



Professor Costas Synolakis
President and Director of HCMR

ΕΛΛΗΝΙΚΟ ΚΕΝΤΡΟ ΘΑΛΑΣΣΙΩΝ ΕΡΕΥΝΩΝ | www.hcmr.gr

HCMR Campuses

HQ- Anavissos



Athens



Crete



Rhodes



HCMR Aquaria

Crete: Thalassokosmos



Hydrological Station of Rhodes



HCMR FLEET

Research vessel “Aegaeo”



Built in 1985, Rebuilt in 1997

Length : 62 m
Max. Speed : 12.5 Knots
Maximum cruising range : 20 days

On-board Staff

Crew : 22 persons
Scientific personnel : 21 persons



Scientific Laboratories

- General Laboratories (Chemistry/Biology)
- Wet Laboratory
- Primary Productivity Laboratory
- Geological Acoustics survey room - CTD & Electronic Laboratory
- Computers Laboratory
- Container on board

R/V PHILIA

HCMR FLEET



Built in 1986
Length : 26,1 m
Max. Speed : 10 Knots
Maximum cruising range : 10 days

On-board Staff
Crew : 7 persons
Scientific personnel : 6 persons

Scientific Laboratories

- ✓ Wet Laboratory
- ✓ Dry Laboratory
- ✓ CTD & Electronic Laboratory
- ✓ Computers Laboratory



R/V ALKYON

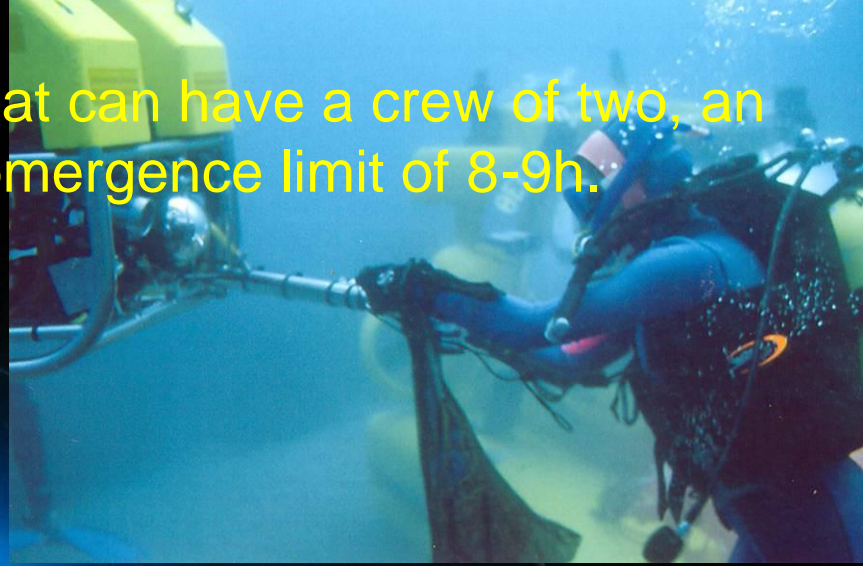
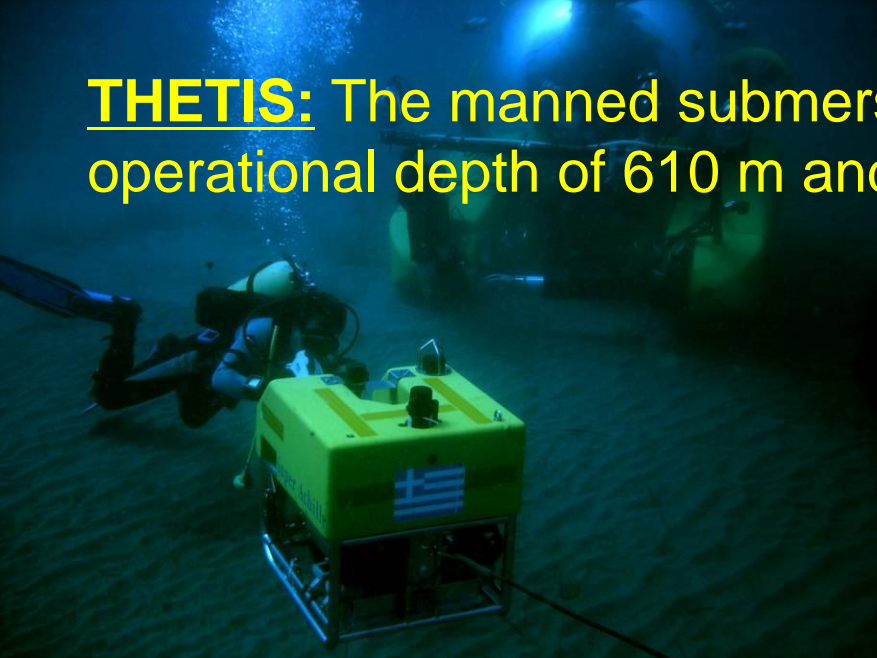
Built in 2009
Length: 13.40 m.
Max Speed: 20 Knots
Max cruising range: 1 day

