CRUISE SUMMARY REPORT

CRUISE Name: Bonifacio_corr **No:**
enter the unique number, name or acronym assigned to the cruise (or cruise leg, if appropriate).

CRUISE PERIOD start: 12/03/2010 to end : 22/03/2010
PORT OF DEPARTURE (enter name and country) **OLBIA (ITALY)**
PORT OF RETURN (enter name and country) **OLBIA (ITALY)**

SHIP Name: R/V Maria Grazia **Call Sign:**
Type of ship: RESEARCH VESSEL
enter the full name and international radio call sign of the ship from which the data were collected, and indicate the type of ship, for example, research ship; ship of opportunity, naval survey vessel; etc.

RESPONSIBLE LABORATORY
enter name and address of the laboratory responsible for coordinating the scientific planning of the cruise
Name: IAMC CNR, U.O.S. ORISTANO
Address: LOC. SA MARDINI, TORREGRANDE (OR)
Country: ITALY

CHIEF SCIENTIST(S) Name: MR MIRENO BORGHINI (ISMAR CNR UOS LA SPEZIA)
DR ALBERTO RIBOTTI (IAMC CNR UOS ORISTANO)

enter name and laboratory of the person(s) in charge of the scientific work (chief of mission) during the cruise.

OBJECTIVES AND BRIEF NARRATIVE OF CRUISE:
enter sufficient information about the purpose and nature of the cruise so as to provide the context in which the report data were collected.

The cruise has been planned to reach the following objectives:

1.Validation of numerical models

Measurements will be used to validate four numerical circulation models implemented at IAMC-CNR in Oristano (SCRM32, SCRM48, WMRM, BONIFACIO/LA MADDALENA) and at ISMAR-CNR in La Spezia (box model). The three models at IAMC-CNR in Oristano are then operational models as they give daily forecasts for the following 5 days of the main oceanographic parameters (temperature, salinity, water and surface heat fluxes, currents, waves).

2. Methodological developments

- **Measurements of velocity profiles by SADCP;**
- **Periodical maintenance of currentmeters moored in the Corsica Channel;**

PROJECT (IF APPLICABLE) if the cruise is designated as part of a larger scale cooperative project (or expedition), then enter the name of the project, and of organisation responsible for co-ordinating the project.

The cruise has been organised in the framework of the following projects:

- **ECOOP - European COastal-shelf sea OPerational observing and forecasting system (European IP);**
- **MyOcean, (European IP);**
- **PRIMI - Progetto Pilota Inquinamento Marino da Idrocarburi, financing ASI;**
- **SOS-Bonifacio,** progetto finanziato dal Ministero dell'Ambiente e della Tutela del Territorio e del Mare;

PRINCIPAL INVESTIGATORS Enter the name and address of the Principal Investigators responsible for the data collected on the cruise and who may be contacted for further information about the data. (The letter assigned below against each Principal Investigator is used on pages 2 and 3, under the column heading 'PI', to identify the data sets for which he/she is responsible)

PI	name	body	address	country	e-mail
B	MIRENO BORGHINI	ISMAR CNR	LA SPEZIA	ITALY	mireno.borghini@sp.ismar.cnr.it
A	ALBERTO RIBOTTI	IAMC CNR	ORISTANO	ITALY	alberto.ribotti@cnr.it

MOORINGS, BOTTOM MOUNTED GEAR AND DRIFTING SYSTEMS

This section should be used for reporting moorings, bottom mounted gear and drifting systems (both surface and deep) deployed and/or recovered during the cruise. Separate entries should be made for each location (only deployment positions need be given for drifting systems). This section may also be used to report data collected at fixed locations which are returned to routinely in order to construct 'long time series'.

