



# Marine Environment Monitoring Service



**T**he Copernicus Marine Environment Monitoring Service is part of the Copernicus Programme, which is an EU Programme managed by the European Commission (EC) and implemented in partnership with the Member States, the European Space Agency (ESA), the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT), the European Centre for medium-range Weather Forecasts (ECMWF), EU Agencies and Mercator Océan. The Programme is aimed at developing a set of European information services based on satellite Earth Observation and in-situ (non-space) data.

- related EU policies, e.g. in the fields of:
- Marine safety;
  - Marine and coastal environment;
  - Marine resources;
  - Weather, seasonal forecasting and climate.

Mercator Ocean, the French centre for global ocean analysis and forecast has been entrusted by the EC to implement and operate the service.

## What does the Copernicus Marine Environment Monitoring Service do?

This unique service worldwide offers all

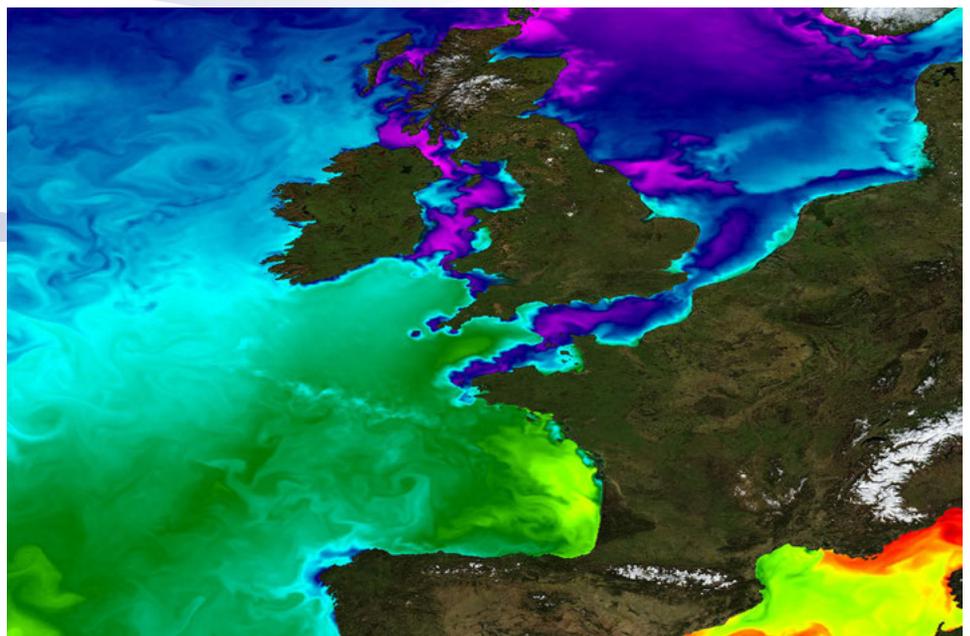
comers, freely and openly, simply and instantaneously, information on the physical and biogeochemical state of the global ocean and the six regional seas in Europe. These digital data are scientifically qualified and regularly updated.

Typical products provided by the service are:

- Maps and data for oceanographic forecasts;
- Retrospective assessments of the sea state for R&D or operational purposes;
- Simulations Ocean physical state (for drift calculations, routing, input for scenarios, site survey ...);
- Boundary conditions for coastal models.

## What is the Copernicus Marine Environment Monitoring Service?

The Copernicus Marine Environment Monitoring Service provides regular and systematic information about the physical state and dynamics of the ocean and marine ecosystems for the global ocean and the European regional seas. This data covers analysis of the current situation, forecasts of the situation a few days in advance and the provision of retrospective data records (re-analysis). The Copernicus Marine Environment Monitoring Service calculates and provides products describing currents, temperature, wind, salinity, sea level, sea ice and biogeochemistry. These factors support marine and maritime applications and



Implemented by:



Space



Some examples:

### Offshore activities

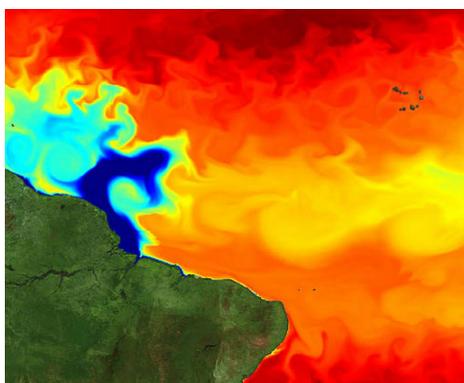
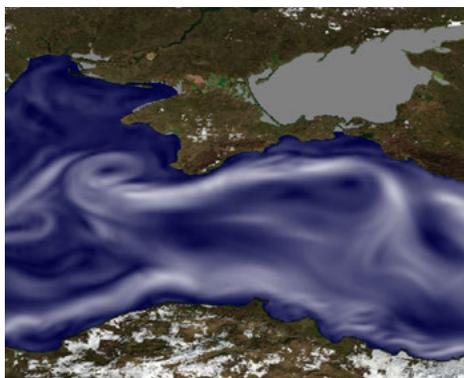
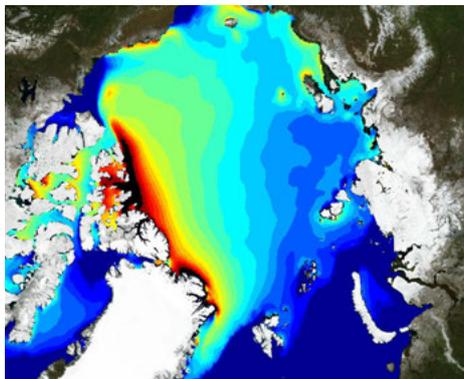
The Copernicus Marine Environment Monitoring Service collects and offers observational data (currents, sea level, sea surface temperature, sea ice and sea surface wind ...) and produces real time and forecast information used by ship routing services, search and rescue operations, oil spill combat services, offshore platforms, renewable energy solutions...

### Coastal and water management

The Copernicus Marine Environment Monitoring Service assimilates marine data into 3D models. Forecast, real time or long time series are useful for instance to generate boundary conditions for small-scale hydrodynamics for coastal zone management, to monitor eutrophication and more generally to contribute to the EU Integrated Maritime Policy (Marine Strategy Framework Directive, Blue Growth, and Maritime Spatial Planning...).

### Understanding weather and climate change

Many of the data delivered by the service in particular long series in the past (e.g. temperature, salinity, currents, sea ice) play a crucial role in the domain of weather, climate and seasonal forecasting. Sea ice or pack ice is saline sea water, unlike icebergs which are made up of fresh water from continental glaciers.



Images © Mercator, CMEMS

By monitoring the evolution of sea ice in the Arctic and Antarctic, the service provides a major indicator for studying global warming.

### What is the added value of the Copernicus Marine Environment Monitoring Service?

- The Service provides a single point of access to a unique catalogue of a large variety of marine data and information;
- The scientifically assessed products use international metrics and are described in quality information documents;
- Freely available high quality data opens new possibilities for service and projects developments in the marine/maritime fields to the benefit of the Private and Public sectors and to Science.

### The Copernicus data policy promotes the access, use and sharing of Copernicus information and data on a full, free and open basis.

There is no restriction on use or reproduction and redistribution, with or without adaptation, for commercial or non-commercial purposes. This data policy applies to the data and information generated within the Copernicus programme, i.e., Sentinel mission data and Copernicus service information.

### More information

Users can find out more about the products delivered by the Copernicus Marine Environment Monitoring Service at: [marine.copernicus.eu](http://marine.copernicus.eu)