On-Board Staff
Crew: 2 persons
Scientific personnel: 8 persons

Scientific equipment on board

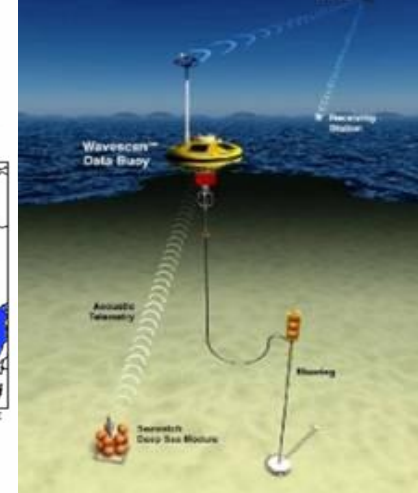
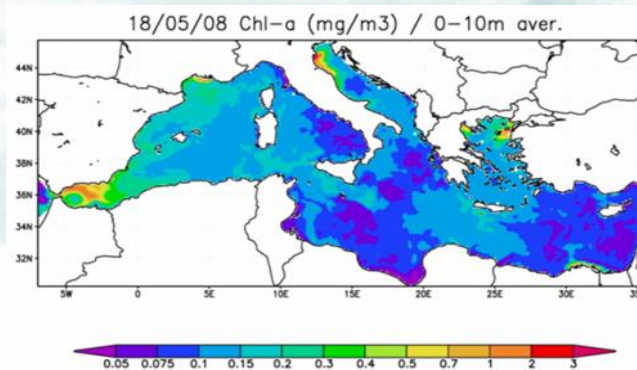
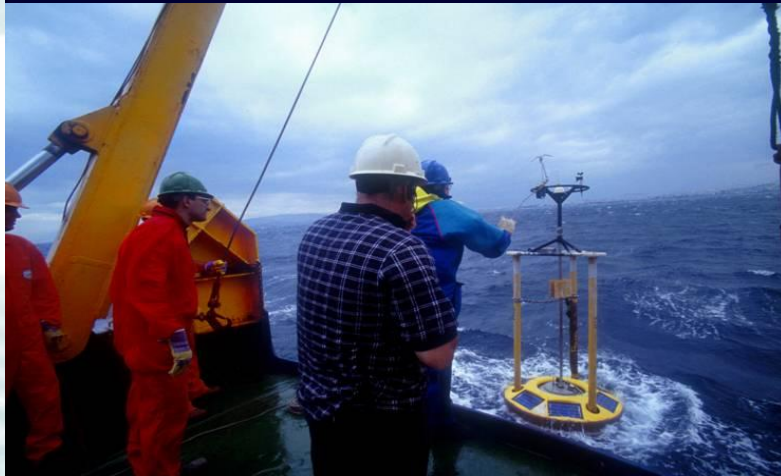
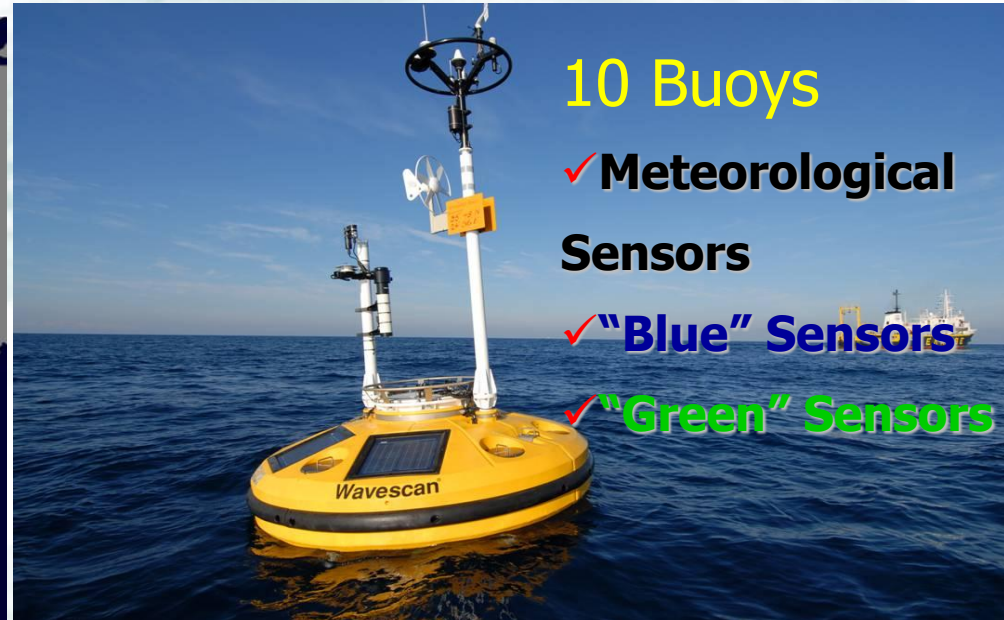
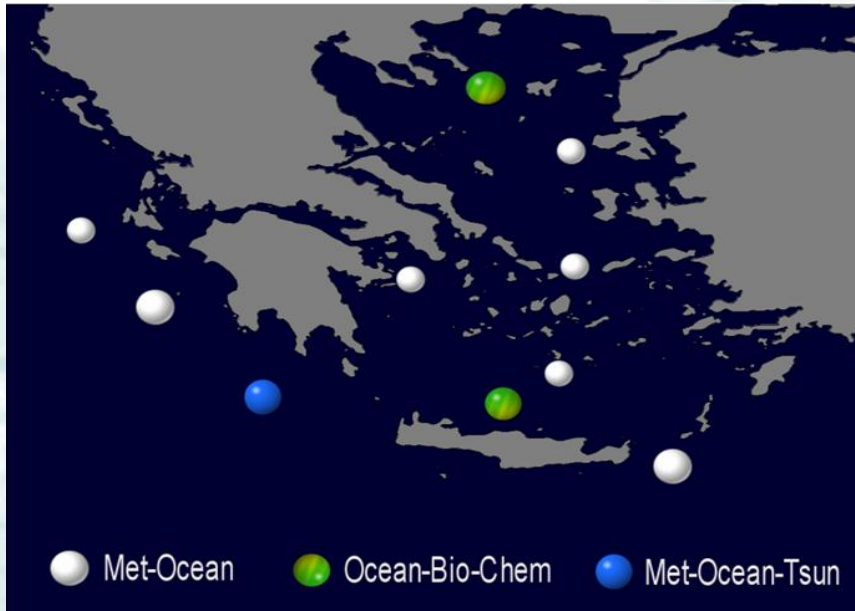
- ✓ CTD and Rosette
- ✓ Multi-Beam Sonar System.
- ✓ Sub Bottom Profiler 3.5 kHz
- ✓ Sediment and benthos samplers.
- ✓ Remotely Operated Vehicle - ROV

THETIS: The manned submersible that can have a crew of two, an operational depth of 610 m and a submergence limit of 8-9h.

