

## **IBI-ROOS - Existing observations**

### **1 Tide gauges: Sea level (Spain IEO)**

4 tide gauges in Santander, Coruña, Vigo and Cádiz and 3 in the Canary Island operating since 1940. Near real-time  
Mareógrafos, IEO, Spain  
[www.ieo.es/indamar/mareas/mareas.htm](http://www.ieo.es/indamar/mareas/mareas.htm)

### **2 Tide gauges: Sea level (Spain PDE)**

9 tide gauges in the Iberian peninsula (IBI area), plus 9 in the Canary Islands.  
10 of these are in operation since 1992  
1 min/5min real time  
Puertos del Estado,  
Spain  
[http://www.puertos.es/en/oceanografia\\_y\\_meteorologia/index.html](http://www.puertos.es/en/oceanografia_y_meteorologia/index.html)

### **3 Tide gauges: Sea level (Portugal)**

13 stations on continental coast, 5 in the Azores archipelago and 2 in Madeira  
Hydrographic Institute (IH)

### **4 Tide gauges: Sea level (France)**

17 tides gauges are installed from Dunkerque to St Jean de Luz.  
Ifremer is planning to operate real-time diffusion  
7 stations switched to real time of which 5 in the IBI region(Brest, Le Conquet, Le Havre, Cherbourg, Saint Nazaire)  
SONEL/RONIM, SHOM,  
France  
[http://www.shom.fr/fr\\_page/fr\\_act\\_oceano/maree/maree14.htm](http://www.shom.fr/fr_page/fr_act_oceano/maree/maree14.htm)  
<http://www.sonel.org/english/index.htm>

### **5 Tide gauges: Sea level (Ireland)**

5 tide gauges around Ireland Marine Informatics, Marine Institute  
[www.irishtides.com/](http://www.irishtides.com/)

### **6 GLOSS stations (Ireland)**

Once every 5 minutes Department of Communications, Marine and Natural Resources  
[www.dcmnr.ie](http://www.dcmnr.ie)

### **7 Fixed structures: Ocean & meteorological**

ADCP, tide gauges, T profile and meteo at 6 locations in the Basque country. Real-time  
Ocean-Meteorological stations  
Basque Meteorological Agency – Euskalmet and AZTI-Tecnalia, Spain.  
<http://www.euskalmet.euskadi.net/s07-5853x/es/meteorologia/selest.apl?e=5>

### **7b Fixed structures: Meteorological data**

23 coastal meteorological stations  
15 automatic stations at coast  
National Meteorological  
Stations Network, IM, Portugal

### **7c Meteorological Automatic Stations: Air Temperature,**

Preassure, Wind, Humidity,  
Precipitation and Sun  
Radiation  
Galicia (NW Spain), each 10 min since 2000. MeteoGalicia, Conselleria de Medio Ambiente, Xunta de Galicia, Spain.  
[www.meteogalicia.es](http://www.meteogalicia.es)

### **7d Coastal Meteorological Stations**

6 stations; Dublin Rosslare Valentia, Malin, Roches point, Bellmullet hourly data  
Met Eireann  
[www.met.ie](http://www.met.ie)

### **8b Fixed Buoys and Stations at Galician Rias,**

Air Temperature, Humidity, winds, ADCP and CTD. At Arousa and Vigo Galicia (NW Spain), each 10 min since 2008. INTECMAR & MeteoGalicia, Xunta de Galicia, Spain.  
[www.intecmar.org](http://www.intecmar.org)  
[www.meteogalicia.es](http://www.meteogalicia.es)

### **9 Automatic buoys: Waves, current & met**

11 wave coastal buoys (3 of them with SST) and 8 buoys with meteorological, waves, currents and oceanographic data in deep waters.  
Operating since 1996. Real-time hourly transmission.  
Puertos del Estado, Spain  
[http://www.puertos.es/en/oceanografia\\_y\\_meteorologia/index.html](http://www.puertos.es/en/oceanografia_y_meteorologia/index.html)

### **9b Automatic buoys: Meteorological, Waves, TS & current profiles**

2 buoys at 500 m water depth in the Basque Country  
Operating since 2007. Real-time  
Basque Meteorological Agency – Euskalmet  
<http://www.euskalmet.euskadi.net/> (data available in summer)

