

COPERNICUS MARINE 8th GENERAL ASSEMBLY

- **CONNECT**
Local coastal monitoring
service for Portugal



PROGRAMME OF
THE EUROPEAN UNION



Copernicus
Marine Service

implemented by



MERCATOR
OCEAN
INTERNATIONAL



Copernicus
Marine Service



- **Project in a nutshell**



FORECASTS



IN-SITU OBSERVATIONS



SATELLITE



CONNECT delivers a local, high-resolution, coastal monitoring service that seamlessly integrates model-based forecasts and observations to provide blue (physical) and green (biogeochemical) data on Portuguese estuaries to CMEMS

Use Cases

- Support the evaluation of the ecological status of estuaries (WFD)
- Quantify land inputs to the adjacent coastal waters (MSFD)
- Anticipate inundation events (Floods Directive)





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● Consortium

Partners



Model forecasts, coordinates the UBEST coastal observatory and the WIFF and OPENCoastS forecast services



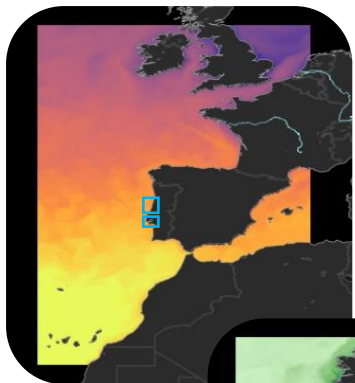
Near real time *in-situ* observations, coordinates the CoastNet Research Infrastructure



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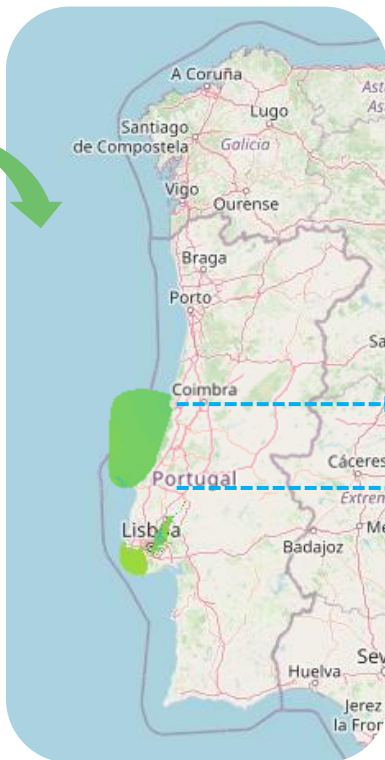
The background features a large, stylized wave in shades of blue and green, with a prominent green diagonal stripe running from the top left towards the bottom right. A thin green horizontal line with a circular dot at its end points from the left towards the text.

Copernicus Marine Products and Coastal model



IBI Physics
IBI Biogeochemistry

Downscaling

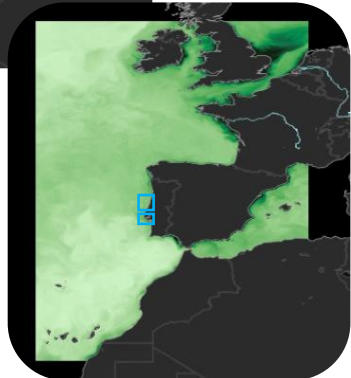


Mondego estuary

Horizontal resolution:
5-5000m

Vertical grid:
25 SZ levels

Horizontal
resolution:
 $1/36^\circ$
Vertical grid:
50 levels



Tagus estuary

Horizontal resolution:
3/5-1600m

Vertical levels:
39 SZ levels





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● **Seamless coastal
service**

CONNECT coastal service



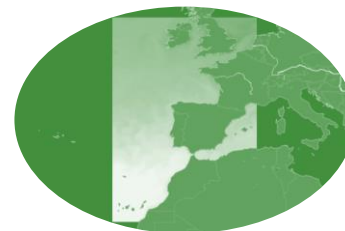
High-resolution operational modelling of estuarine - coastal circulation and water quality, forced by CMEMS regional models