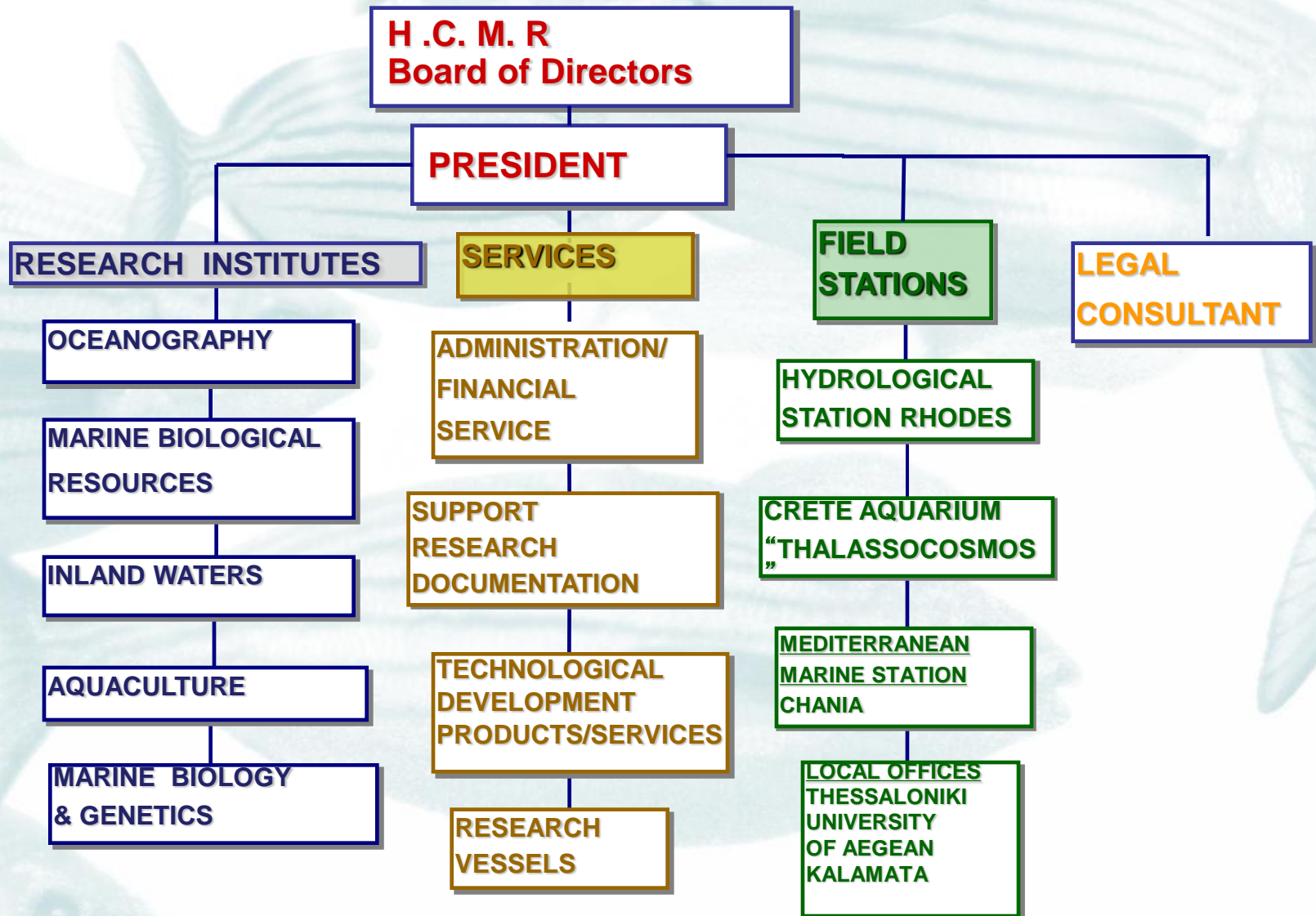


POSEIDON Observing Network:

An operational monitoring, forecasting and information system for the marine environmental conditions of the Hellenic Seas



HCMR Structure and Organization



HCMR Activities

- ❑ Plans and implements scientific and technological programs, projects and elaborates relevant research studies
- ❑ Promotes the development of relations and cooperation with international organizations, Institutes of Higher Education, and relevant national and international Research Institutes.
- ❑ Promotes scientific expertise on the aforementioned
- ❑ Contributes towards educating, informing and general awareness of the public
- ❑ Provides scientific and technological information through the appropriate website
- ❑ Provides products and offers services relevant to its research interests
- ❑ Represents Greece in international organizations with relevant activities

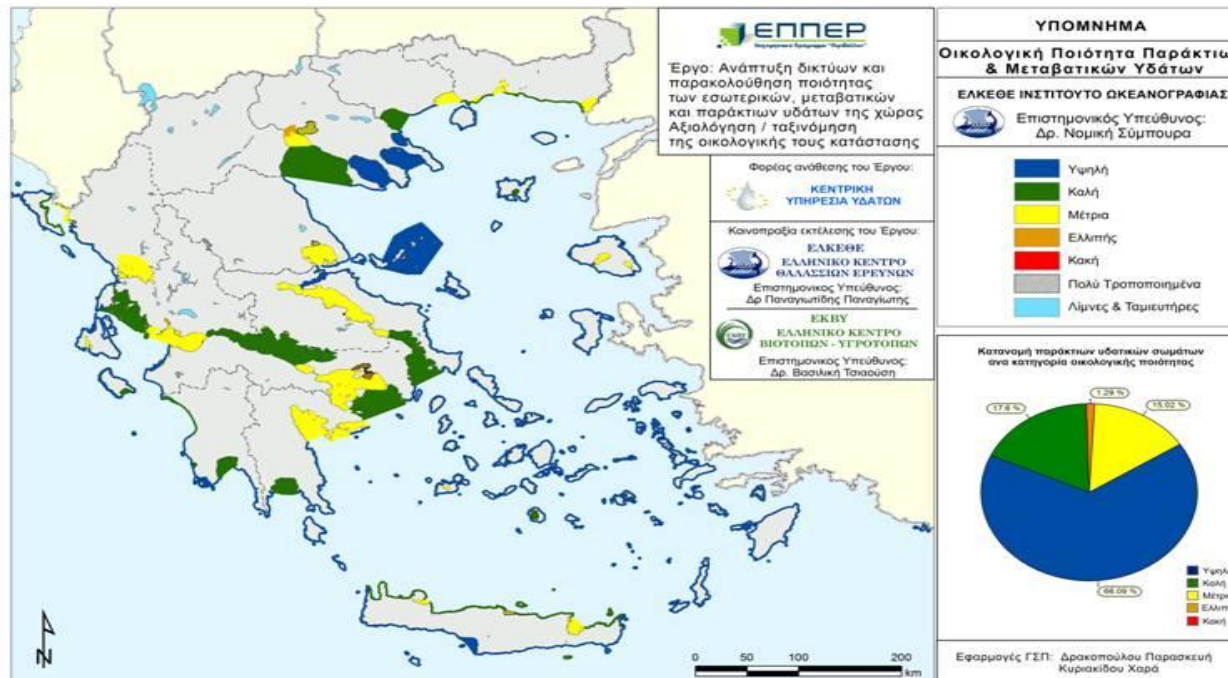
Our research

- HCMR carries out more than 180 research projects per year .
- More than 200 publications in scientific journals, 300 conference presentations and workshops, per year