### **9c. Automatic buoys: Meteorological, Waves, TS & current profiles**

1 buoy at deep water (2850m) of the Southern Bay of Biscay operating since June 2007.  
Real-time hourly transmission.  
Instituto Español de Oceanografía. Spain.  
[www.ieo.es](http://www.ieo.es)

### **10 Automatic buoys: Waves**

19 buoys from Dunkerque to Bayonne. One buoy added in Iroise sea (Pierre Noire)  
Real-time Candhis, CETMEF, France  
<http://www.CETMEF.equipement.gouv.fr/donnees/candhis/>

### **11 Automatic buoys: Waves,**

5 ODAS buoys.  
Real-time Marine Institute  
[www.marine.ie/databuoy](http://www.marine.ie/databuoy)

### **11b Automatic Buoys: Waves**

3 Stations in Portugal  
2 Stations in Madeira islands  
4 stations in Azores Islands  
Operated by IH, APRAM (Madeira Harbour Authority) and University of Azores  
[www.hidrografico.pt](http://www.hidrografico.pt)

### **12 Temperature and Conductivity**

5 ODAS Buoys non real-time (once every 30 minutes)  
Marine Institute  
[www.marine.ie/databuoy](http://www.marine.ie/databuoy)

### **13 Automatic buoys: Meteo data, waves**

3 buoys Gascogne, Brittany and Ouessant operated by Meteo France and UKMO  
Meteorological programme  
[www.ndbc.noaa.gov/Maps/France.shtml](http://www.ndbc.noaa.gov/Maps/France.shtml)

### **14 Automatic buoys and Ships of opportunity: Meteorological data**

Buoy data from GTS and ships of opportunity  
IM, Portugal

### **15 Automatic buoys Meteorological**

5 ODAS buoys. Real-time Marine Institute

[www.marine.ie/databuoy](http://www.marine.ie/databuoy)

**16 Moorings: Currentmeters,**

ADCP and sediments  
2 arrays in Nazaré Canyon area  
1 CORSED platform in Nazaré Canyon area  
EUROSTRATAFORM, IH,  
Portugal  
MOCASSIM, IH, Portugal

**17 Moorings: Currentmeters**

1 mooring off Cascais (adjacent zone to Tejo river) SIGAP, IPIMAR's fixed station for long-term physical, biological measurements, Portugal

**17b Moorings: Currentmeters**

2 mooring, on in the Finisterre Section (43°N, 11°W) and in Santander Section (43° 48'N, 3° 45'W). Current meters at the core of NACW, MW and LSW. Moored since 2004.  
fixed station for long-term physical measurements,  
Instituto Español de Oceanografía  
[www. vaclan-ieo.es](http://www.vaclan-ieo.es)

**18 Ships of opportunity: FerryBox, hydrological parameters**

Line Portsmouth-Bilbao, Real-time, weekly, NOC at Southampton, UK  
[www.soc.soton.ac.uk/ops/ferrybox\\_index.php](http://www.soc.soton.ac.uk/ops/ferrybox_index.php)

**19 Ships of opportunity: Plankton CPR**

IB and SB lines,  
Monthly, since 1958 CPR project,  
SAHFOS and IPIMAR, UK and Portugal

**19b Ship of opportunity: fishing boat RECOPECA**

Monitoring fishing effort programme  
Deployment of low cost sensors attached to fishing gears.  
30 ships equipped of which around 15 in the IBI region. Progressive extention underway.

**20 Underway Data from Irish Research Vessels Surface**

Temperature, Conductivity, Fluorescence  
Every 10sec along ship track during survey. Typically Irish waters  
Marine Institute

**20b Underway Data from Spanish Research Vessels Surface**

Temperature, Conductivity, Fluorescence  
Every 10sec along ship track during survey. Typically Spanish and Atlantic waters.  
Daily send to Coriolis Data Center and IEO web.  
<http://indamar.ieo.es/>

**21 Satellite remote sensing: Temperature**

The whole area is covered every day AVHRR-NOAA, AZTI Tecnalia and IEO, Spain  
[www.teledeteccion-oceanografica-ieo.net](http://www.teledeteccion-oceanografica-ieo.net)