PI	Latitude deg – min - N/S	Longitude deg – min - E/W	TYPE enter code(s) from list on last page.	DESCRIPTION Identify, as appropriate, the nature of the instrumentation the parameters (to be) measured, the number of instruments and their depths, whether deployed and/or recovered, dates of deployments and/or recovery, and any identifiers given to the site.
COR	43 01.76 N	009 41.123 E	H10, H11, D01, D06	Currentmeters and CTDs to measure temperature, conductivity, pressure and current at different depths Currentmeters and CTDs to measure temperature, conductivity, pressure and current at different depths Currentmeters and CTDs to measure temperature, conductivity, pressure and current at different depths

SUMMARY OF MEASUREME NTS AND SAMPLES TAKEN Except for the data already described on page 2 under 'Moorings, Bottom Mounted Gear and Drifting Systems', this section should include a summary of all data collected on the cruise, whether they be measurements (e.g. temperature, salinity values) or samples (e.g. cores, net hauls).
Separate entries should be made for each distinct and coherent set of measurements or samples. Different modes of data collection (e.g. vertical profiles as opposed to underway measurements) should be clearly distinguished, as should measurements/sampling techniques that imply distinctly different accuracy's or spatial/temporal resolutions.

Thus, for example, separate entries would be created for i) BT drops, ii) water bottle stations, iii) CTD casts, iv) towed CTD, v) towed undulating CTD profiler, vi) surface water intake measurements, etc.
Each data set entry should start on a new line – it's description may extend over several lines if necessary.
NO, UNITS : for each data set, enter the estimated amount of data collected expressed in terms of the number of 'stations'; miles' of track; 'days' of recording; 'cores' taken; net 'hauls'; balloon 'ascents'; or whatever unit is most appropriate to the data. The amount should be entered under 'NO' and the counting unit should be identified in plain text under 'UNITS'.

Table CTD casts list

Sampling type and institute: N = Nutrients; C = Box Corer; O = dissolved oxygen; E = marine microbic ecology.

STAZIONE	DATA	PROF_MAX	LAT °	LONG °	FILE
101	14/03/2010	99.182	43.0315	10.34783	d101.cnv
102	14/03/2010	106.123	43.03467	10.27	d102.cnv
103	14/03/2010	113.064	43.038	10.18867	d103.cnv
104	14/03/2010	142.807	43.03483	10.09467	d104.cnv
105	14/03/2010	86.291	43.03767	9.981333	d105.cnv
106	14/03/2010	97.199	43.03483	9.882833	d106.cnv
107	14/03/2010	100.174	43.04083	9.766333	d107.cnv
108	14/03/2010	431.094	43.02533	9.700833	d108.cnv
109	14/03/2010	357.823	43.02583	9.6405	d109.cnv
110	14/03/2010	240.93	43.02533	9.600667	d110.cnv
111	14/03/2010	53.564	43.02567	9.507333	d111.cnv

STAZIONE	DATA	PROF_MAX	LAT °	LONG °	FILE
b10	18/03/2010	63.492	41.29233	9.222833	db10.cnv
b11	18/03/2010	67.46	41.2935	9.260833	db11.cnv
b12	18/03/2010	68.452	41.31367	9.298667	db12.cnv
b13	18/03/2010	77.378	41.33633	9.3305	db13.cnv
b14	18/03/2010	82.337	41.3585	9.354333	db14.cnv
b15	18/03/201	84.322	41.271	9.4595	db15.cn