Near-real time *in-situ* data acquisition and Earth-observation data

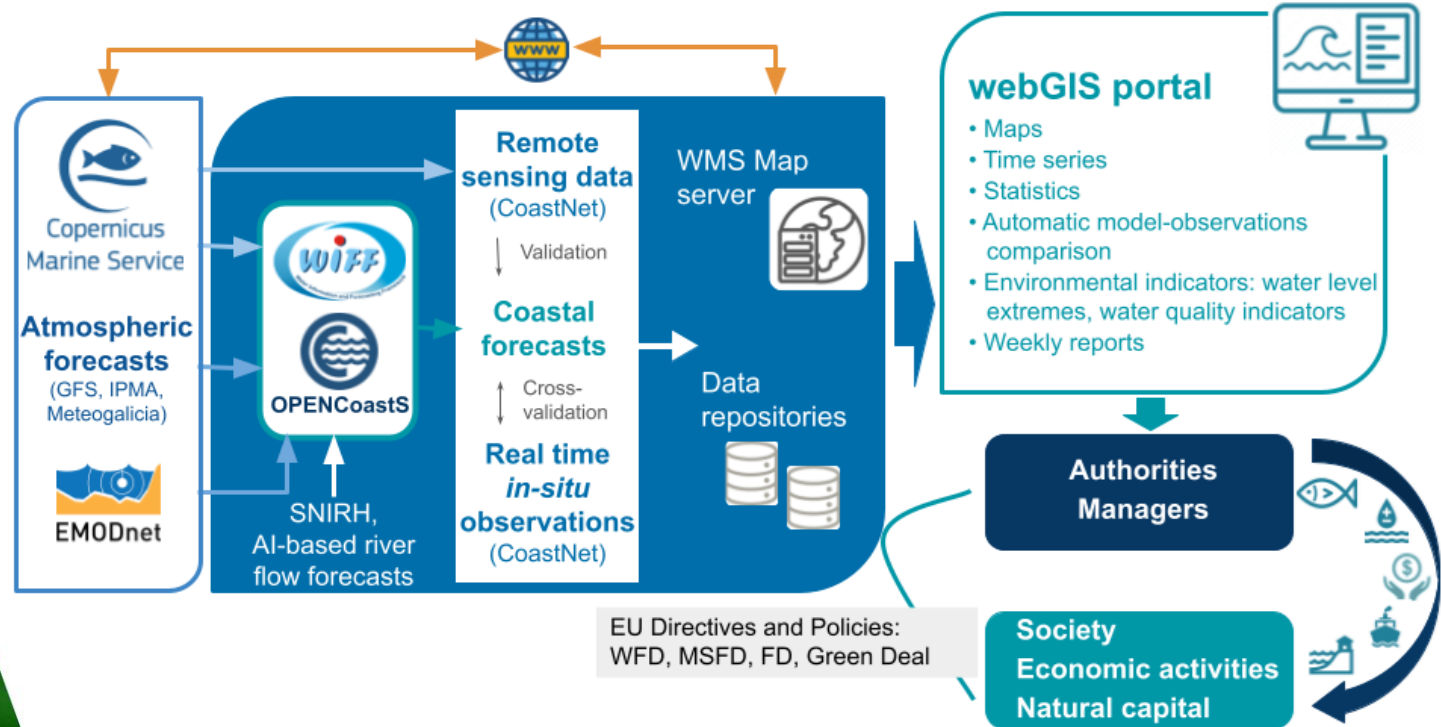


WebGIS portal to access physical and biogeochemical 2-day forecasts and observations