**22 Satellite remote sensing: Ocean colour**

The whole area is covered every day SeaWIFS, AZTI Tecnalia, Spain

**23 Satellite remote sensing: scatterometer**

The whole area is covered every day (QUICKSCAT), AZTI Tecnalia, Spain

**24 Satellite remote sensing: altimetry (sea level)**

The same region is covered every week Jason1, GFO, ENVISAT, AZTI Tecnalia, Spain

**25 Satellite remote sensing: Radar**

The same region is covered every 10 days SAR/ ESA, IFREMER, France  
[www.ifremer.fr/cersat/en/data/gridded.htm](http://www.ifremer.fr/cersat/en/data/gridded.htm)

#### **26 Satellite remote sensing: Topography**

The same region is covered every 10 days Feng Yun, AZTI Tecnalia, Spain

#### **27 Satellite remote sensing: Monitoring of SST, Chlorophyll using Ocean Colour**

Image browser covering Bay of Biscay since 1985 IFREMER, CLS, France  
Login: gascogne  
Password: gascogne  
[www.ifremer.fr/cersat/facilities/browse/del/gascogne/browse.htm](http://www.ifremer.fr/cersat/facilities/browse/del/gascogne/browse.htm)

#### **28 Satellite remote sensing: Monitoring of SST, Chlorophyll and inorganic suspended matter using Ocean Colour**

Image browser covering the English Channel since 1985  
IFREMER, CLS, France  
[www.ifremer.fr/cersat/facilities/browse/del/roses/browse.htm](http://www.ifremer.fr/cersat/facilities/browse/del/roses/browse.htm)

#### **29 Satellite remote sensing: Temperature and Ocean colour**

The whole area is covered every day AVHRR-NOAA and SeaWiFS OrbView2,  
DOP-Univ. Açores, Portugal  
AVHRR-NOAA and SeaWiFS OrbView2,  
CEM-Univ. Madeira, Portugal  
AVHRR-NOAA, IO-Univ.  
Lisboa, Portugal

#### **30 Satellite remote sensing: Temperature**

The whole area is covered every day AVHRR-NOAA and Meteosat, IM, Portugal

#### **31 Profilers (lagrangian) : Temperature & Salinity**

~10 drifting buoys, 14 days CORIOLIS-ARGO, IFREMER, IEO, France & Spain  
[www.coriolis.eu.org/cdc/default.htm](http://www.coriolis.eu.org/cdc/default.htm)

#### **32 Profilers**

2 Argo floats Operational since Feb 2004 Martin Ryan Institute, National University of Ireland Galway  
[www.nuigalway.ie/eos](http://www.nuigalway.ie/eos)

#### **32a Profilers**

4 Argo floats Operational since March 2008 Marine Institute, Galway  
[www.marine.ie](http://www.marine.ie)

#### **32b Profilers**

12 new Argo floats (part for the IBIROOS area) to be deployed from 2008.  
At least one with O2 probe. to be deployed in Sep 2009 in the Bay of Biscay.  
Instituto Español de Oceanografía

#### **33 River discharge (France)**

National flood prevention service Ministry of environment, SHAPI  
[www.ecologie.gouv.fr/article.php3?id\\_article=119#](http://www.ecologie.gouv.fr/article.php3?id_article=119#)

#### **34 River Discharge**

Approx 1000. Some are digital and some are analogue  
OPW, ESB, Local Authorities,  
EPA  
[www.opw.ie/www.epa.ie](http://www.opw.ie/www.epa.ie)

#### **35 Fixed automated stations in Gironde estuary**

4 coastal MAREL stations high frequency measurement, real-time transmission: temperature, salinity, DO, turbidity and sea level

IFREMER & Water Agency

<http://www.epoc.u-bordeaux.fr/fr/geotransfert/rogir/index.php?page=accueil>

**36 Fixed automated station in Iroise sea**

MAREL buoy high frequency measurement, real-time  
transmission: temperature, salinity, DO, turbidity,  
fluorescence, pCO<sub>2</sub>

University of Brest,  
IFREMER, France

[www.ifremer.fr/mareliroise/fr/](http://www.ifremer.fr/mareliroise/fr/)

**37 Fixed automated station in Seine estuary (Honfleur) (temporarily out of service)**

MAREL buoy high frequency measurement, real-time  
transmission: temperature, salinity, DO, turbidity, pH