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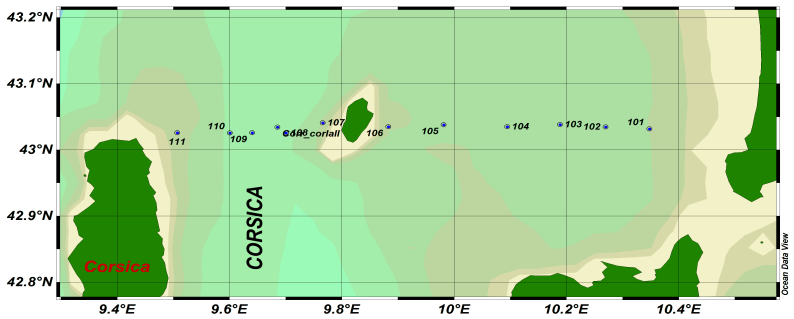
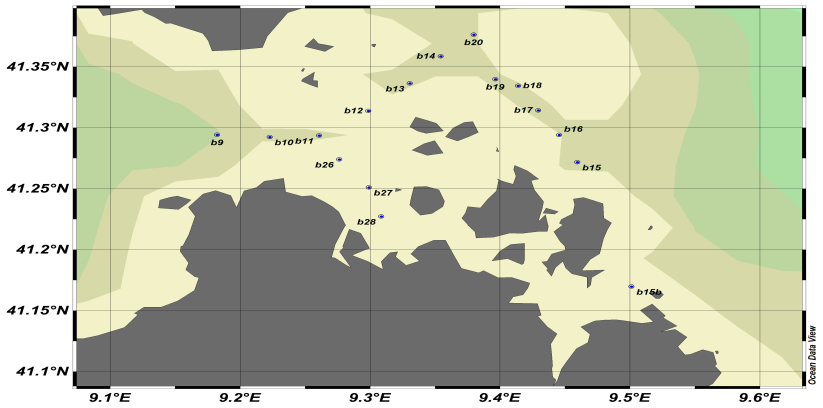
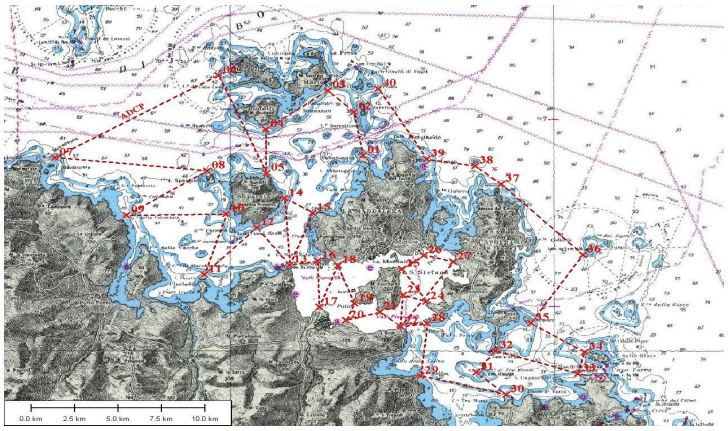
b15b	18/03/2010	33.733	41.16967	9.501167	db15b.cnv
b16	18/03/2010	82.338	41.294	9.4455	db16.cnv
b17	18/03/2010	75.395	41.31417	9.429333	db17.cnv
b18	18/03/2010	76.386	41.33433	9.414	db18.cnv
b19	18/03/2010	77.378	41.33967	9.3965	db19.cnv
b20	18/03/2010	85.313	41.37617	9.379833	db20.cnv
b26	18/03/2010	56.549	41.274	9.276167	db26.cnv
b27	18/03/2010	44.645	41.251	9.299	db27.cnv
b28	18/03/2010	32.741	41.22717	9.3085	db28.cnv
b9	18/03/2010	69.444	41.29417	9.182333	db9.cnv

TRACK CHART

You are strongly encouraged to submit, with the completed report, an annotated chart illustrating the route followed and the points where measurements were taken.







GENERAL OCEAN AREA(S) :

Enter the names of the oceans and/or seas in which data were collected during the cruise - please use commonly recognised names(see, for example, international Hydrography Bureau Special Publication No. 23, iLimts of Oceans and Seas').

