COASTNET

COASTAL MONITORING NETWORK

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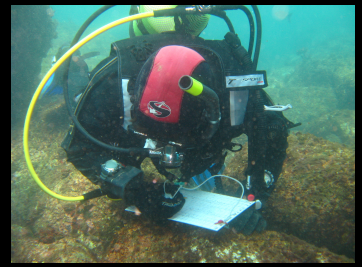
COASTNET
COASTAL MONITORING NETWORK

Included in the National Roadmap of Strategic Interest Research Infrastructures (RNIE) in the Environmental Sciences panel.

CoastNet is a research infrastructure on the functioning of coastal ecosystems

Main Goals:

- Obtain remote and local observations of the Portuguese coast;
- Integrate and permit visualization of obtained data;
- Allow free access to near real-time (and historical) data.



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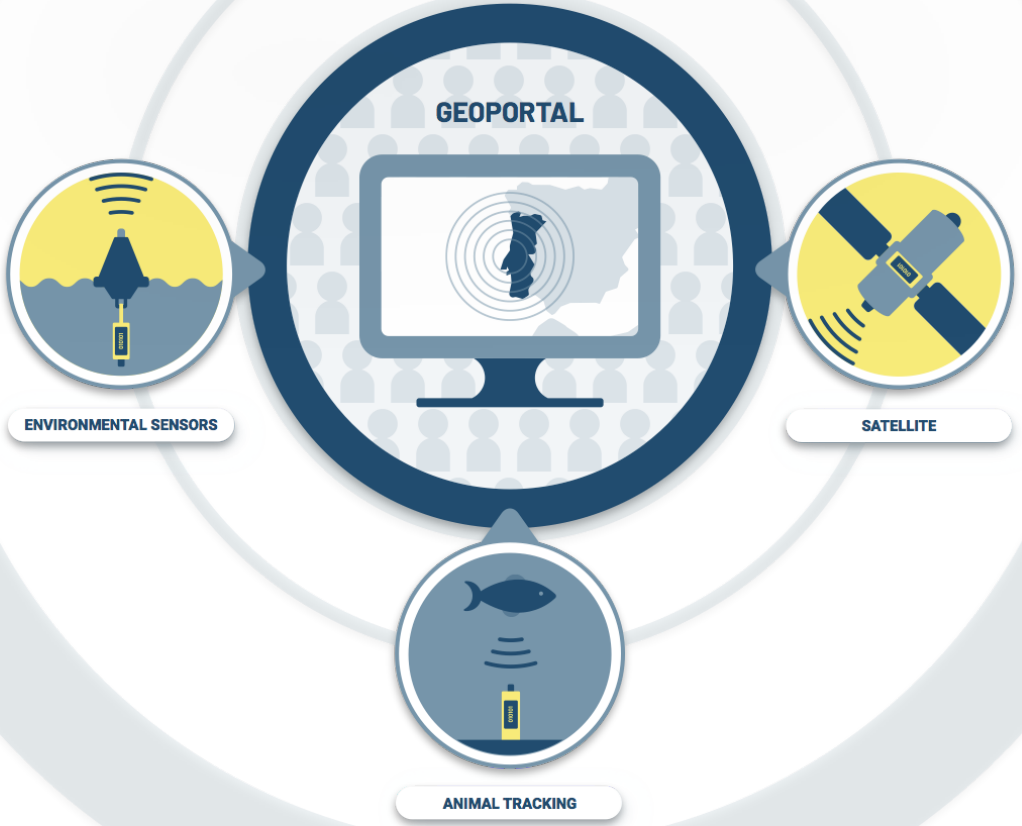
Connecting people and environment

Data Integration and Open Access

CoastNet is structured in 4 action lines



www.coastnet.pt • coastnet@mare-centre.pt

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COASTAL REMOTE SENSING SYSTEM

1.
Coastal Remote Sensing System

- **Satellite data processing center;**
- **Aims to provide sea-surface temperature (SST), chlorophyll a and other non-standard ocean color derived regional products, based on data obtained from NASA and ESA, and processed at MARE.**

Near Real Time:

- Bioptical Properties
- Ocean Colour
- Sea Level
- Sea Surface Temperature
- Surface Velocity
- Wind Speed
- Wind Stress

Time Series:

