

## Needs for Data and Information

Managing living and non-living resources, monitoring environmental changes in the sea and protecting the marine environment, require long time series of observations of:

◆ **Dissolved Oxygen:** low oxygen levels in the upper layers, can result in reduction of higher life forms, release of toxic forms of metals and pathology in living organisms.

◆ **Nutrients:** changes in nutrient fluxes can alter primary production and bio-diversity, and can directly affect aquaculture and fishing activity.

◆ **Temperature and Salinity:** are the primary indicators of climate change and allow the computation of other derived parameters such as density, sound velocity, and geostrophic current, widely used in scientific and technical studies.

Presently, not all of the data collected by the scientific laboratories of the bordering countries have been inventoried and safeguarded. Data never archived in a public data bank are in danger of being lost. Studies show that without appropriate safeguarding, about 30% of them will be lost within 10 years. Data collected in variable environment cannot be remade.

The need for marine database and appropriate data management is particularly crucial in the Mediterranean and Black Sea. MEDAR aims to prepare a comprehensive database of these key parameters and to enhance the data management structures. Linked to the world-wide IOC GODAR project, and following MEDATLAS pilot project ((MAS2-CT93-0074), the tasks are defined to give an adapted answer to the regional needs in data management.

## MEDAR/MEDATLAS Objectives

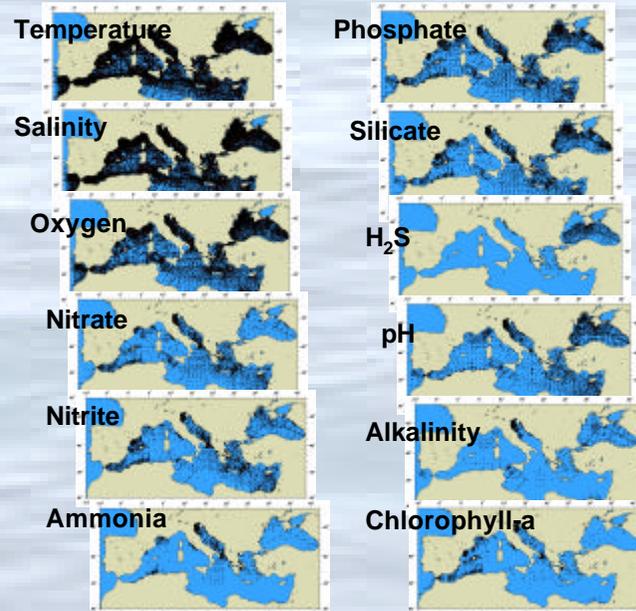
The objective of the MEDAR/MEDATLAS II project (1998-2001) is to rescue, safeguard and make available a comprehensive data set of oceanographic parameters collected in the Mediterranean and Black Sea, through a wide co-operation of the Mediterranean and Black Sea countries. Bio-chemical observations dispersed in the scientific laboratories are compiled, checked for quality, processed to get climatological gridded statistics and distributed through user friendly software tools.

The tasks are co-ordinated within regional and thematic workpackages.

It is expected that the resulting database will be of widespread benefit to research, industrial and monitoring programmes of the Mediterranean and Black seas regions. It will also contribute to data management capacity building through enhanced data exchange, workshops and training on quality control, data processing and mapping.

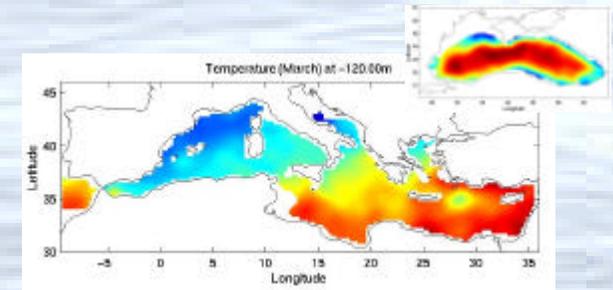
MEDAR/MEDATLAS is a European MAST/INCO concerted action and a regional contribution to UNESCO/IOC Global Ocean Data Archaeology and Rescue (GODAR) project.