CORSICA CHANNEL
BONIFACIO MOUTHS
LA MADDALENA ARCHIPELAGO

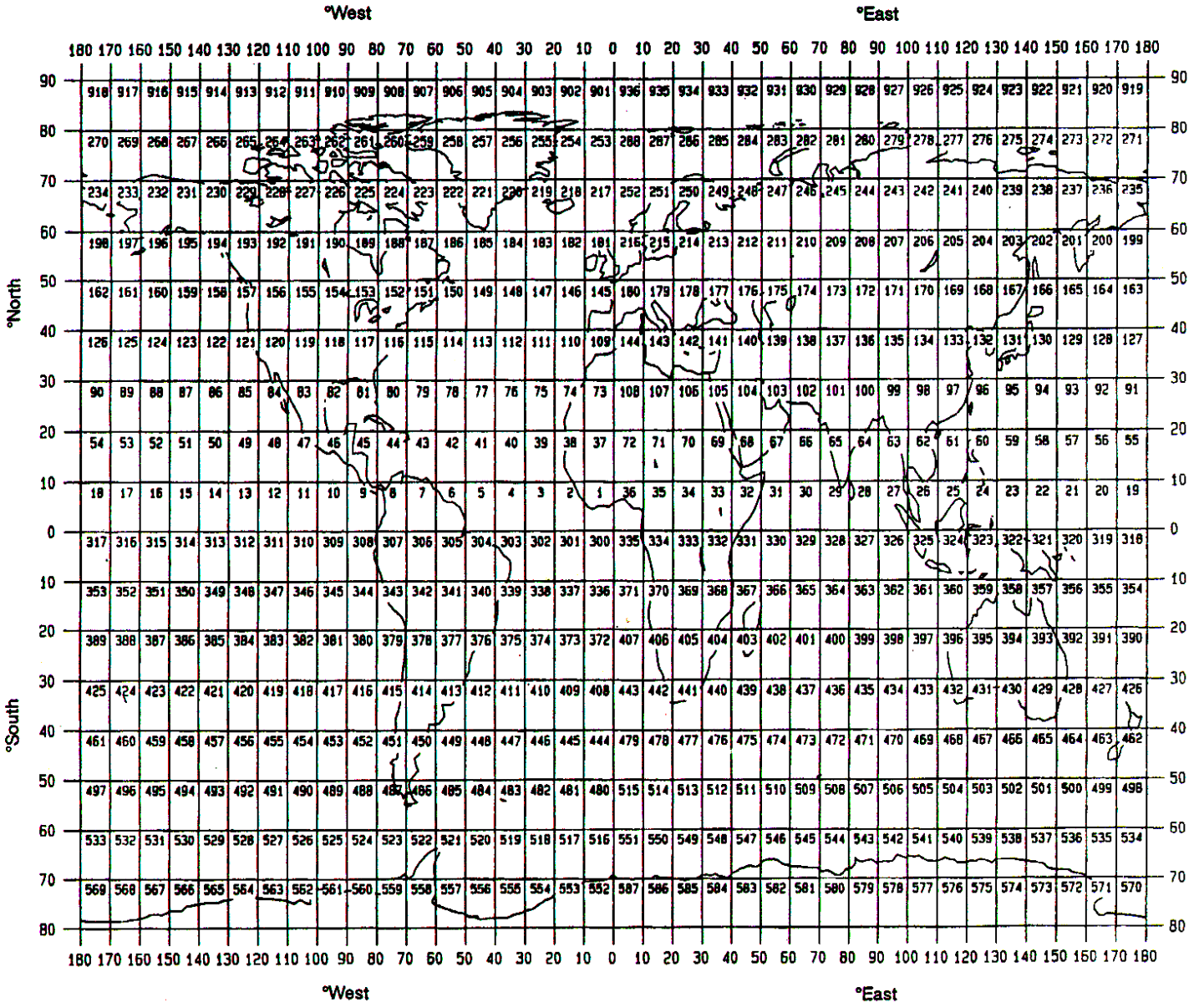
SPECIFIC AREAS

if the cruise activities were concentrated in a specific area(s) of an ocean or sea, then enter a description of the area(s). Such description may include references to local geographic areas, to sea floor features, or to geographic coordinates.

Please insert here the number of each square in which data were collected from the below given chart **179**