- Sea Surface Salinity

THE REGIONAL PRODUCTS

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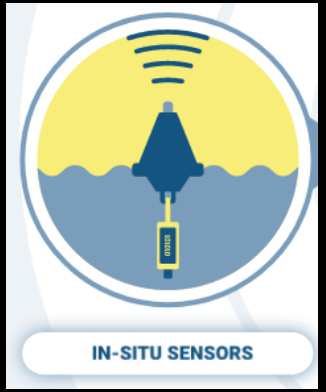
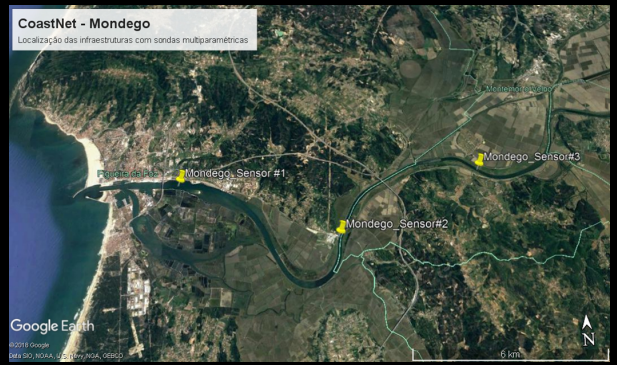
ENVIRONMENTAL AND BIOLOGICAL MONITORING SYSTEM

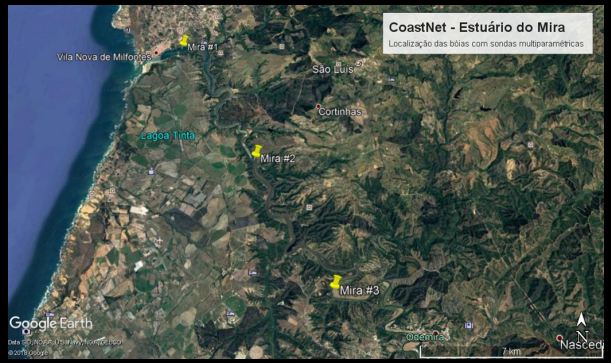
2.

Environmental and Biological Monitoring System

- **Real-time measurements of environmental and biological variables;**
- **Salinity, temperature, dissolved oxygen, chlorophyll a;**
- **3 estuaries (for now);**
- **Include the estuarine gradient.**







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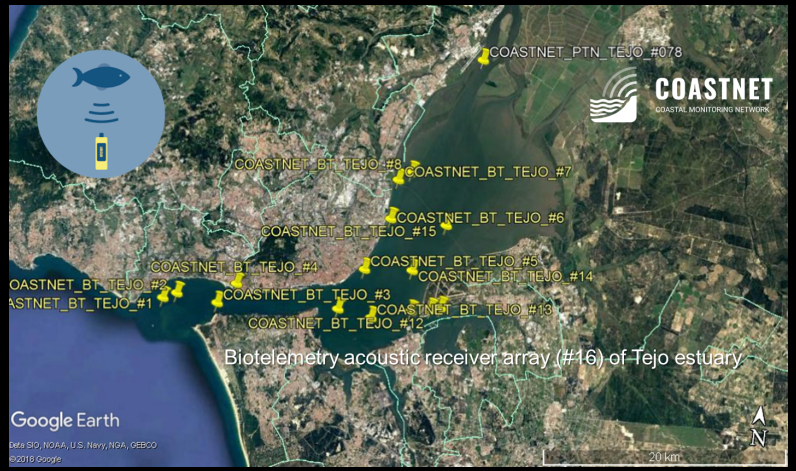
THE PORTUGUESE TRACKING NETWORK

3.

The Portuguese Tracking Network

- **Consisting of acoustic telemetry receiver detection lines;**
- **Strategic locations in the coastal zone and river basins;**
- **Detection of marked animals;**
- **Track species movements and migrations.**



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GEOPORTAL

4.

Web-based CoastNet Platform

- **Integrates and processes the data collected remotely (and historical data), making this information available to different stakeholders;**
- **Availability and presentation of data in web-based platform.**

- Satellite products;
- Products from environmental and ecological monitoring system in real-time;
- Products from measurements and integrated field surveys of environmental and biological variables;
- Products from coastal tracking network;
- Historical data products.