Research-Integrated Coastal Zone Management (ICZM)

Objectives:

- Creation of a **multidisciplinary framework**,
- Development of **procedures** to facilitate **communication** with decision makers, stakeholders and the general public.
- Generation of an **information “Box” tool**



Ecological Quality (Water FW Directive)

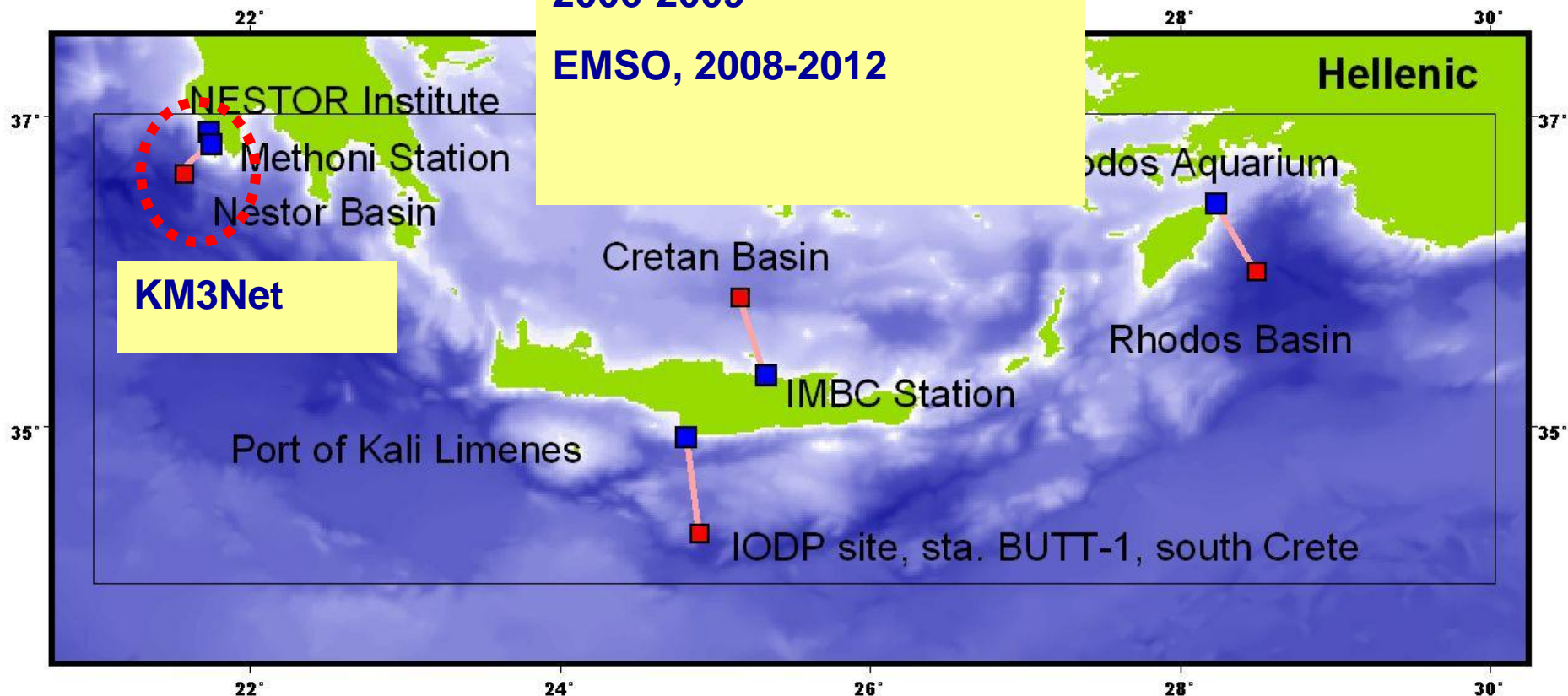
Research-Deep Sea Multi Parametric Observatories

Long term monitoring at deep for earthquakes, faults and sediment mass movements, hydrothermal and seep vents, bottom currents, tsunami, benthic processes