## MEDAR Database of Observed vertical profiles



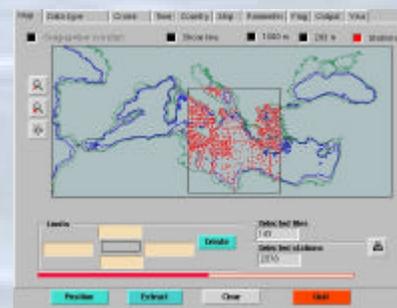
## Gridded Data of Climatological Statistics

Computed by using the Data Inverse Variational Analyzer DIVA



On line tools are available for data analysis and data extraction

User interface for data selection according to various criteria



## Data Dissemination

The data are disseminated by the National Coordinators, according to the Intergovernmental Oceanographic Commission (IOC) policy on any usual electronic media and on line.

At the end of the project, a synthetic data product will be published on Cdrom.

# Quality Assurance

According to the international recommendations, all the observations are checked for Quality (QC) by automatic and visual checks. As a result, the data are not changed, but a quality flag is added to each numerical value.

## QC-1: Check of the Position and date

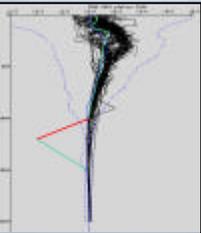
Automatic Checks	Results - Flag
Duplicate data sets	Elimination
Date	Elimination or 5
Ship/Platform velocity	Elimination or 5
Location/shoreline	Elimination or 5
Bottom sounding (ETOPOS)	Elimination or 3

■ 5 = Correction/Interpolation  
■ 3 = doubtful depth



## QC-2: Check of the Data Points

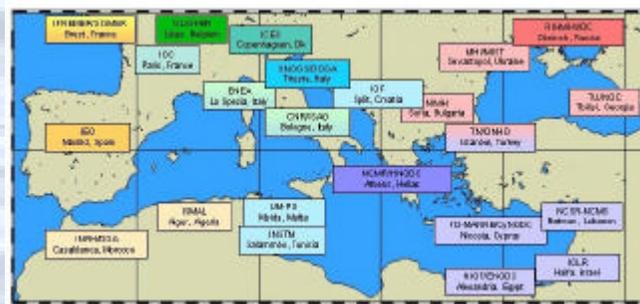
Automatic Checks	Results/Flag
Pressure record only	Elimination
Out of the regional scale (min & max values)	4
Non Increasing pressure	4
date below the bottom depth	4
Cohereance with pre-existing statistics (LEVITRA, ARONAUS, MEDATLAS)	2
Constant profiles	4
Spikes - Gradient	3
Vertical instability > noise	4



A quality assurance methodology is also developed for meta-data (inventories) and gridded data (climatologies).

The methodology for data formatting and data checking is described in the MEDAR/MEDATLAS protocol.

# MEDAR Network



### Regional Centres

- **Western Basin** - IEO Data Centre, Spain  
<http://www.ieo.es/medar/>
- **Central Basin** - INOGS, Italy  
<http://doga.ogs.trieste.it/medar>
- **Eastern Basin** - NCMR/HNODC, Greece  
[http://hnodc.ncmr.gr/proj\\_med2.html](http://hnodc.ncmr.gr/proj_med2.html)
- **Black Sea & General Inventory** - RIHMI/WDC, Obninsk, Russia  
[www.meteo.ru/nodc/project/project.htm](http://www.meteo.ru/nodc/project/project.htm)

### Thematic Centres

- **Integration** - IFREMER, France  
[www.ifremer.fr/medar/](http://www.ifremer.fr/medar/)
- **Objective analysis & gridding** - GHER, Belgium  
<http://modb.oce.ulg.ac.be/Medar>  
M.Rixen@ulg.ac.be
- **Quality Assurance Protocol** - ICES, Denmark  
<http://www.ices.dk/>  
harry@ices.dk
- **Operational Oceanography** - N. Pinardi@isao.bo.cnr.it
- **International Links**  
<http://ioc.unesco.org/medar/>  
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## Mediterranean Data Archaeology and Rescue of Temperature, Salinity and Bio-chemical Parameters

MAST Concerted Action  
MAS3-CT98-0174/ERBIC20-CT98-0103