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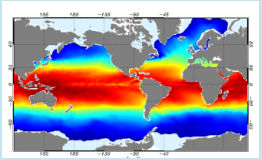
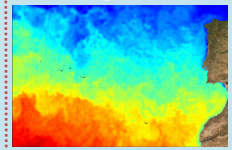
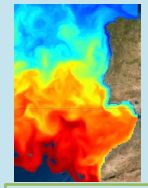
Global



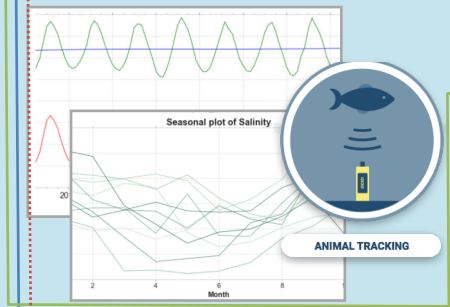
Satellite products
High resolution
Regional area
High process level

Regional





Local



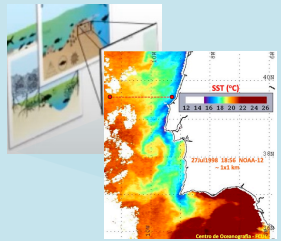
Scientific Community (CC)

Data entry

Repository:
Storage
Download

Services + CC

Specifics Products



CoastNet - GEOPORTAL

VIEW:

Visualization and repository of data in real time

GEOPORTAL

Platform with a dynamic structure that allows the incorporation of **new data sets**, for their processing, storage and visualization.

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GEOPORTAL WORKFLOW

esa European Space Agency

Copernicus Europe's eyes on Earth

BEC Barcelona Expert Center

Biological Group	Estuary	Year(s)	Project(s)
Fishes	Douro	2001, 2006	ERIC, Nurseries
	Guadiana	2006, 2009	Nurseries, Fishest
	Lagoa Óbidos	1993	Óbidos
	Minho	2006, 2012/13	Nurseries, 3M-Recital
	Mira	1986, 1991/92, 2006, 2009, 2012/13	e.g. Nurseries, Fishest, 3M-Recital
	Mondego	2000/01, 2006, 2009/11, 2012/13	e.g. Nurseries, Reconnect, 3M-Recital
	Ria Aveiro	2006, 2009	Nurseries, Fishest
	Ria Formosa	2006	Nurseries
	Sado	1994, 2001, 2006, 2009	e.g. HC, Nurseries, Fishest
	Tagus	1979, 1994, 1995, 2001, 2006, 2009	e.g. ERIC, Nurseries, Fishest
Invertebrates	Douro	2002, 2006	ERIC, Nurseries
	Guadiana	2006, 2009	Nurseries, Fishest

1. **Real-time access**

DATA SOURCES

NRT
-Near Real Time-
(ftp/satélite)

Time Series
(80´-present)

