long. 17 gradi 50' Est - in data 11.03.1984;

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SISMI		
P. DIVISIONE		
13 OTT. 1995		
Prot. N.	28165	
	D/S. PI.	VIS.
SEGR.		
SEZ. C.A.		
SEZ. T.I.D.		
DIR. A.P.		
SEZ. A.R.		
DIR. R.E.I.	14	x

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a seguito della comunicazione del  
Presidente del Consiglio dei Ministri alla  
Presidente della Camera dei Deputati,  
in data 5 maggio 2014

- ottavo foglio -

M/N "MIKIGAN" band. Italiana - Ton. 1285 - Carico  
granulato di marmo - affondata in lat. 38 gradi  
35' N. / long. 15 gradi 42' Est - in data 31.10.  
1986)

4. M/N "RIGEL" Bandiera Maltese - Carico generale -  
Ton. 3852 - affondata in lat. 37 gradi 58' N. -  
long. 16 gradi 49' Est in data 21.09.1987)

5. M/N "FOUR STAR I" bandiera SRI-LANKA - ton. 1982  
Carico generale - affondata in un punto dello  
Jonio meridionale il 09.12.1988) durante il viaggio  
da Barcellona ad Antalya; (TUNICIA)

6. M/N "PER" bandiera danese - ton. 400 - carico gene-  
rale - affondata in lat. 57 gradi 47' N. long.  
10 gradi 44' E. in data 26.02.1988)

7. M/N "SPIROS G. II" bandiera cipriota - ton. 1404 -  
carico generale - affondata il 02.03.1987) durante  
il viaggio da Skidda a Milazzo lungo la costa  
Jonica, pare sia stata recuperata;

.../...

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Presidente della Commissione Interministeriale alla  
Presidente della Camera dei Deputati  
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9. M/N "CELIKTRANS II" bandiera turca - ton. 499 -  
carico generale - affondata il 24.01.1988 a circa  
60 miglia dalla costa siciliana durante il viaggio  
da Pireo in Sardegna;
9. M/N "ANNI" bandiera maltese - ton. 495 - carico  
generale - affondata il 01.08.1989 durante il  
viaggio da Pireo a Ravenna in alto Adriatico in  
posizione lat. 44 gradi 13' N. / long. 13 gradi 02'  
E.;
10. M/N "DESPO" bandiera Saint Vincent - ton. 1456 -  
carico containers - affondata il 22.11.1989 in  
lat. 36 gradi 38' N. / long. 19 gradi 37' E.;
11. M/N "DEVAL" bandiera turca - ton. 1599 - carico  
generale - affondata il 14.04.1989 in viaggio da  
Chioggia ad Istanbul in lat. 42 gradi 14' N. long.  
16 gradi 18' E.;
12. M/N "ROSSO" bandiera italiana - ton. 2307 - carico  
containers e automezzi - arenata nei pressi di  
Capo Suvero a Vibo Valentia Marina il 14.12.1990;

.../...

4

1989

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- decimo foglio -

13. M/N "CTE ROCIO" bandiera Antigua e Barbuda -  
ton. 988 - carico generale - affondata in lat. 39  
gradi 33' N. e long. 11 gradi e 44' E. in data  
10.12.1990 durante il viaggio da Napoli e  
Valencia;
14. M/N "ALESSANDRO PRIMO" bandiera italiana - ton.  
2506 - carico generale - affondata al largo di  
Molfetta il g. 01.02.1991 - dal relitto sono  
stati recuperati fusti di DICLORETANO;
15. M/N "APOLLONIA FAITH" bandiera cipriota -  
ton. 5999 - carico generale - affondata in lat. 37  
gradi 52' N. e long. 08 gradi e 18' E., il  
07.11.1991, in viaggio da Valenza al Pireo;
16. M/N "EURDRIVER" bandiera maltese - ton. 386 -  
carico generale - affondata in lat. 43 gradi 19'  
N. e long. 16 gradi 09' E. in data 12.11.1991;
17. M/N "LINA" - bandiera maltese - ton. 2952 -  
carica di granturco - affondata in lat. 41 gradi  
14' N. e long. 29 gradi 10' E. in data 03.12.1991  
in viaggio da Costanza a La Valletta;



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quindicesimo foglio

18. M/N "SCAIENI" - bandiera rumena - ton. 3374 -  
carica di nitrato di ammonio - affondata in lat.  
36 gradi 43' N. e long. 18 gradi 20' E. il  
g. 08.12.1991

19. M/N "SEVASTI" - bandiera cipriota - ton. 399 -  
carico generale (marble) - affondata nel viaggio  
da Volos a Gabes in un punto imprecisato dello  
Jonio Meridionale, presumibilmente in data  
26.03.1991

20. M/N "AYDAN" - bandiera turca - ton. 1275 - carica  
di fertilizzanti - affondata in lat. 37 gradi 40'  
N. e long. 11 gradi 10' E. il 06.04.1992

21. M/N "IRINI" - bandiera maltese - ton. 1593 -  
carico containers - affondata in lat. 37 gradi  
05' N. e long. 14 gradi 11' E. in data  
24.11.1991 dopo la partenza da Manfredonia per  
Annaba;

22. M/N "MARCO POLO" - bandiera maltese - carica di  
containers - abbandonata dall'equipaggio in lat. 37  
gradi 45' N. e long. 10 gradi 50' E. in data

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a seguito della comunicazione del  
Presidente del Consiglio dei Ministri alla  
Presidente della Camera dei Deputati,  
in data 5 maggio 2014.  
- Dodicesimo Foglio -

14.03.1993 durante il viaggio da Barcellona ad  
Alessandria, presumibilmente affondata;

23. M/N "MARINETA" - bandiera Sant Vincent de  
Granadine - ton. 844 - carica di caolino in fusti-  
arenatasi a circa 200 metri dalla riva nella zona  
di mare antistante SANTA CATERINA SULLO JONIO (CZ)  
in data 05.01.1993.

Sono in corso ulteriori accertamenti per la  
individuazione di altre navi e siti ed in caso positivo  
sara' fatto seguito alla presente informativa.

I punti di affondamento delle navi "ANNI" e  
"EURORIVER", entrambe di bandiera maltese, di cui ai  
suddetti punti 9. e 16., trovano riscontro con i punti  
di dispersione delle scorie pericolose previste dal  
progetto D.D.M. del COMERID nella parte indicata dal  
punto C. AREE NAZIONALI ITALIANE.