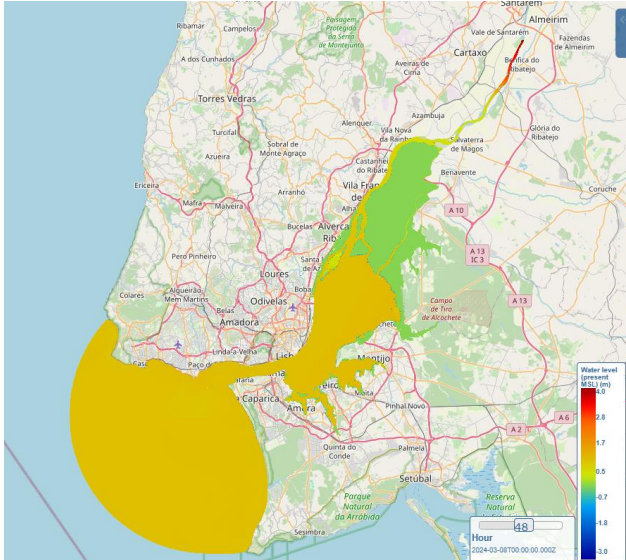


Seamless integration with CMEMS

CONNECT coastal service

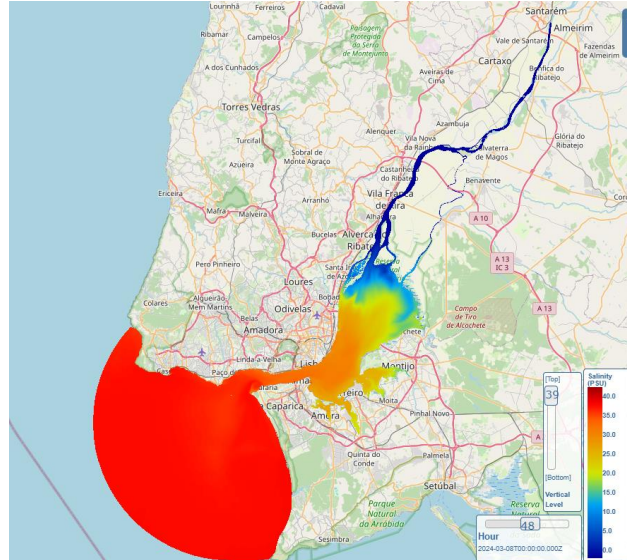


Inundation: 2D barotropic model, waves-currents interaction



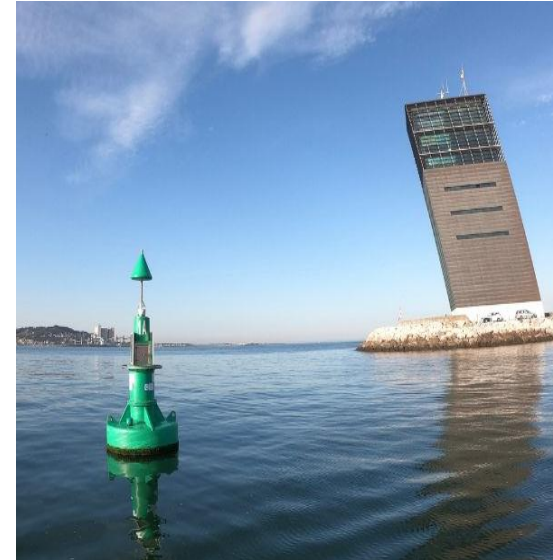
Water levels, Velocity,
Waves (Significant wave height,
Mean period, Direction)

Water quality: 3D baroclinic model, coupled circulation-biogeochemistry



Water levels, Velocity, Salinity,
Temperature, Ammonium, Nitrate,
Phosphate, Silicate,
Dissolved oxygen, Chlorophyll-a

