



TOWARDS AN OPERATIONAL HYDRODYNAMICS AND BIOGEOCHEMICAL MODEL OF THE TAGUS ESTUARY

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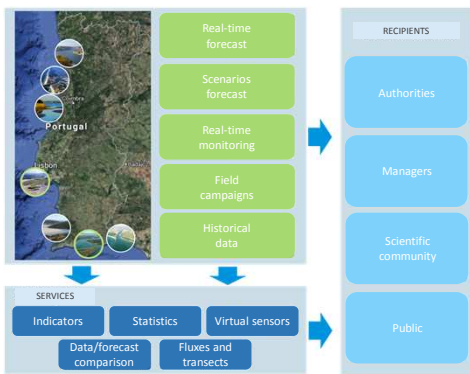
Motivation

Water observatories support both the daily and long-term management of coastal systems, by allowing the:

- continuous surveillance of coastal zones;
- anticipation of events of contamination;
- tuning of management plans.

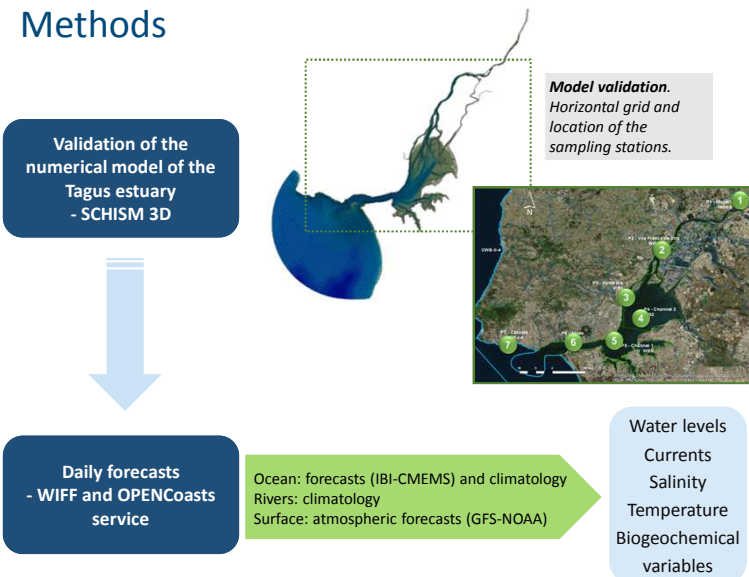
In project UBEST we demonstrate the use of water observatories to understand the biogeochemical buffering capacity of the Tagus estuary and of the Ria Formosa relative to climate change and anthropogenic pressures.

This study describes the implementation of the operational hydrodynamics and biogeochemical model of the Tagus estuary (Portugal), as part of the Tagus estuary water observatory.



Water observatory. Comprehensive web-portals that integrate historical and real-time observations, forecasts, scenarios analysis and indicators.

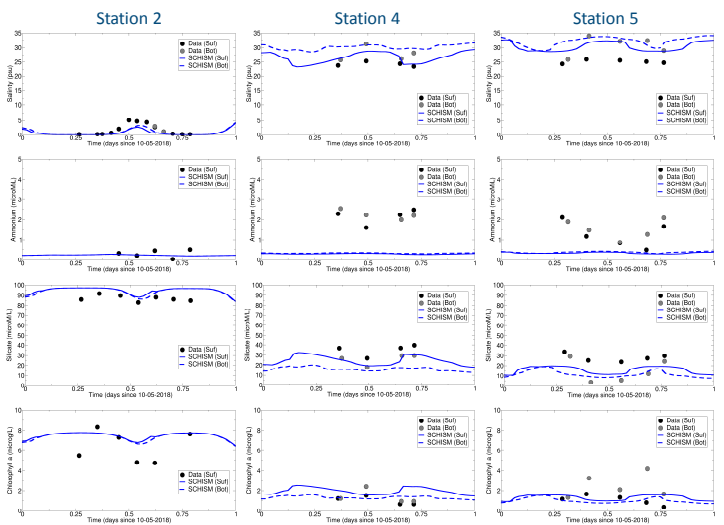
Methods



Model validation

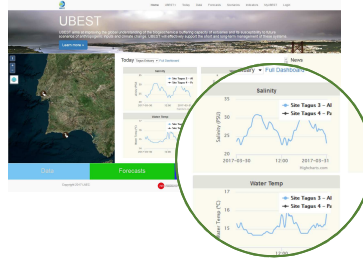
The model represents the main spatial and temporal patterns of salinity, temperature, nutrients, chlorophyll *a* and dissolved oxygen observed in the Tagus estuary.

The main differences arise from uncertainties in the boundaries conditions and the existence of other point sources that were not considered in the model.

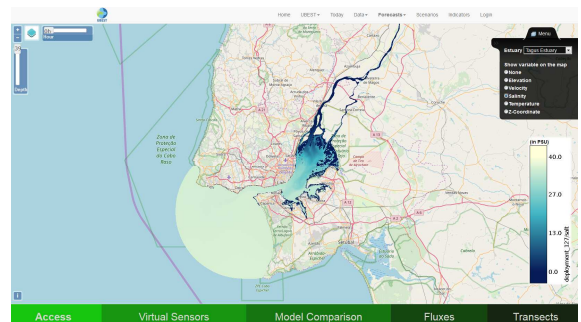


Data-model comparison for May 2018. Example of model results for salinity, ammonium, silicate and chlorophyll *a*.

UBEST Web platform



UBEST Web platform. Home page for access to Data, Forecasts, Scenarios and Indicators dashboards.



Forecasts. Access to daily forecasts of water levels and 3D currents, salinity, temperature and biogeochemical variables.

Acknowledgments

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