CETMEF, IFREMER, France

[www.ifremer.fr/marel/](http://www.ifremer.fr/marel/)

**38 Fixed automated station in Boulogne/mer**

MAREL buoy high frequency measurement, real-time  
transmission: temperature, salinity, DO, turbidity,  
fluorescence, pCO<sub>2</sub>

City of Boulogne, IFREMER,  
France

[www.ifremer.fr/difMarelCarnot/](http://www.ifremer.fr/difMarelCarnot/)

38a fixed automated station in Bay of Vilaine

MAREL (Molit type buoy) high frequency measurement, real-time  
transmission: temperature, salinity, DO, turbidity, fluorescence, nutrients near sea surface and at sea bottom.  
IFREMER (PREVIMER and TROPHIMATIC projects)

[www.ifremer.fr/difMarelVilaine/](http://www.ifremer.fr/difMarelVilaine/)

**39 Fixed stations and transects: Temperature & Salinity**

Deep waters, 3 transects (Galicia & Cantabrian Sea),  
2/year since 2004

Deep water standard sections,  
IEO, Spain

<http://www.vaclan-ieo.es/>

**40 Fixed stations and transects: Physical & Biological**

Coastal waters, 5 transects (Galicia, Cantabrian  
Sea), monthly since 1988

Radiales, IEO, Spain

[www.seriestemporales-ieo.net](http://www.seriestemporales-ieo.net)

**41 Fixed stations and transects: CTD, Plankton and harmful algae, nutrients and DOC**

Coastal stations, (Galicia), weekly since 1992

INTECMAR, Xunta de  
Galicia, Spain

[www.intecmar.org](http://www.intecmar.org)

**41b Fixed stations: Contaminants and hazardous substances**

Coastal stations, (Galicia), annual or half-yearly since 1995

INTECMAR, Xunta de  
Galicia, Spain

[www.intecmar.org](http://www.intecmar.org)

**41c Fixed stations: Biotoxins**

Coastal stations, (Galicia), minimum weekly and diary if necessary since 1995

INTECMAR, Xunta de  
Galicia, Spain

[www.intecmar.org](http://www.intecmar.org)

**41d Fixed stations: Faecal contamination in marine invertebrates**

Coastal stations, (Galicia), since fortnightly to quarterly since 1995

INTECMAR, Xunta de  
Galicia, Spain

[www.intecmar.org](http://www.intecmar.org)

**41e Fixed stations: Pathology in aquatic organisms**

Coastal stations, (Galicia), yearly and half-yearly since 1998  
INTECMAR, Xunta de Galicia, Spain  
[www.intecmar.org](http://www.intecmar.org)

**42 Fixed stations: Contaminants and hazardous substances**

~30 stations along Spanish coast sampling water, sediments and biota  
Contamination programme, IEO, Spain

**43 National monitoring networks**

RNO/ REPHY/REMI  
50 stations from Dunkerque to St Jean de Luz.  
Hydrological parameters, chemical pollutants in sediment and fish/phytoplankton  
IFREMER, Ministry of Environment, France  
[www.ifremer.fr/envlit/surveillance/index.htm#](http://www.ifremer.fr/envlit/surveillance/index.htm#)

**44 Fixed stations and transects: Harmful algae**

Coastal stations (France) GEOHAB, IFREMER, France

**45 Fixed station: Physical parameters and plankton**

1 Shelf Station (Cascais), monthly, Temperature, Salinity, Chlorophyll *a*, Phyto- and zooplankton communities, copepod egg production.  
1 Coastal station (Cascais), bi-monthly, long-term phytoplankton cysts studies SIGAP and Profit projects, IPIMAR, Portugal Collaboration in the National HAB Watch Network, IO, Portugal

**46 Fixed stations and transects: Plankton and harmful algae**

28 Coastal Stations (all Portuguese coast), weekly, HAB  
National HAB Watch Network, IPIMAR, Portugal

**47 Fixed stations: Contaminants and hazardous substances**

Stations in beaches along the Portuguese coast for water quality analyses. Sampling started 15 days before the bathing season and is made weekly, biweekly or monthly depending of quality conditions.  
Monitoring waste water systems along the Portuguese coast  
Contaminants studies along the Portuguese continental shelf, monthly sampling in the mouths of main rivers  
VivaPraia Programme, INAG and IA, Portugal  
National Programme for Water Supply and Sanitation Monitoring, Águas de Portugal e Associated Co., Portugal  
Contamination of the Coastal Zone Programme, IPIMAR, Portugal