Visualization

- Maps
- Plots
- Transects
- Animations

Download

- Statistical analysis
- Space-time selection
- Repository
- Metadata

Calculation

- Mean
- Median
- Standard deviation
- Percentil 10,90

3. **Online/**statistical analysis

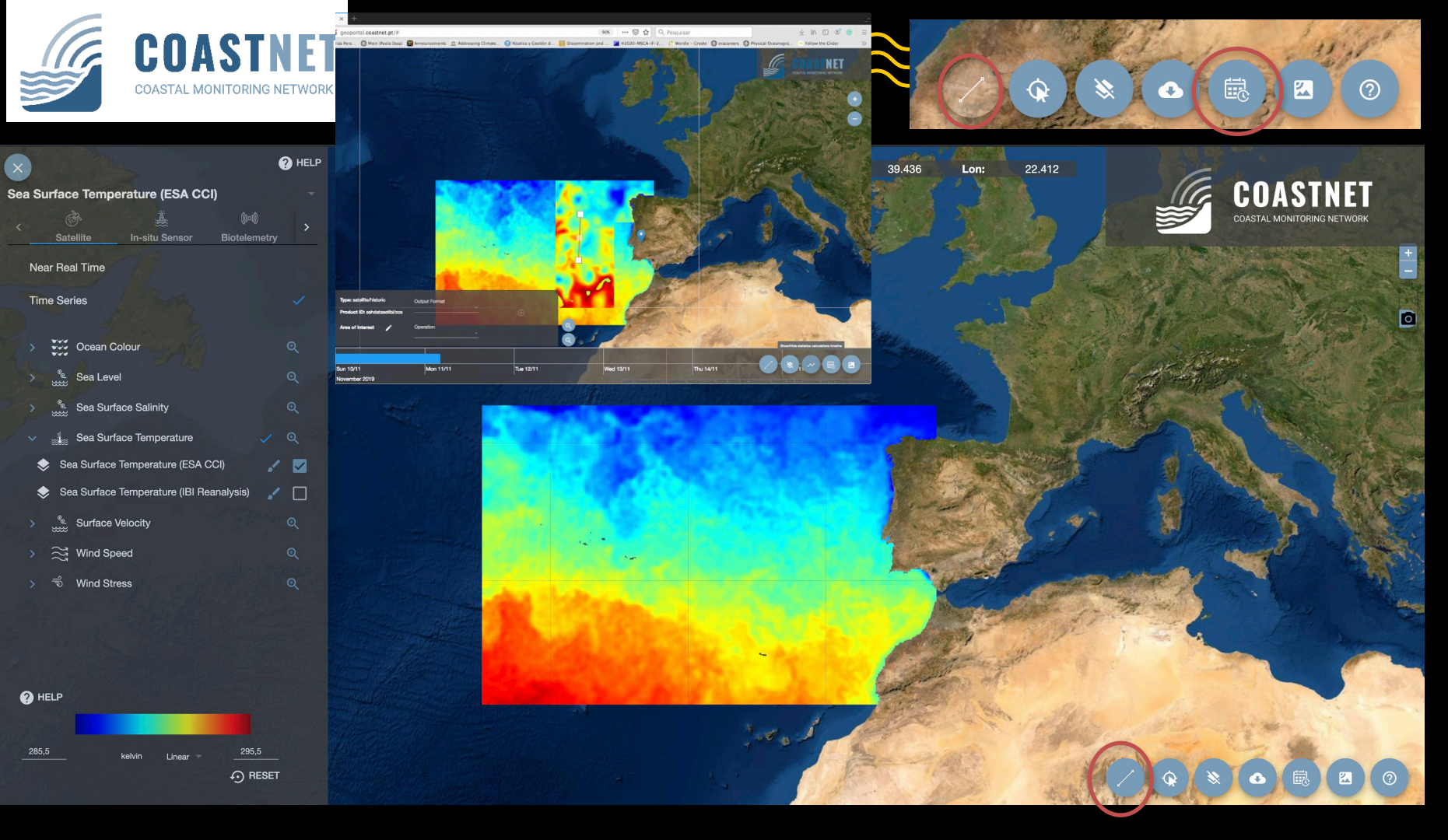
Live storage
(Data integration)

Specifics products

2. **Data storage/repository** capacity

4. **Dynamic** data **platform**, layers of offering **services**

Services: Scientific community + Stakeholders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HELP
Sea Surface Temperature (ESA CCI)
Satellite
In-situ Sensor
Biotelemetry
Near Real Time
Time Series
Ocean Colour
Sea Level
Sea Surface Salinity
Sea Surface Temperature
Sea Surface Temperature (ESA CCI)
Sea Surface Temperature (IBI Reanalysis)
Surface Velocity
Wind Speed
Wind Stress
HELP
285,5
kelvin
Linear
295,5
RESET
39.436
Lon:
22.412
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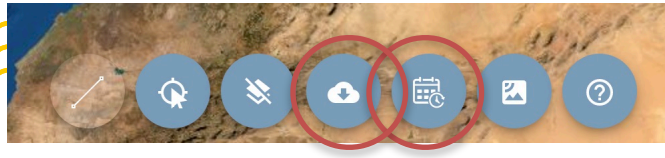

HELP

Tejo - Buoy 2 - Salinity

Satellite | In-situ Sensor | Biotelemetry

Near Real Time

Time Series

- Mondego
- Tejo
  - Buoy 1
  - Buoy 2
    - pH
    - Temperature
    - Salinity
    - Dissolved oxygen
    - Chlorophyll
  - Buoy 3

Lat: 35.012 Lon: 6.416

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Time series

Tejo - Buoy 2 - pH | Tejo - Buoy 2 - Temperature (°C) | Tejo - Buoy 2 - Dissolved oxygen | Tejo - Buoy 2 - Salinity | Tejo - Buoy 2 - Chlorophyll

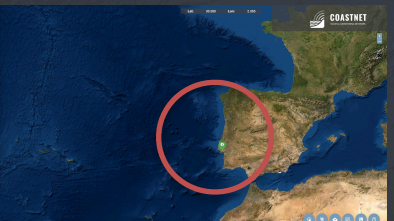
26. Jun 06:00 12:00 18:00 27. Jun 06:00 12:00 18:00 28. Jun 06:00 12:00 18:00 29. Jun

Tejo - Buoy 2 - Dissolved oxygen | Tejo - Buoy 2 - Salinity | Tejo - Buoy 2 - Temperature | Tejo - Buoy 2 - Chlorophyll | Tejo - Buoy 2 - pH