ESONET NoE

2006-2009

EMSO, 2008-2012

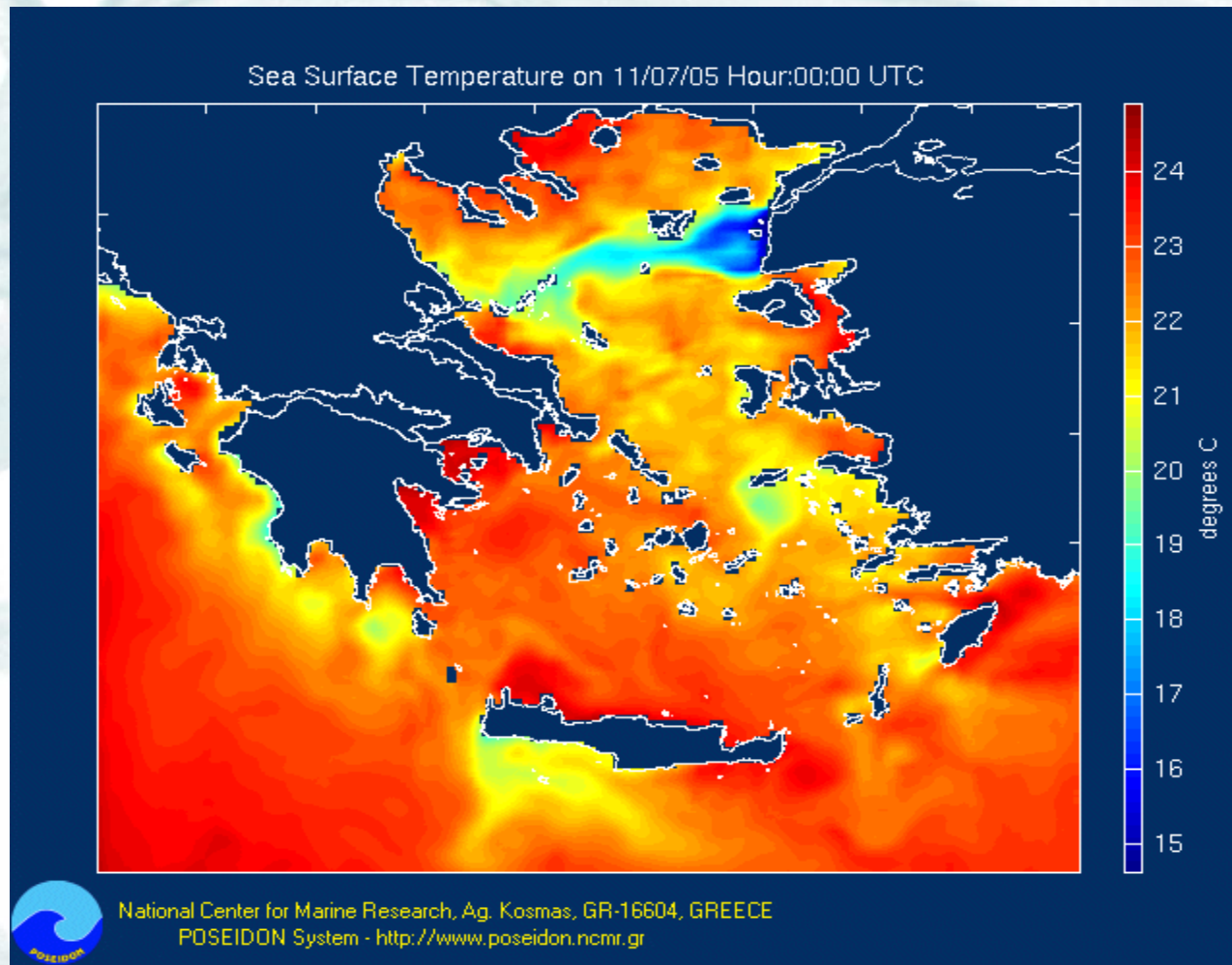


Cooperation

- Participation in the major EU infrastructures and Networks of Excellency (LifeWatch, EuroArgo, SeaDataNet, EurOceans, ESONET, MARBEF, etc)
- Participation in International Organizations, Committees and Working Groups (IOC/UNESCO, JCOMM, EuroGOOS, MedCLIVAR, ERA-NET, ICCAT, WoRMS, CIESM, etc)
- Collaboration and MoUs signed with numerous Institutes, Universities, and Organizations (UNEP/MAP) worldwide.
- Oceanographic study of the Red and Black Seas.

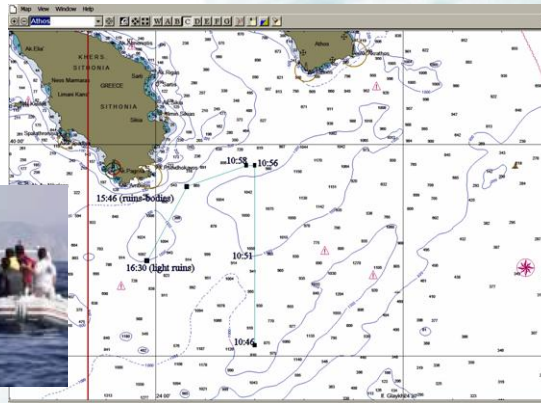
Operational Oceanography

Poseidon System: forecast in real time of atmospheric conditions, waves and current of the Hellenic Seas

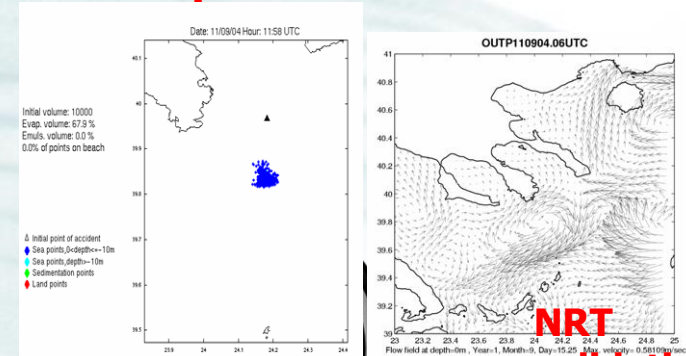


Search, rescue and recovery

Sep 2004
Helicopter crash:
Initial Data



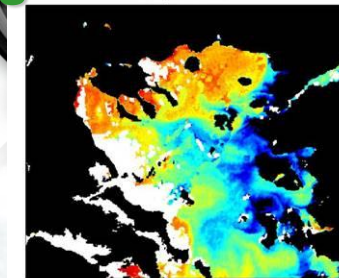
Drift backtrack experiments



NRT validation

List of Search and Recovery Operations

- Helicopter in Sounion (2002)
- Helicopter in Ikaria isl. (2003)
- MIRAGE aircraft in the Aegean Sea (2003)
- Schinook helicopter N. Aegean (2004)