**48 CTD section along 53 deg N on western Irish Shelf**

Annually (summer) since 1999 Marine Institute

**49 Nutrient Monitoring Programme**

Irish and Celtic Sea Annually  
Marine Institute  
[www.marine.ie](http://www.marine.ie)

**50 Phytoplankton monitoring**

Weekly during the summer at 60 sites Marine Institute [www.marine.ie/HABSdatabase](http://www.marine.ie/HABSdatabase)

**51 Shellfish Toxins Monitoring Programme**

Weekly during the summer at 60 sites Marine Institute  
[www.marine.ie/HABSdatabase](http://www.marine.ie/HABSdatabase)

**52 Radionucleids**

6 offshore stations seawater samples annually,  
5 coastal stations seawater samples quarterly  
13 locations where fish species are routinely  
monitored  
RPII  
[www.rpii.ie](http://www.rpii.ie)

**53 Regular research vessel cruises: Physical & Biological,**

including Fish stocks using acoustic methodologies  
Continental shelf of Spanish North Atlantic and Bay of Biscay waters,  
Spring surveys since 1988 ICES Pelagic fisheries, IEO,  
Spain

**54 Regular research vessel cruises: Physical & Biological,**

including Fish stocks using bottom trawl  
Continental shelf of Spanish North Atlantic and Bay of Biscay waters,  
Autumn surveys since 1982  
ICES Demersal fisheries, IEO,  
Spain

**55 Regular research vessel cruises: Physical & Biological,**

including Fish stocks  
(Anchovy)  
Continental shelf of inner Bay of Biscay from  
Santander to Nantes, Spring  
Anchovy evaluation, AZTI  
Tecnalia, Spain

**55b Regular research vessel cruises: Physical & Biological,**

including Fish stocks using eggs and larvae methodologies  
Continental shelf of Spanish North Atlantic waters and Spanish  
and French Bay of Biscay waters, spring surveys.  
Sardine, mackerel Egg Tri-yearly IEO,  
Spain

**56 Annual cruises ICES Fisheries monitoring, IFREMER, France**

**57 Regular research cruises: Physical & Biological,**

including Fish stocks using  
acoustic methodologies  
Continental shelf of Portuguese Mainland waters,  
Spring and Autumn surveys since 1984  
ICES Pelagic fisheries,  
IPIMAR, Portugal

**58 Regular research vessel cruises: Physical & Biological,**

including Fish stocks using  
bottom trawl  
Continental shelf and slope of Portuguese Mainland  
waters, Spring and Autumn surveys since 1979  
ICES Demersal fisheries,  
IPIMAR, Portugal

**59 Fisheries Cruises; Herring**

Acoustic, Blue Whiting,  
Groundfish, Nephrops  
Yearly Marine Institute  
[www.marine.ie](http://www.marine.ie)

**60 Mackerel Egg Tri-yearly Marine Institute**

[www.marine.ie](http://www.marine.ie)

**61 HF Radar network: Iroise sea**

SHOM

Waves and surface current [http://www.shom.fr/fr\\_page/fr\\_act\\_oceano/vagues/VIGICOTE/temps\\_reel\\_f.html](http://www.shom.fr/fr_page/fr_act_oceano/vagues/VIGICOTE/temps_reel_f.html)

**61b HF Radar experience in Sines**

IH

Waves and surface currents

[www.hidrografico.pt](http://www.hidrografico.pt)

**61c HF Radar network**

Basque Country (Cantabrian Sea).

Real-time transmission.

Basque Meteorological Agency - Euskalmet, Spain.

<http://www.euskalmet.euskadi.net/> (data available in summer)

**62 Coastal Video Monitoring**

Waves and morphodynamics

1 station in Mundaka, Urdaibai estuary, Real Time

AZTI-Tecnalia, SPAIN

[www.kostasystem.com](http://www.kostasystem.com)