Con riferimento alla motonave ROSSO citata si  
ritiene opportuno riferire che la nave ha subito  
l'incidente, causa dell'incaglio avvenuto durante il  
viaggio da Malta a La Spezia, per averne condimeteo e  
che in merito e' stata esperita indagine sommaria dalla  
Capitaneria di Porto di Vibo Valentia Marina.

.../...

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quindicesimo foglio

18. M/N "SCAIENI" - bandiera rumena - ton. 3374 -  
carica di nitrato di ammonio - affondata in lat.  
36 gradi 43' N. e long. 18 gradi 20' E. il  
9.08.1991

19. M/N "SEVASTI" - bandiera cipriota - ton. 399 -  
carico generale (marble) - affondata nel viaggio  
da Volos a Gabes in un punto imprecisato dello  
Jonio Meridionale, presumibilmente in data  
26.03.1991

20. M/N "AYDAN" - bandiera turca - ton. 1275 - carica  
di fertilizzanti - affondata in lat. 37 gradi 40'  
N. e long. 11 gradi 10' E. il 06.04.1992

21. M/N "IRINI" - bandiera maltese - ton. 1593 -  
carico containers - affondata in lat. 37 gradi  
05' N. e long. 14 gradi 11' E. in data  
24.11.1991 dopo la partenza da Manfredonia per  
Annaba;

22. M/N "MARCO POLO" - bandiera maltese - carica di  
containers - abbandonata dall'equipaggio in lat. 37  
gradi 45' N. e long. 10 gradi 50' E. in data

### PUNTO BIANCO AMBIENTALE

*I progetti di ricerca di idrocarburi nel mar ionio non possono essere autorizzati, perché di fatto manca la realizzazione del punto ambientale bianco. Risultano così pregiudicate, in caso di autorizzazione, tutte le attività di monitoraggio che sono finalizzate alla conoscenza dello stato ambientale ante operam.*

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### WHITE POINT ENVIRONMENTAL

The oil exploration projects in the Ionian Sea can not be authorized, because in fact lack the realization of environmentally White. Is broken down as impaired, if justified, all activities monitoring which are to create awareness of the environmental status pre-construction.

### *EFFETTI NEGATIVI DELLE TRIVELLAZIONI SUL TURISMO*

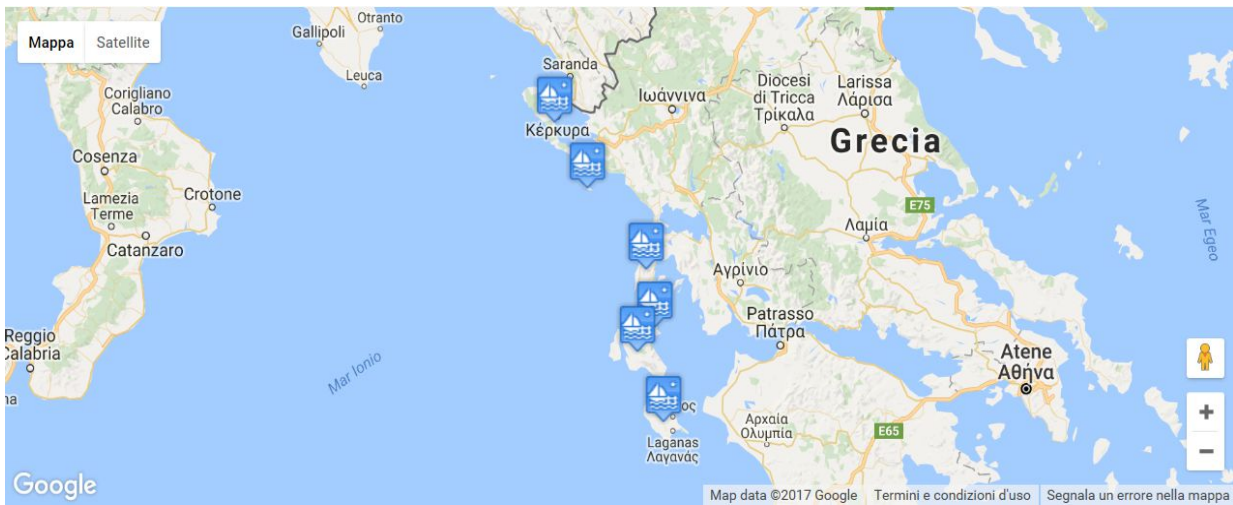
*Il turismo rappresenta il 20% del PIL della Grecia ,è una principale fonte di reddito insieme ai noli marittimi. Il turismo costiero e delle isole da primavera ad autunno rappresenta una grande opportunità lavorativa per migliaia di persone. Le piattaforme petrolifere danneggiano il paesaggio, le acque e i luoghi ,inciderebbero negativamente sull'offerta turistica .L'economia legata al petrolio è a termine mentre quella legata al turismo è a tempo indeterminato . Sono le undici isole dell'arcipelago, piccole e grandi, sparse lungo le coste occidentali della Grecia continentale note con il nome di Isole Ionie. Le sei maggiori sono: Zante, Itaca, Corfu, Cefalonia, Lefkada e Paxi, mentre quelle più piccole sono Antipaxi, Erikousa, Mathraki, Othoni, Meganisi ed il gruppo delle isolette deserte delle Strofadi a sud di Zante. Nelle profondità dei millenni, si trova il remotissimo passato delle Isole Ionie, conosciute per la prima volta con i versi dell'Odissea di Omero*

### NEGATIVE EFFECTS OF DRILLING ON TOURISM

**Tourism accounts for 20% of Greece's PIL, is a major source of income along with the sea freight. Coastal tourism and from spring to autumn islands is a great job opportunities for thousands of people. The oil platforms damage the landscape, waters and places, adversely affect on the tourist . The economy linked to oil it is complete while that related to tourism is indefinite. It's eleven islands, large and small, scattered along the western coast of Greece continentale known as the Ionian Islands. The six largest are: Zakynthos, Ithaca, Corfu, Kefalonia, Lefkada and Paxos, while the smaller ones are Antipaxi, Erikousa, Mathraki, Othoni, Meganisi and the group of deserted islands of Strofades south of Zante. Nelle depth of millennia, is the very remote past of the Ionian Islands, known for the first time with the verses of Homer's Odyssey.**