In-situ observation network

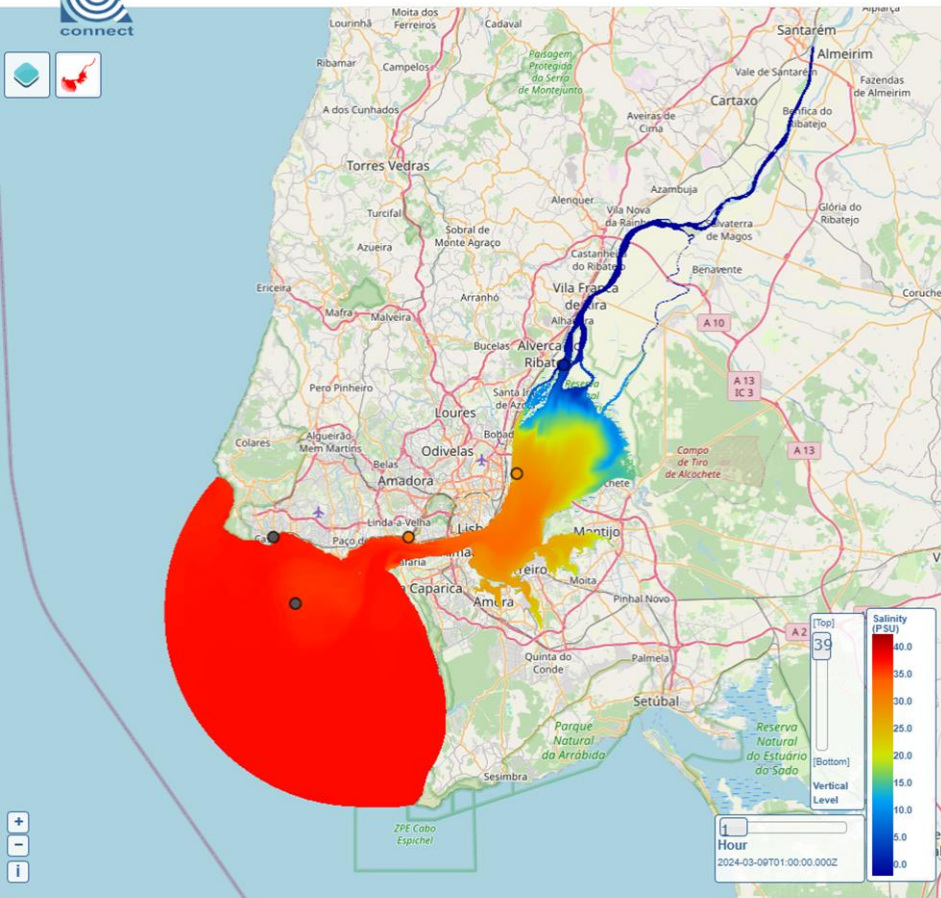


Salinity, Temperature,
pH, Dissolved oxygen,
Chlorophyll-a, Turbidity

Co-design with users

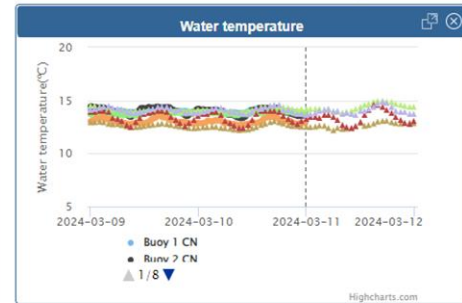
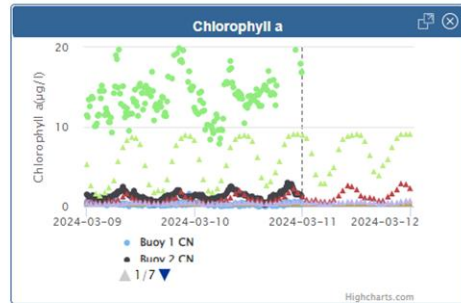
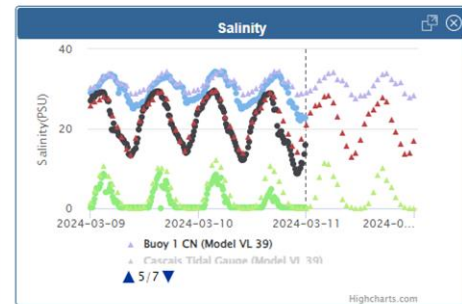
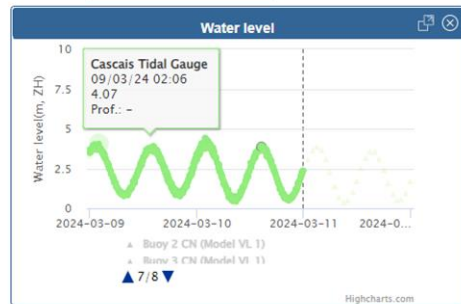
- Address user's requirements and feedback on the coastal service
- Dedicated actions with users





Today

Tagus Estuary (3D)



<https://connect-portal.inec.pt>

Acknowledgements



Copernicus Marine Service User Engagement Programme 2022-2028



More info here:
connect.inec.pt

Thank you for your attention!
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