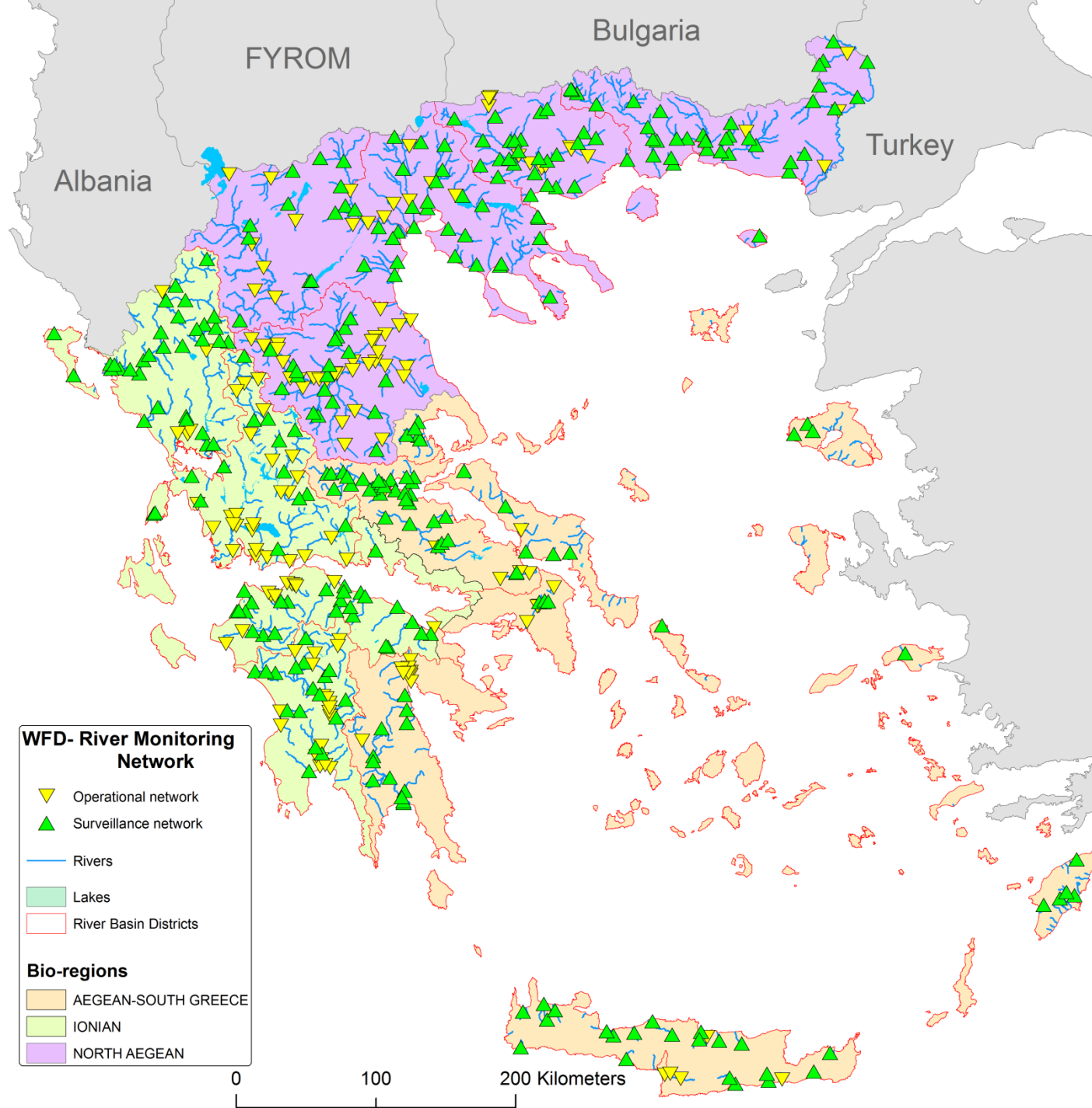


Visual Search & Recovery

River Basin District	Site network				Samples per year		
	Surveillance	Operational	Chemical substances		Macroinvertebrates	Fish	Physico-chemicals
North Peloponnese (02)	25	11	18		49	38	60
West Central Greece (04)	15	26	21		88	62	114
Attica (06)	4	4	3		14	10	18
Thessaly (08)	24	33	32		115	82	148
Central Macedonia (10)	22	5	12		29	24	34
Thrace (12)	36	4	20		36	32	40
Aegean Islands (14)	10	0	1		6	6	6
	300	149	193		642	493	791



Data production





RIPARIAN MACROPHYTE FIELD FORM - GREECE									
Sampling Site Haidou-subregion: <input type="checkbox"/> Louisa <input checked="" type="checkbox"/> Aetna-B. <input type="checkbox"/> other _____		Code	Site Name Kryoneri						
Hydrographic Basin (Name) Achelous		Water Course (Stream Name) Agarotisi	Sampling Site # Date August 2005						
Location (Detailed geographical distance from bridges etc.)		<input checked="" type="checkbox"/> See Fish survey for description							
GPS Coordinates		Altitude (m)							
Time		Start 14.20	Finish						
Respondent's Name & Site Status		<input checked="" type="checkbox"/> S. Zegaris <input checked="" type="checkbox"/> P. Dimopoulos <input type="checkbox"/> Reference Site <input type="checkbox"/> Fish Site <input type="checkbox"/> Non-Fish Site <input type="checkbox"/> Other Site							
Sampling Effort & Trial		<input type="checkbox"/> Rapid Assessment <input type="checkbox"/> Riparian Only <input type="checkbox"/> Total Vegetation <input type="checkbox"/> First Trial <input type="checkbox"/> Second Trial <input type="checkbox"/> Other _____							
ACCESSIBILITY									
Wade-able (<1 m)		<input checked="" type="checkbox"/>							
Non-wade able (>1 m)		Inventoried through shore From Boat							
MARGIN'S SUBSTRATE (%)									
	L	R	L	R					
Rock (supposed rock)		100							
Cobble (inches half whol)									
Pebble (half whol to coffee gran)	10								
Sand (smaller than coffee gran)									
SITE MODIFICATION (%) [Describe other potential impacts to veg.]									
None									
Roads/ road works	80								
Barrages/ sm. weirs									
Reinforced banks									
Deflections / intrusions	10								
Mineral extraction									
SITE ANTHROPOGENIC ALTERATIONS EVIDENCE (%)									
	Name	Golfing	Tram-ping	Erosion	Excavation	Canalized	Cons. Debris	Cut	Buildings (if larger than area)
L			20						
R			0						10
FLORA VERTICAL STRUCTURE									
Strata		height(m)	Sp dominant		Cover (%)				
High tree strata		> 8	Platanus		80				
Low tree strata		4-8	Platanus + Pinus sylvestris		10		15		
High bush strata		2-4	Elaeagnus		5				
Low bush strata		< 2	Spartina anglica		5				
Shrub			Rosmarinus		25				
Herbaceous		> 0.5	Panicum capillare		3				
Lianas		< 0.5	Miconia		1				
Aquatic			Najas		1				

artificial foundation excavated abstruct.