Highcharts.com

HELP

Get Data [Tejo - Buoy 2 - Salinity] CLOSE



Start Date 6/26/2020 End Date 6/29/2020

Start End

Wed 24/6 | Thu 25/6 | Fri 26/6 | Sat 27/6 | Sun 28/6 | Mon 29/6 | Tue 30/6

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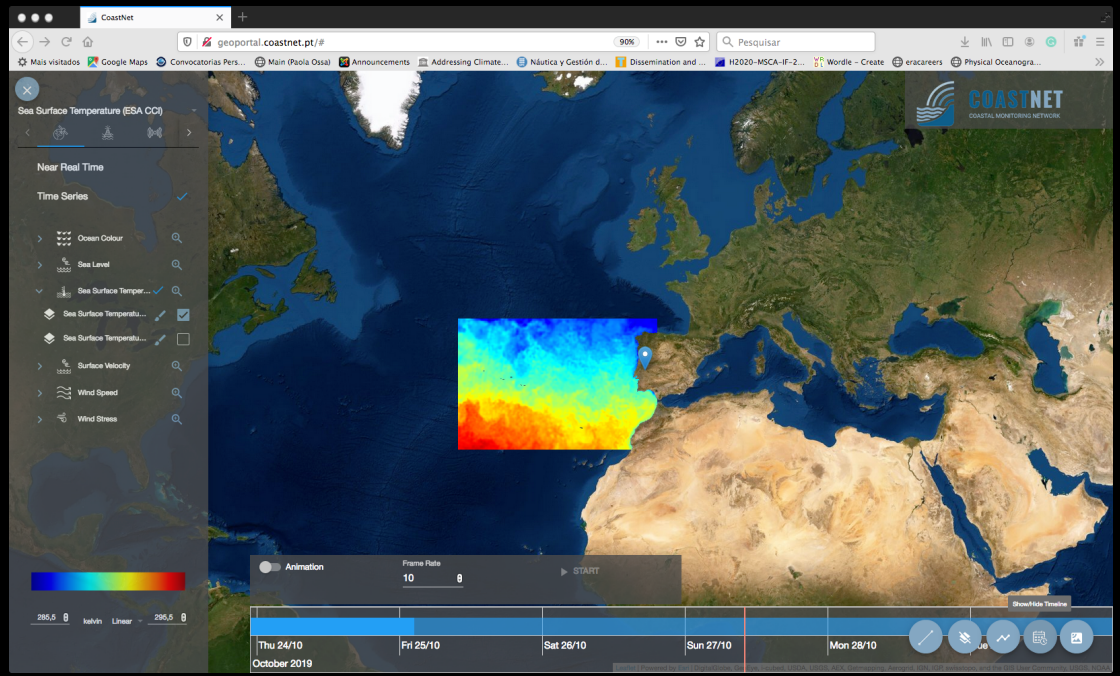
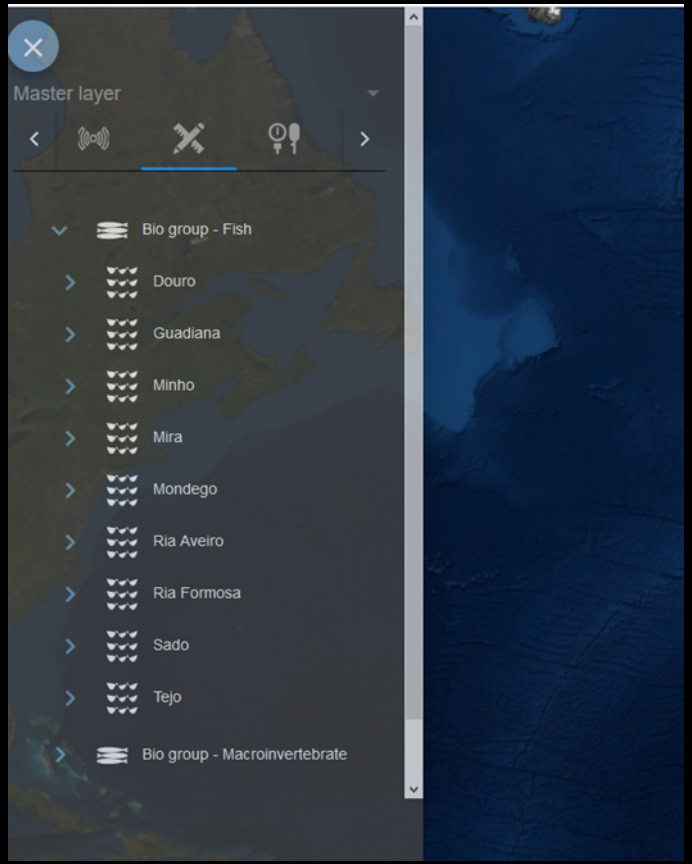
Geoportal - Historical data