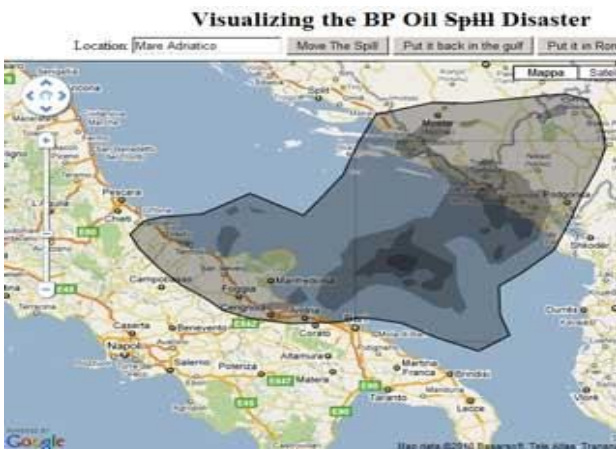
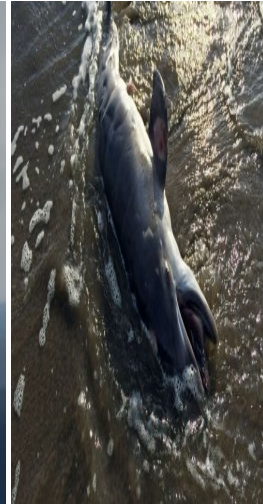
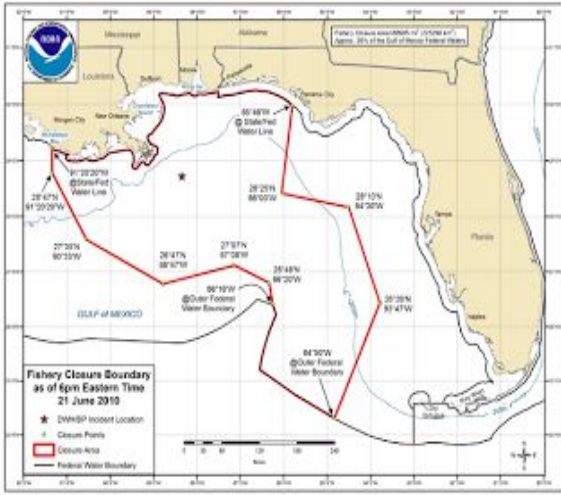
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The list of the disasters caused by the following oil companies took place, it is definitely not exhaustive because it is virtually impossible to list them all, but it is significant because it shows that accidents during the extraction and / or hydrocarbon is an eventuality search concrete, and the risk is too high, especially since the case instance object of this report do not talk about a marine area located in an ocean but rather a closed sea where the consequences of an accident would be catastrophic.

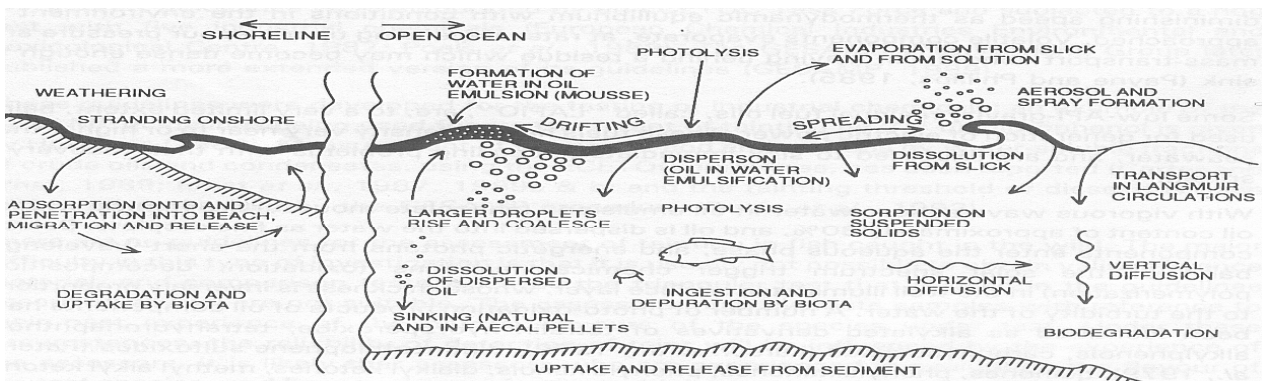
Sea area closed to fishing during the outbreak of the Gulf of Mexico

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## Marea nera - Simulazione incidente golfo nel mediterraneo Oil spill incident - Simulation gulf in the Mediterranean

Pollution as a result of spills - Ispra (IT)



Source: MacKay (1985) in Engelhardt (1985)



## MEDITERRANEO NO SCORIE E NO SCORIE TRISAIA

### RISCHI PER L'ARCHEOLOGIA SOMMERSA

*Il mare jonio è ricco di reperti di ogni epoca in considerazione dei traffici commerciali con la magna Grecia italica nel 500 a.C. L'air gun distruggere questo patrimonio dell'umanità sommerso.*

### RISKS FOR ARCHEOLOGY FLOODED

**The Ionian Sea is rich in finds of all ages into consideration the trade with the Italic Magna Greece in 500 a. C .The air gun would destroy this submerged heritage of humanity.**

Ci sono nel mare intere città sommerse che devono essere portate alla luce e tutelate