The Bonifacio Mouths are a strait between Sardinia (Cape Testa and Punta Falcone) and Corsica (Cape Pertusato) of high environmental value for the outstanding importance to the landscape and the wide variety of habitats.
For the legal status of International Strait, every year it is crossed by thousands of ships, particularly ships carrying dangerous or polluting materials such as oil tankers, chemical tankers and gas carriers, many of which are now obsolete or not with the double hull or equivalent technology. The strong winds from the west and northwest, for the *Venturi* effect, increase their intensity when channeled through the Strait, greatly and influence the weather and sea conditions and therefore the shipping through the Strait. Navigation is also complicated by the complex morphology of jagged coastline, from the existing shallow waters, the presence of islands of the Archipelago of La Maddalena (Sardinia) and of Lavezzi and Cavallo (Corsica) and the numerous shoals and reefs. These factors make the Strait of Bonifacio Strait "highly vulnerable", with a high risk of marine pollution by oil and toxic-emissions. The Strait is included in the plan area of international cooperation Franco-Italian-Monegasque RAMOGEPOL designating the competent authorities to coordinate the joint action of the three countries in the event of accidental pollution in the area RAMOGE (set up following the birth of the *RAMOGE Agreement*); as a function of their high vulnerability of the Strait of Bonifacio was chosen in 2007 as a scenario for the annual exercise and meetings between the authorities of the three countries.

GEOGRAPHIC COVERAGE - INSERT 'X' IN EACH SQUARE IN WHICH DATA WERE COLLECTED



PARAMETER CODES

METEOROLOGY

M01	Upper air observations
M02	Incident radiation
M05	Occasional standard measurements
M06	Routine standard measurements
M71	Atmospheric chemistry
M90	Other meteorological measurements

PHYSICAL OCEANOGRAPHY

H71	Surface measurements underway (T,S)
H13	Bathythermograph
H09	Water bottle stations
H10	CTD stations
H11	Subsurface measurements underway (T,S)
H72	Thermistor chain
H16	Transparency (eg transmissometer)
H17	Optics (eg underwater light levels)
H73	Geochemical tracers (eg freons)
D01	Current meters
D71	Current profiler (eg ADCP)
D03	Currents measured from ship drift
D04	GEK
D05	Surface drifters/drifting buoys
D06	Neutrally buoyant floats
D09	Sea level (incl. Bottom pressure & inverted echosounder)
D72	Instrumented wave measurements
D90	Other physical oceanographic measurements

CHEMICAL OCEANOGRAPHY

H21	Oxygen
H74	Carbon dioxide
H33	Other dissolved gases
H22	Phosphate
H23	Total - P
H24	Nitrate
H25	Nitrite
H75	Total - N
H76	Ammonia
H26	Silicate
H27	Alkalinity
H28	PH
H30	Trace elements
H31	Radioactivity
H32	Isotopes
H90	Other chemical oceanographic measurements

MARINE CONTAMINANTS/POLLUTION

P01	Suspended matter
P02	Trace metals
P03	Petroleum residues
P04	Chlorinated hydrocarbons
P05	Other dissolved substances
P12	Bottom deposits
P13	Contaminants in organisms
P90	Other contaminant measurements

MARINE BIOLOGY/FISHERIES

B01	Primary productivity
B02	Phytoplankton pigments (eg chlorophyll, fluorescence)
B71	Particulate organic matter (inc POC, PON)
B06	Dissolved organic matter (inc DOC)
B72	Biochemical measurements (eg lipids, amino acids)
B73	Sediment traps
B08	Phytoplankton
B09	Zooplankton
B03	Seston
B10	Neuston
B11	Nekton
B13	Eggs & larvae
B07	Pelagic bacteria/micro-organisms
B16	Benthic bacteria/micro-organisms
B17	Phytobenthos
B18	Zoobenthos
B25	Birds
B26	Mammals & reptiles
B14	Pelagic fish
B19	Demersal fish
B20	Molluscs
B21	Crustaceans
B28	Acoustic reflection on marine organisms
B37	Taggings
B64	Gear research
B65	Exploratory fishing
B90	Other biological/fisheries measurements

MARINE GEOLOGY/GEOPHYSICS

G01	Dredge
G02	Grab
G03	Core - rock
G04	Core - soft bottom
G08	Bottom photography
G71	In-situ seafloor measurement/sampling
G72	Geophysical measurements made at depth
G73	Single-beam echosounding
G74	Multi-beam echosounding
G24	Long/short range side scan sonar
G75	Single channel seismic reflection
G76	Multichannel seismic reflection
G26	Seismic refraction
G27	Gravity measurements
G28	Magnetic measurements
G90	Other geological/geophysical measurements