ON Left side

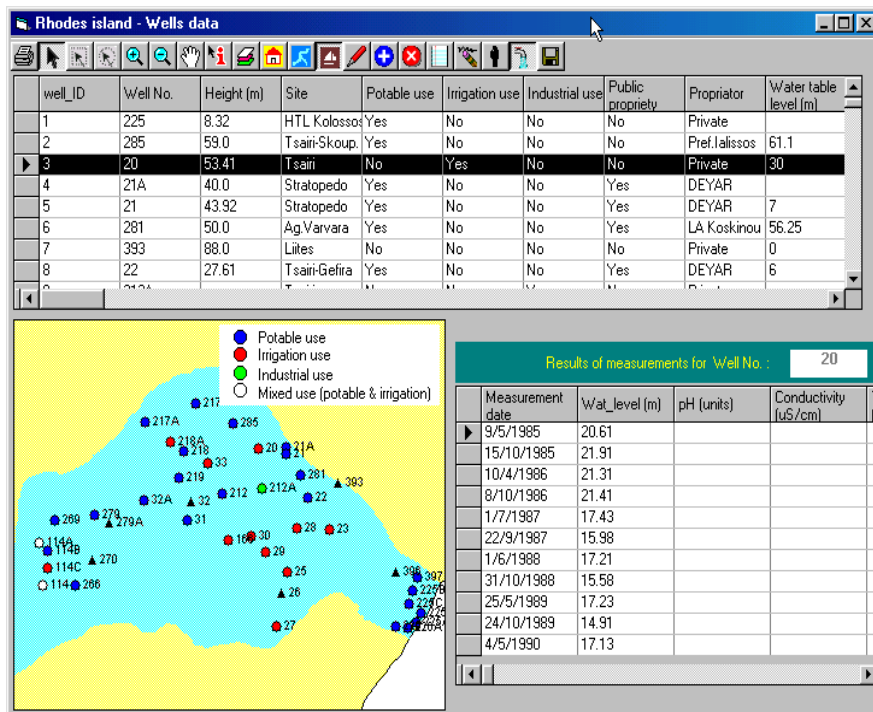
FLORISTIC COMPOSITION		L B		SPECIES		%RCS
SPECIES	% RCS	SP N°	RCS (%)	LOCAL ECOLOGY (substrate, flow, shading)	Sample n°	RCS %
<i>Salix purpurea</i>	10	1				
<i>Platanus</i>	9	15				
<i>Rubus</i>	25	3				
<i>Astus</i>	1	0				
<i>(Phragmites)</i>	7	0				
<i>(Typha)</i>	4	0				
<i>Ficus carica</i>	1	0				
<i>Juglans regia</i>	2	0				
<i>Salix alba</i>	6	3				
<i>Agave nigra hybrid</i>	2	0				
<i>(Cotex)</i>	1	0				
<i>Flacanthus acule</i>	3	1				
<i>Salix amygdaloides</i>	5	0				
<i>Salix elongata</i>	1	0				
<i>Juniperus</i>	1	0				
<i>Nedera</i>	2	0				
<i>Juniperus oxy</i>	1	0				
<i>Ruscus</i>	1	0				
<i>Quercus coccifera</i>	1	0				
<i>Crataegus</i>	1	0				
<i>Philirea</i>	0	1				
<i>Arbutus</i>	0	2				
<i>Q. ilex</i>	0	10				
<i>Ficus villoza</i>	0	7				
<i>Mitras fenestratus</i>	0	5				
UNCOVERED	2	60				
AREA	20	34				
RWMX	60	3				
R/M/N	35	3				
RWM	25	0				
Alumot's <i>gy</i>	3	0				
ALGAS				Sample n°	RCS %	
Green	Filamentous					
	Broad-leaved					
Brown	Filamentous					
	Broad-leaved					

(RCS: Relative Cover of the species per Segment)

R: very steep rock slope, Very very limited hydrophytous section -

L: varied, low sloping w/ Platanus grove, marshy section etc.³
Very natural looking; but few spp. in the mature Platanus grove.

[illegible]



The Informatics Centre of HCMR have already undertake the development of a database. It will be based on open sources software (e.g. MySQL)

Inflation / Water & electricity prices

Inflation rate

Past data

Year: Inflation (%): Add

Year-1: Year-2: Trend

Projections

☐ Constant annual rate of change:

☐ Differentiated annual rate of change:

Year	Inflation rate
2001 - 2006	<input type="text"/>
2006 - 2011	<input type="text"/>
2011 - 2020	<input type="text"/>

Water & Electricity prices

WATER

Year: Potable: Industry: Agriculture: EUR (Euro) / m3

☒ Use constant price for projections

☐ Increase as inflation

☐ Increase above inflation: %

ELECTRICITY

Year: Industrial use: Other uses: EUR (Euro) / kWh

☒ Use constant price for projections

☐ Increase as inflation

☐ Increase above inflation: %

Industrial use: % Other uses: %

Result: Ecological Status Classification



Information Dissemination

Research

Management

Education

Public
Information

Users' Queries



Management & Control over data

Intermediate Agency (e.g.
Greek Ministry of Environment)



Env. Conditions:

- Physicochemical
- Nutrients
- Geomorphological &
State of habitats
(RHS, QBR, FAME)

ECOLOGICAL STATUS =
Data + Indices

GIS

Data check -
Quality Control &
Statistics

Biological Quality Elements:

- Fish
- Benthic invertebrates
- Benthic Diatoms

The Hellenic National Oceanographic Data Centre

- It was established in **1986** from the cooperation of Greece with IOC/UNESCO
- It's the **Responsible National Agency** for the management and exchange of oceanographic data and information
- It's part of the international network of the **NODC's** of the **IOC/IODE**
- It's operates within the framework of **HCMR**

HNODC Data sources

- The National Greek Research Centers
- Participation through the HNODC in **National, European and International Data and Exchange Projects**

HNODC Projects

Participation in Research Projects during the last 15 yrs:

- **MEDATLAS (1994) PP** -A Composite quality checked hydrographic data set for the Mediterranean Sea
- **EURONODIM (1998)** -European Network for Oceanographic Data & Information Management
- **MEDAR/MEDATLAS (1998)**- Mediterranean Data Archaeology and Rescue of Temperature, Salinity and Bio-Chemical Parameters (*Coordinator of the Eastern Mediterranean Data Assembling and Quality Control*)
- **EDIOS (2001)**- European Directory of Initial Ocean Observing System (*Regional Coordinator of Eastern Mediterranean*)
- **SEASEARCH (2002)**- A Pan-European Network on Oceanographic Data and Information Management
- **BLACKSEASCENE (2005)**- Black Sea Scientific Network
- **SEADATANET (2006)**- Pan-European infrastructure for Ocean & Marine Data Management (*Coordinator of the Networking Activities*)
- **HUMBOLDT (2006)**- Development of a Framework for Data Harmonization and Service Integration
- **CASPINFO (2008)**- Caspian Environmental and Industrial Data & Information Service
- **BLACKSEASCENE UPGRADE (2009)**- Black Sea Scientific Network Upgrade
- **EMODNET Lot 3 (2009)** – Chemical Data: Preparatory Actions For European Marine Observation and Data Network
- **EMODNET (2010)** –*Seabed Mapping*
- **SEADATANET-2 (2011)**- Pan-European infrastructure for marine and ocean data management (*Coordinator of the Networking Activities*)