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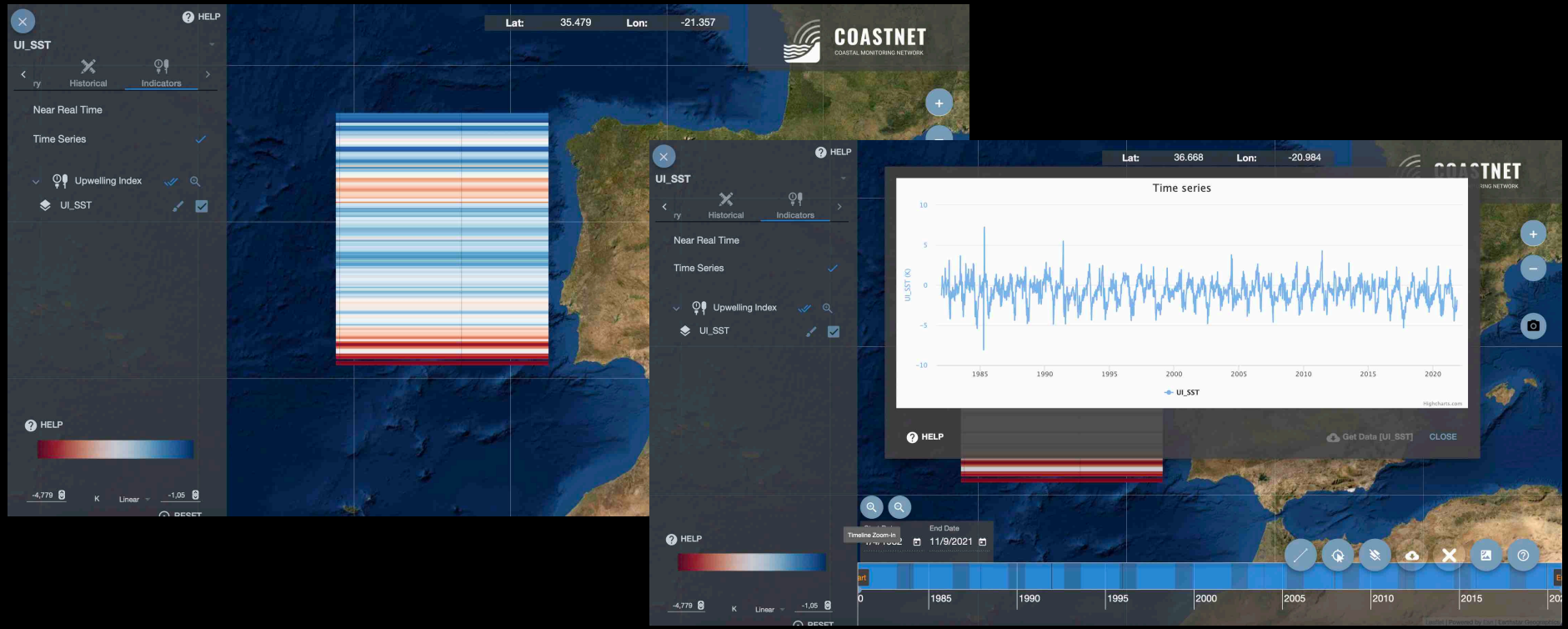
Geoportal - Upwelling Index



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ASSOCIATIONS

Portuguese representative of the European infrastructure **European Tracking Network** (ETN).

Portuguese member of the European infrastructure **International Centre for Advanced Studies on River-Sea Systems (DANUBIUS).**

DANUBIUS-RI
making River-Sea Systems work

Forms part of the **United Nations Decade of Ocean Science** for Sustainable Development 2021-2030.

2021 2030 United Nations Decade of Ocean Science for Sustainable Development

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Implementation Team

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Thank you!

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CHALLENGES

- Maintaining and improving the infrastructure (financing model);
- Making the infrastructure useful (divulgation and adaptation);
- Improvement paths (different types of sensors and equipment, other estuaries or coastal areas);
- Association with other European and World infrastructures and establishment of partnerships with other national infrastructures and institutions.