DA ARCHIVIO QUOTIDIANO REPUBBLICA

### *Antica Grecia I segreti della città perduta sotto il mare*

*I segreti di una città perduta, chiamata Pavlopetri, che potrebbe aver dato origine a uno dei più duraturi miti dell' antichità, quello di Atlantide, sono stati portati alla luce dalle acque del Mediterraneo. Pavlopetri si trova nella provincia di Laconia, alla periferia del Peloponneso, a sud della Grecia. Certamente si tratta della più antica città sommersa di cui oggi si è a conoscenza. Per il geo-archeologo Nic Flemming del National Oceanography Centre di Southampton (Gran Bretagna), che ha partecipato alla ricerca, «la scoperta delle ceramiche del Neolitico portate in superficie, può essere definita incredibile, in quanto dimostra che stiamo lavorando tra le strade di una città che ha un' età compresa tra i 5 e i 6 mila anni e che fu una tra le prime a intraprendere un' attività commerciale per il Mediterraneo». Fu lo stesso Flemming a scoprire quella città nel 1967, ma dopo un sopralluogo che portò a una relazione scientifica redatta nel 1969, il luogo venne forzatamente dimenticato per evitare che qualcuno ne predasse il materiale. Durante quelle prime ricerche la città venne datata attorno al 2.000 avanti Cristo. Ora, all' età di 70 anni, Flemming è riuscito a convincere il ministero della Cultura greco a finanziare una nuova campagna di ricerca. «Grazie alle acque limpide di quell' area - aggiunge il ricercatore - siamo riusciti a realizzare una pianta completa della città, mettendo in rilievo le strade principali, le tombe e gli edifici delle persone. Abbiamo anche i dati per studiare come veniva utilizzato il porto, dove attraccavano le imbarcazioni, e come venivano organizzati i traffici mercantili». Le ricerche hanno messo in luce che la città si estendeva su 100 mila metri quadrati, metà dei quali sono stati già mappati. Il resto è sepolto dalla sabbia. Negli ultimi giorni il team di ricercatori ha messo in luce una nuova area della città di 100 metri per 100, ancora tutta da studiare. «Ha davvero lasciato stupefatto la scoperta di un megaron», spiega Jon Henderson, professore di archeologia subacquea all' Università di Nottingham. E continua: «Si tratta di una struttura monumentale con una grande sala rettangolare, che potrebbe indicare che la città, o almeno una sua parte, era abitata solo da un' élite di persone». Sembra che Pavlopetri sia sprofondata attorno al 1.000 a. C. Da allora non è più emersa. «È come se fosse stata congelata quando venne occupata dal mare», afferma Henderson. I ricercatori vogliono capire come mai Pavlopetri sia finita sott' acqua. Sono aperte varie ipotesi. È possibile che un forte tsunami abbia cambiato l' andamento delle coste e abbia fatto sprofondare la città. O che l' area sia stata sommersa in seguito al fenomeno della subsidenza, un abbassamento del suolo per compattamento degli strati sottostanti. Ma potrebbe anche essere che l' acqua abbia avuto il sopravvento sulle terre emerse in seguito all' innalzamento del livello del mare.*

LUIGI BIGNAMI

**There are submerged in the sea Whole cities that are to be brought to light and protected**

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### Ancient Greece The secrets of the lost city under the sea

The secrets of a lost city called Pavlopetri, which may have given rise to one of the most enduring myths of antiquity, that of Atlantis, were brought to light by the Mediterranean Sea. Pavlopetri is located in the province of Laconia, on the outskirts of the Peloponnese, in southern Greece. Certainly it is the most ancient sunken city of which you are aware. For the geo-archaeologist Nic Flemming of the National Oceanography Center in Southampton (UK), who participated in the research, "the discovery of ceramics from the Neolithic brought to the surface, it can be described as incredible, as it shows that we are working on the streets of a city that has an 'age between 5 and 6 thousand years and was one of the first to embark on a' commercial activities for the Mediterranean. " It was the same

**Flemming to discover that city in 1967, but after a visit that led to a scientific report drawn up in 1969, the place was forcibly forgotten to prevent that someone predasse material. During those early research the city was dated to around 2,000 BC. Now, all 'age of 70 years, Flemming was able to convince the greek Ministry of Culture to finance a new research campaign. "Thanks to the clear waters of that 'area - adds the researcher - we were able to create a complete map of the city, highlighting the main roads, buildings tombée people. We also have the data to investigate how it was used the port, where the boats were docked, and how the trade routes were organized. " Research has revealed that the city extended over 100 thousand square meters, half of which have already been mapped. The rest is buried by sand. In recent days the team of researchers has highlighted a new area of the city of 100 meters by 100, yet to be studied. "He really left stupefied the discovery of a megaron" says Jon Henderson, professor of underwater archeology at 'University of Nottingham. He continues: "This is a monumental structure with a large rectangular room, which could indicate that the city, or at least a part of it, was inhabited only by an 'elite of people." It seems that Pavlopetri has sunk to around 1,000. C. Since then IS NO more emerged. "It's as if it had been frozen when it was occupied by the sea," says Henderson. The researchers want to understand why Pavlopetri is over sott 'water. various hypotheses are open. It is possible that a strong tsunami has changed the 'performance of coasts and has plunged the città.O that the' area has been submerged in response to the subsidence phenomenon, a lowering of the ground for compaction of the underlying layers. But it could also be that the 'water has had the upper hand over the lands that emerged as a result of' a rising sea level.**

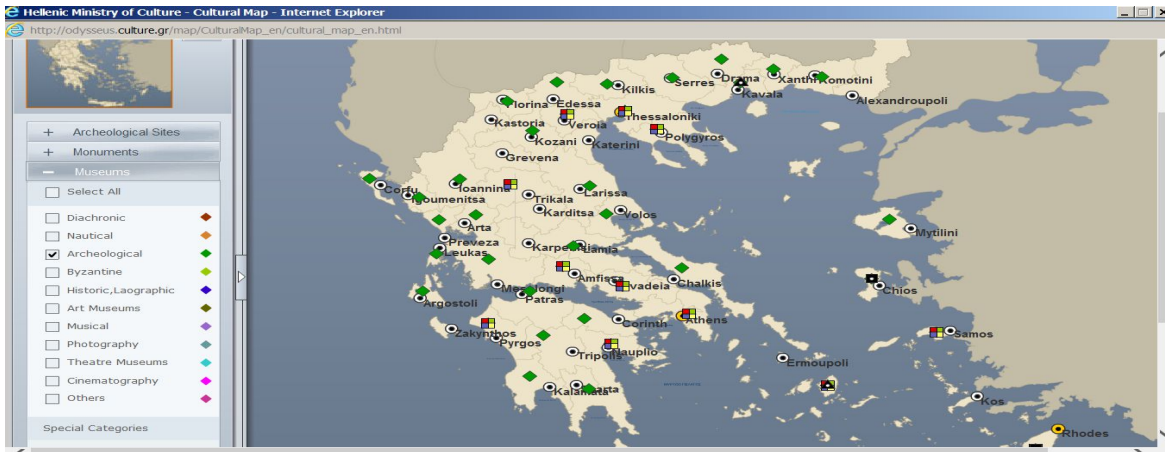
LUIGI BIGNAMI

*Le mappe archeologiche secondo il ministero della cultura greca*

**The archaeological maps according to the Ministry of Greek culture**



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### RISCHIO TSUNAMI SULLE COSTE GRECHE