Support the HCMR Projects



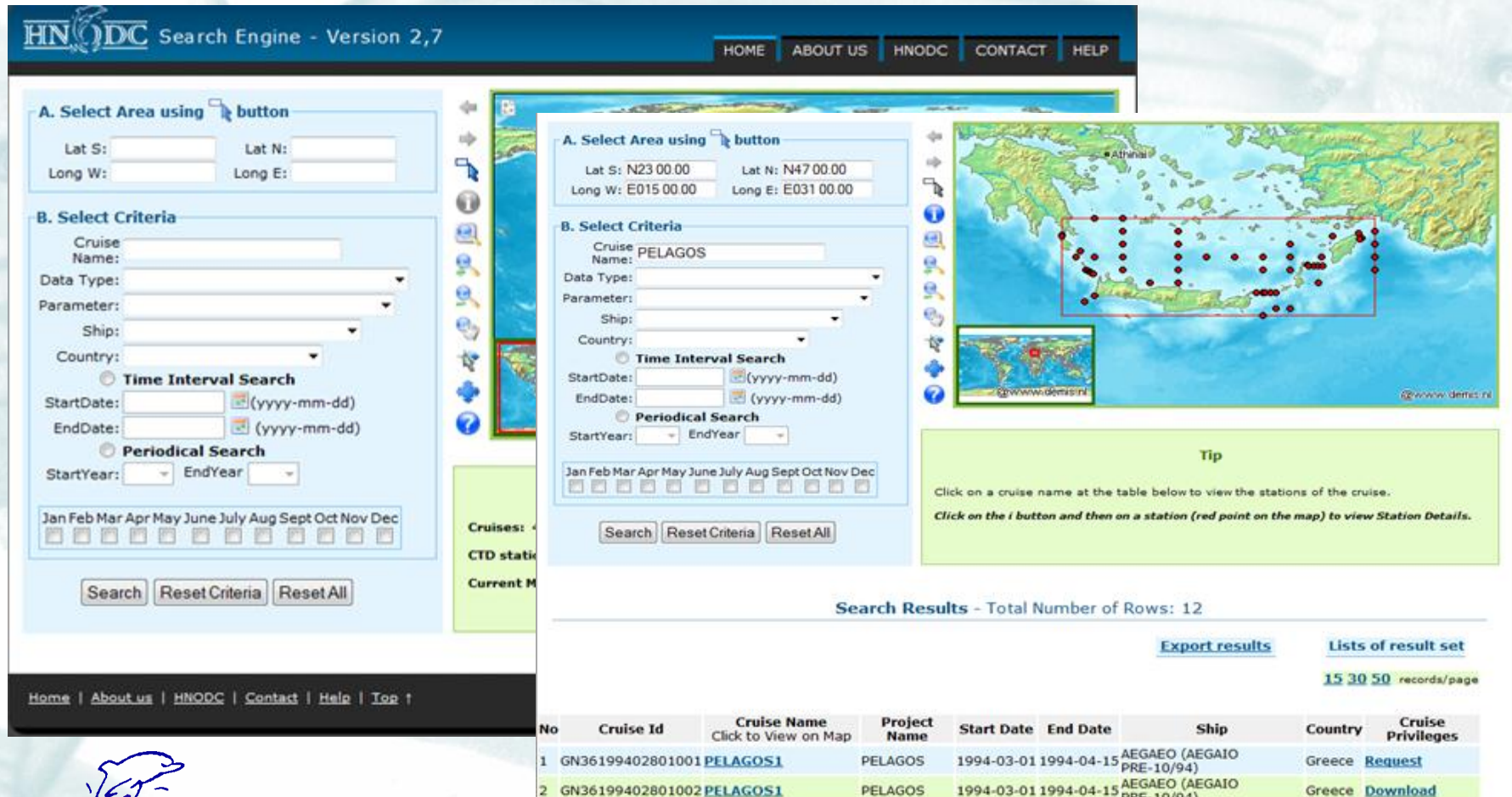
HNODC supports the data management component of the HCMR projects such as:

- **INSEA** - Data Integration System for Eutrophication Assessment in Coastal Waters
- **CIRCE** - Climate Change and Impact Research: the Mediterranean Environment
- **SESAME** - Climate Change and Impact Research: the Mediterranean Environment
- **PERSEUS** - Policy oriented marine Environmental Research of the Southern European seas
- **COCONET** - Towards COast to COast NETworks of marine protected areas



On-line Services

Online Data Search & Download Service (with web enabled GIS technologies)



The screenshot displays the HNODC Search Engine interface, Version 2.7. The interface is divided into several sections:

- Navigation Bar:** Includes links for HOME, ABOUT US, HNODC, CONTACT, and HELP.
- A. Select Area using button:** Contains input fields for Latitude (Lat S, Lat N) and Longitude (Long W, Long E).
- B. Select Criteria:** Includes fields for Cruise Name, Data Type, Parameter, Ship, and Country. It also features radio buttons for Time Interval Search and Periodical Search, with corresponding date/year selection options.
- Map:** A map of the Aegean Sea region with a red rectangle indicating the search area. Red dots represent cruise stations.
- Search Results:** Displays the total number of rows (12) and provides links for Export results and Lists of result set.
- Table:** A table listing search results with columns for No, Cruise Id, Cruise Name, Project Name, Start Date, End Date, Ship, Country, and Cruise Privileges.

No	Cruise Id	Cruise Name Click to View on Map	Project Name	Start Date	End Date	Ship	Country	Cruise Privileges
1	GN36199402801001	PELAGOS1	PELAGOS	1994-03-01	1994-04-15	AEGAIO (AEGAIO PRE-10/94)	Greece	Request
2	GN36199402801002	PELAGOS1	PELAGOS	1994-03-01	1994-04-15	AEGAIO (AEGAIO PRE-10/94)	Greece	Download

HCMR future priorities

- New knowledge and promotion of excellence in marine research
- Contribution to the implementation process of the national policy for the marine research and technology
- Support of national policies for the climate-environment-fishery-safety.
- Contribution in the sustainable economic growth that is based on exploitation of marine resources and services with simultaneous protection of environment
- Development of national infrastructure for state of the art research
- A unified research and education area in Greece.
- The HORIZON 2020 targets

HNODC contribution

- ❑ **Our ultimate goal:** to built an integrated data system which will provide data and services of the highest quality
- ❑ at **National, Pan-European** (SeaDataNet) and **Global** level (IODE/ODP)
- ❑ Implementation of the **EU policies and directives**
- ❑ Support **National Strategies**



Ευχαριστώ πολύ για την προσοχή σας

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