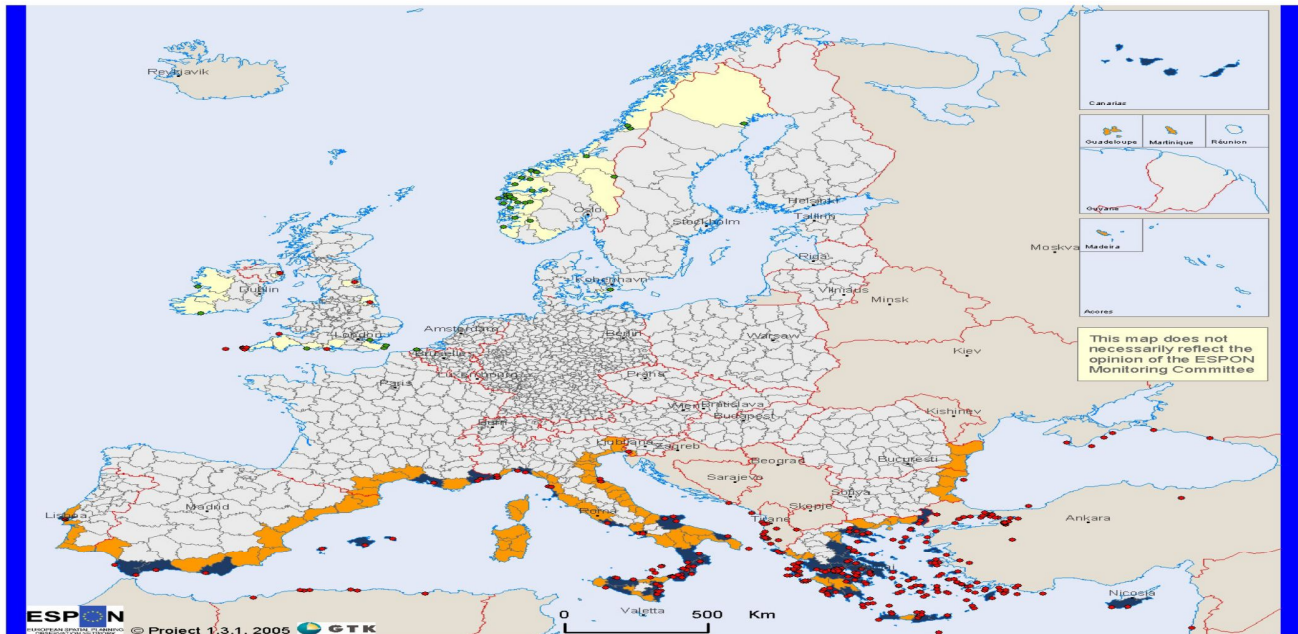
Un team di ricercatori europei ha realizzato negli scorsi anni [una mappa del rischio tsunami in tutta Europa](#), utilizzando testimonianze storiche prese da libri e cronache antiche. Da questa mappa emerge un quadro preoccupante: ad essere maggiormente esposte sono le coste della Grecia e quelle dell'Italia. Il rischio tsunami non è stato previsto nello studio di impatto ambientale sulle trivellazioni petrolifere

### TSUNAMI RISK ON GREEK COAST

A team of European researchers has developed in recent years a map of tsunami risk across Europe, using historical evidence taken from books and ancient chronicles. From this map reveals a worrying picture: to be most exposed are the coasts of Greece and those of Italy.

The tsunami risk has not been contemplated in the environmental impact study on oil drilling

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### Historically recorded tsunami runups

- Terrestrial landslide associated/ unknown cause
- Earthquake/volcano/submarine landslide associated

- Espon space
- Regions that experienced landslide associated tsunamis
- Tsunami potential in coastal areas close to tectonically active zones
- Regions that lie in vicinity to tectonically active zones and have experienced earthquake/volcano/landslide associated tsunamis
- Non ESPON space

Origin of the data: © EuroGeographics Association for the administrative boundaries  
 Northern coast of Africa and Spain: Hébert, 2003  
 Greece: Institute of Geodynamics, National Observatory of Athens  
 Spain: Instituto Geográfico Nacional  
 Italy: Istituto Nazionale di Geofisica e Vulcanologia, Roma  
 World Tsunami data: National Geophysical Data Center (NGDC)  
 World Map of Natural Hazards: Munich Reinsurance Company  
 Source: ESPON Data Base

[http://www.preventionweb.net/files/3621\\_Finalreport.pdf](http://www.preventionweb.net/files/3621_Finalreport.pdf)

### This map classifies coastal areas in Europe according to the probability of a tsunami occurrence.

There are several geological and historical records of tsunamis. The most endangered zones lie in close vicinity to the main volcanoes or along seismically active zones. Tectonically induced tsunamis occur in Europe mainly in the Mediterranean and the Black Sea. Tsunamis caused by submarine or terrestrial landslides have mainly occurred in Norway, but also in some other areas in Europe. In general, it can be concluded that tsunamis are possible along all shorelines that lie in tectonically active zones or in areas where submarine or terrestrial landslides are possible. Even though no devastating tsunamis have occurred in Europe in the last 100 years, the potential for hazard is still high.

### RISCHI DELL' AIR GUN SULLA PESCA E CETACEI

*L'air gun nei rilievi geofisici marini è la sorgente più comunemente usata. Il sistema utilizza l'espansione dell'acqua di un volume di aria compressa ad alta pressione che genera un fronte di onde elastiche direttamente nell'acqua circostante. Da uno studio del WWF Abruzzo ONG vicino la*

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*sorgente di air gun i può essere misurato circa 230 decibel. Studi del the Norwegian institute of marine hanno evidenziato una riduzione drastica del pescato fino al 50% a 2.000 m2 dalla sorgente di air gun.*

*Sui cetacei l'esposizione a forti rumori come l'air gun può produrre emorragie sull'apparato uditivo ed effetti letali*

*Study prof Mazzaioli, 2011 PLoS One vol 6*

*Nel 2010 n. 7 Capodogli morirono sulle spiagge pugliesi . La causa secondo il prof Mazzaioli era riconducibile a una sindrome embolica connessa ad eventi collegati sonar o terremoti subaquei*

### DB AIR GUN

*Ogni air gun spara colpi di aria alla pressione di 2000 psi che equivale ad oltre 1.400.000 Kg/mq per 72 colpi alla frequenza di 10/15 secondi e con una potenza di 265 decibel .una potenza inaudita .Un aereo che supera il muro del suono sviluppa dai 140/210 decibel*

### SCHEMA db

*10 db= silenzio*

*60 db = conversazione*

*137 db= soglia dolore timpani*

*150 db = soglia dolore per le articolazioni*

*165 db = pressione sonora interna di una turbina di boeing*

*190 db =rumore di una bomba nell'epicentro*

*210 db = boom sonico*

*215 db = lancio spazio shuttle*

*235 db= 1 airgun*

*248 db = bomba atomica su hiroshima*

*365 db = 72air gun*

### RISKS OF 'AIR GUN ON FISHING AND CETACEANS

**The air gun in marine geophysical surveys is the most commonly used. The source system uses the expansion of water of a volume of compressed air at high pressure which generates a front of elastic waves directly into the surrounding water.**

**From a study of the Abruzzo WWF NGO behind the air gun can be measured about 230 decibels.**

**Studies of the Norwegian Institute of Marine showed a dramatic reduction in the catch of up to 50% to 2,000 m2 from the air gun source. On cetaceans exposure to loud noises such as air gun can produce on the apparatus bleeding ear and lethal effects.**

**Study prof Mazzaioli, 2011 PLoS One vol 6**

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In 2010 seven Capodogli whales died on the beaches of Puglia. The case according to Prof. Mazzaioli was attributable to a syndrome connected to embolic events linked sonar or earthquakes divers

### Decibel AIR GUN

Each air gun shoots blows air at 2000 psi pressure which is equivalent to more than 1,400,000 kg / sq.m for 72 strokes at a frequency of 10/15 seconds and with a power of 265 decibels .a unheard plane .A power that exceeds the wall svuiluppa decibels of sound from 140/210

SCHEME db

10 db = silent

60 dB = conversation

137 db = eardrums pain threshold

150 db = pain threshold for the joints

165 db = internal sound pressure of a turbine boeing

190 db = noise of a bomb epicenter

210 db = sonic boom

215 db = space shuttle launch

235 db = 1 airgun

248 db = atomic bomb on Hiroshima

365 db = 72 air gun

### CETACEAN SPECIES PRESENT IN GREECE

[\(http://ioniandolphinproject.org/\)](http://ioniandolphinproject.org/)

Greek waters still harbour a remarkable richness of cetacean fauna compared to the rest of the Mediterranean. At least six are the cetaceans species present year-round: striped dolphin (*Stenella coeruleoalba*), common bottlenose dolphin (*Tursiops truncatus*) (hereafter bottlenose dolphin), short-beaked common dolphin (*Delphinus delphis*), Cuvier's beaked whale (*Ziphius cavirostris*), sperm whale (*Physeter macrocephalus*) and Risso's dolphin (*Grampus griseus*).

Bottlenose dolphins because of their primarily coastal distribution are probably those more negatively affected in numerous ways by anthropogenic impacts such as, incidental mortality in fishing gear, prey depletion caused by overfishing, boat disturbance, pollution and habitat degradation. There are indications that the fin whale (*Balaenoptera physalus*) and the harbour porpoise (*Phocoena phocoena*) could be also resident, with the porpoise being the most likely.

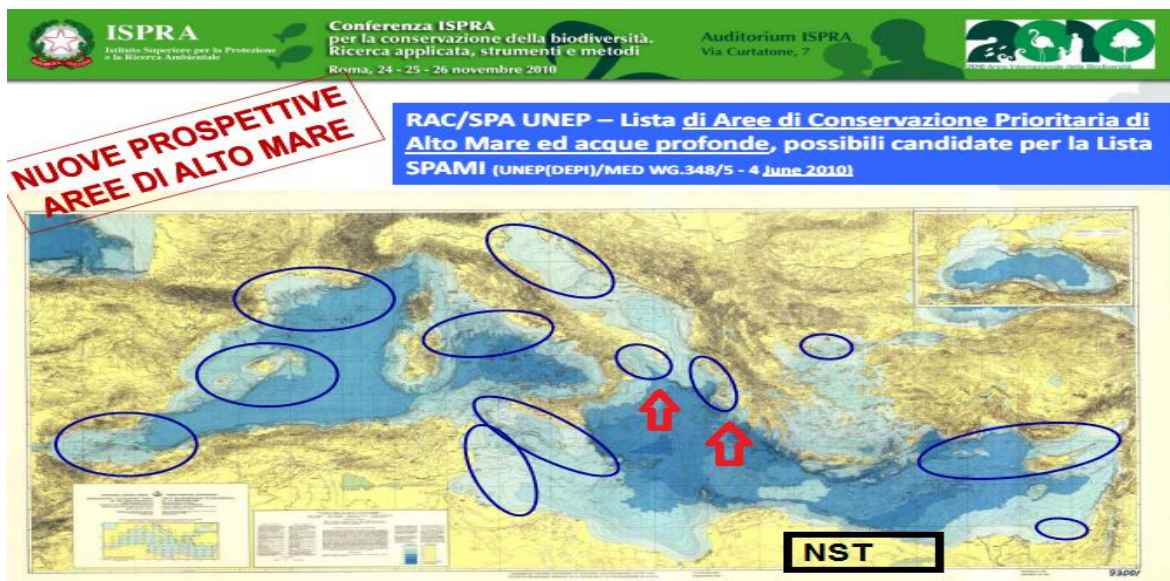


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Aree da proteggere per I cetacei ISPRA –IT (Istituto superiore per la protezione dell'ambiente)

### Areas to be protected for the ISPRA cetaceans - IT (Higher Institute for Environmental Protection)



Surveys to monitor dolphins in the coastal waters of Greece are conducted from inflatable boats with fibreglass keels, normally between April and September. Surveys to monitor dolphins in the Inner Ionian Sea archipelago were conducted from sailing vessels between 1991-1994, and since 1995 from inflatable boats with fibreglass keels. Surveys were conducted ad libitum in early years. In recent years, pre-defined survey transects are also used for the long-term monitoring of the study areas. Research effort in the Inner Ionian Sea archipelago is mainly conducted in the warm season (June-September). Research in the Amvrakikos Gulf was carried out year-round between April 2006 and December 2008. Since 2009 the field work is done from April to October. Individual photo-identification based on long-term natural marks on the dolphins' dorsal fins is performed extensively with cameras equipped with 70-200mm f2.8 zoom lenses. Colour transparency film

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(ISO 100) was used in the early years of this study, and then digital photography was systematically adopted. Transparencies were scanned and turned into digital images. Both transparencies and digital photos were then cropped around the dorsal fin and visible part of the body and selected using consistent criteria (e.g. entire fin visible, right angle, appropriate sharpness and resolution). Following a quality-based selection, the total catalogue 1991-2011 includes 83,933 photos on which photo-identification and other analyses can be performed. Photo-identification allows us to obtain information on individual movement patterns, habitat use and preferences, reproductive success, social organization, population abundance and dolphin population trends in the two study areas.

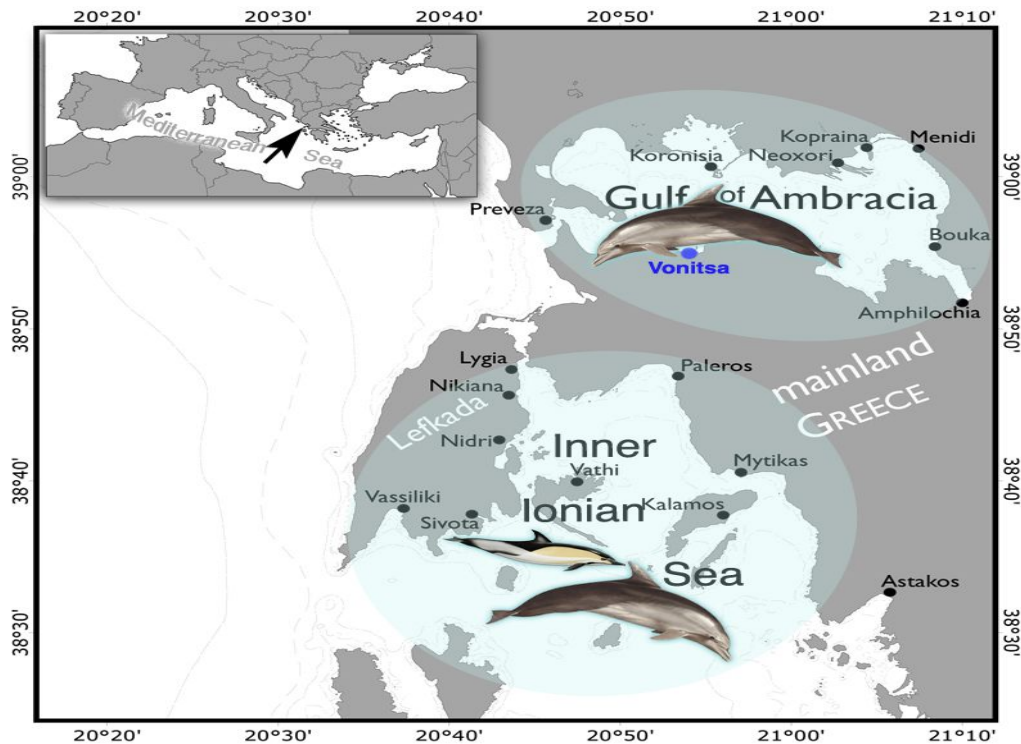
Dolphin behaviour is sampled at regular intervals. These samples include position, group size and composition, group formation, directionality and speed of movement, surfacing pattern, dive duration, dolphin activity and behavioural events, presence of birds and bird data, and several other variables. Marine species including sea turtles, monk seals, tuna, mobulas, swordfish and seabirds observed during the surveys at sea are recorded. Dead dolphins found stranded or adrift in the study area are inspected, and causes of death identified whenever possible. Findings are routinely reported to the Hellenic Ministry of Rural Development and Food and to the Pelagos Cetacean Research Institute, Athens. If possible, the animals are measured, sexed, and biological samples are taken. Occurrence of dolphin bycatch in fishing gear is also recorded. Drifting scales lost by fish prey following predatory events performed at the surface by the dolphins are collected by means of a dip net. The scales are subsequently analysed to identify the dolphin's prey species.

Striped dolphin.

### Study areas

**IDP study areas are remarkably diverse in terms of environmental features and threats posed by human activities, therefore offering opportunities for understanding the links between dolphin status and habitat quality in different situations.**

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The **Gulf of Ambracia**, or *Amvrakikos Gulf*, is our main study area and the place where the IDP field station is based. The Gulf is a semi-closed basin and one of the most productive coastal areas of Greece. Research conducted by the [Tethys Research Institute](#) since 2001 indicates that it hosts one of the highest densities of [bottlenose dolphins](#) of the Mediterranean Sea. Based on photo-identification work (49,500 dorsal fin photos filed and 196 individuals identified between 2001 and 2013), these dolphins show high levels of site fidelity within the gulf. Individual movements in and out of the Gulf appear to be limited, probably owing to dramatic differences between the shallow, highly productive, turbid waters of the Gulf and the deep, oligotrophic (low-nutrient), Ionian Sea open waters.

The Gulf of Ambracia is reportedly at risk owing to pollutants carried by the rivers Louros and Arachthos and to the wastewaters from the processing of agricultural products by small industries in the broader area. Human activities including agriculture, livestock, grazing, fishing and intensive fish farming have expanded rapidly in recent years, causing degradation of the wetland areas in the northern part of the gulf. Expansion of fish farming and agricultural intensification threaten the food web by increasing pollution levels. In April 2008 the gulf, which is also inhabited by loggerhead sea turtles and has a rich bird fauna including rare species, became a National Park. However, no management action has been taken to address problems related to increasing eutrophication, pollution and other anthropogenic impacts, and no consideration is being given to the Gulf's abundant marine megafauna.

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The **Inner Ionian Sea Archipelago**, where the IDP started in 1991, is just a few kilometres south of the Gulf. Research in this area was initially intended to focus on the ecology and behaviour of common dolphins in a place where these animals were particularly abundant. Instead, the study became a documentation of their sharp decline. [Common dolphins](#) in this area declined dramatically from approximately 150 to 15 animals between 1995 and 2007. Since then, a few sightings have been reported in the adjacent waters. Monitoring done in subsequent years (2008-2013) together with numerous reports of opportunistic sightings provided by sailors/boaters collaborating with the IDP showed that a few animals are still present and they likely roam across a much wider area, occasionally moving into their former wonderland. A number of calls were made by several marine conservation organisations to facilitate their recovery, to no avail. Decline of common dolphins in this area has been convincingly linked to overfishing and specific fisheries management solutions have been advocated.

Bottlenose dolphins are found in relatively small numbers, but they seem to have stable trends. Of about 120 individuals photo-identified in this area, about one quarter have shown high levels of site fidelity, while the others are transients. However, even individuals with high levels of 'residency' were found to make long-distance movements.

Groups of [striped dolphins](#) occasionally enter these waters. A few occasional sightings of single individuals of [Mediterranean monk seal \*Monachus monachus\*](#) have also occurred.

## Dolphin Watching Tips

You are here: [Home](#) > Dolphin Watching Tips





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**The waters of Greece still harbour a remarkable diversity of cetacean fauna compared to other parts of the Mediterranean. While today's abundance of dolphins is likely only a fragment of what it was a century ago, important populations still live and reproduce in the Greek seas.**

In recent years, the number of recreational boaters sailing across the beautiful waters of this part of the Mediterranean has increased exponentially. This increase in boat traffic and the potential disturbance it generates pose a threat to cetacean populations by causing unnecessary stress by disrupting their natural behaviors. Such threats can be minimised by applying a basic code of conduct when coming across a group of dolphins or whales. Please, **BE DOLPHIN SMART** and demonstrate your support for dolphin conservation.

- **S**tay back 50 metres from dolphins (100m from whales)
- **M**ove away cautiously if dolphins/whales show signs of disturbance (sudden change in behaviour)
- **A**lways put your engine in neutral when dolphins/whales are near
- **R**efrain from feeding, touching, or swimming with wild dolphins
- **T**each others to be **DOLPHIN SMART**

When in a vessel, do not approach closer than 100m to any whale or 50m to any dolphin.

The caution zone for vessels is the area within 300m of a whale and 150m of a dolphin. No more than three vessels should stay within the caution zone at any one time and vessels should move cautiously at no wake speeds within this zone.

Approach whales and dolphins from parallel to and slightly to the rear – not from directly behind or head-on.

When leaving whales or dolphins, move off at a slow (no wake) speed to the outer limit of the caution zone (300m) from the closest animal before gradually increasing speed.

Watch out for offspring presence! avoid disturbance to mother whales or dolphins and their calves. Mother and calf will be close together and the calves are sometimes difficult to see.

**If there is a sudden change in whale or dolphin behaviour, move away immediately at a slow steady pace.**

Whales and dolphins sometimes form social groupings and may approach your vessel – if this happens place the engine in neutral and let the animal(s) come to you; or slow down and continue on course; or steer a straight course away from them.

### **Publications and conference presentations**

Based on, or including research conducted by [Tethys](#) in the Inner Ionian Sea archipelago and Amvrakikos Gulf

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### Principio di precauzione

*I governi della UE sono tenuti a osservare ed applicare il principio di precauzione*

*Come stabilito dal trattato di Maastrich e come riportato nell'art.191 del trattato di funzionamento dell'Unione Europea . Si afferma che la politica dell'unione europea in materia ambientale persegue un elevato livello di tutela ed è fondato sui principi della precauzione e dell'azione preventiva ,sul principio della correzione ,in via prioritaria alla fonte ,dei danni causati all'ambiente e sul principio " chi inquina paga".*

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## PRINCIPLE OF PRECAUTION

EU governments are required to observe and apply the principle of precaution as established by the Treaty of Maastricht and as reported nell'art. 191 of the operation according to the EU Treaty. It states that European Union policy on the environment seeks a high level of protection and is based on the principles of precaution and preventive action, on the principle of rectification, as a priority at source, environmental damage and "polluter pays"

## *CONCLUSIONI*

- 1. Non è possibile ignorare l'esperienza di altri paesi che hanno già prima di noi dovuto affrontare la terribile esperienza di un disastro ambientale in mare;*
- 2. Non è possibile disattendere le osservazioni e i pareri negativi degli enti locali e delle associazioni e/o comitati di cittadini.*
- 3. Non è possibile consentire attività di ricerca in mare che prevedono anche scavo e/o lieve sbancamento del fondo marino senza prevedere l'obbligo della presenza, durate tutte le operazioni, della Soprintendenza ai Beni Archeologici.*
- 4. Non è possibile ignorare che nello studio di impatto ambientale vi è una scarsa indicazione degli effetti cumulativi delle ricerche petrolifere sull'ambiente.*
- 5. Non è possibile ignorare la mancata realizzazione del punto bianco ambientale*
- 6. Non è possibile ignorare il rischio che l'attività di ricerca di idrocarburi potrebbe determinare ai fusti di scorie radioattive o rifiuti tossici seppelliti nel mar ionio*

## CONCLUSIONS

- 1. You can not ignore the experience of other countries that have already before we had to face the ordeal of a disaster environment at sea;**
- 2. You can not disregard the comments and negative opinions of local authorities and associations and / or citizens' committees.**
- 3. You can not allow research activities at sea involving also excavation and / or slight excavation of the seabed without establish the requirement of the presence, durations all the operations, the Superintendent of archaeological heritage.**
- 4. You can not ignore that in the study of environmental impact is a bare indication of the cumulative effects research**

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oil on the environment.

5. You can not ignore the failure to complete the white point environmental

6. You can not ignore the risk that the research activities hydrocarbons may cause the drums of radioactive waste or toxic waste buried in the Sea ionio

**For all the above reasons it invites the Greek government to reject the application of the oil company**

**MEDITERRANEO NOSCORIE**  
**NOSCORIE TRISAIA**