Deliverable D.T. 3.2.1

i-waveNET Decision Support System

USER MANUAL

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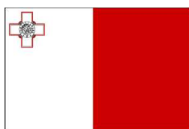
1. Introduction

The Decision Support System (DSS) is a user-friendly interface where the same infrastructure and data is used for multiple purposes, and exploited by many users. The aim is to have one portal that integrates various services to support responsible authorities in activities related to the sea. These include:

- monitoring,
- research,
- service provision,
- safety,
- policy and planning.

The services available are both products in the form of hindcasts and climatological data, as well as operational data which is updated daily. The web interface allows users to:

- view and query the outputs of the monitoring system and models,
- overlay this information with products from other sources (e.g. Copernicus or EMODnet),
- consult the zoning of the wave motion in real time for safety purposes for navigation in the Sicilian channel.

2. Main features of DSS

The DSS is available at https://data.ocean.mt. The landing page is shown in Figure 1. Four features are immediately visible on the page:

- i-waveNET and other project logos panel in the bottom right corner;
- Data Catalog in the top left corner;
- Date Time selection window;
- User login button in the top right corner.

Other features include:

- Depth/Elevation selection window;
- Color bar controller;
- Time Series window;
- Depth Profile window,
- Time series from in situ stations.

All the panels on the interface can be moved on the page, so the interface can be configured by the users according to their preference.
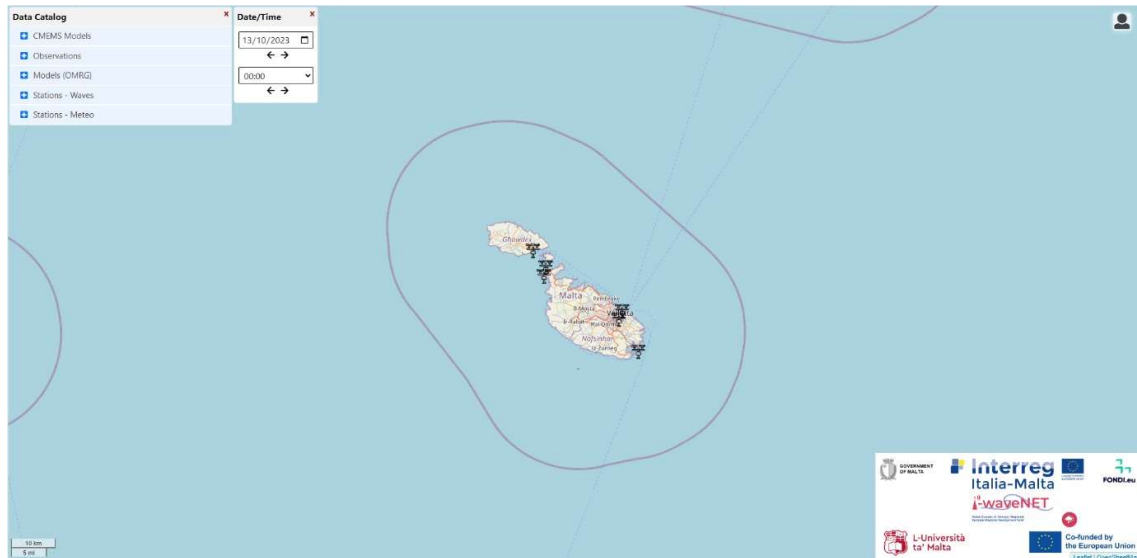
Figure 1: *i-waveNET DSS landing page*

3. Data catalog

The data catalog allows the user to select the data layers required. The panel is collapsible and clicking on the ⊞ button will expand the section to add a level of detail. At the lowest level, the data layer has a check box to the left. If this is selected, the data layer will be displayed on the map. The info icon to the right shows basic metadata about the layer – namely the parameter, the units, the time frames available and number of depth levels (if applicable).
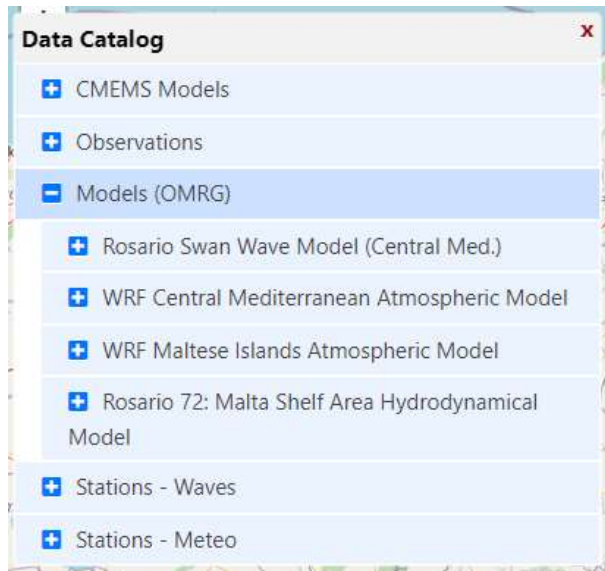
Example: Data catalog

To view **Temperature** forecast maps from **Rosario 72: Malta Shelf Area Hydrodynamical Model**, one of the models run by **OMRG.**
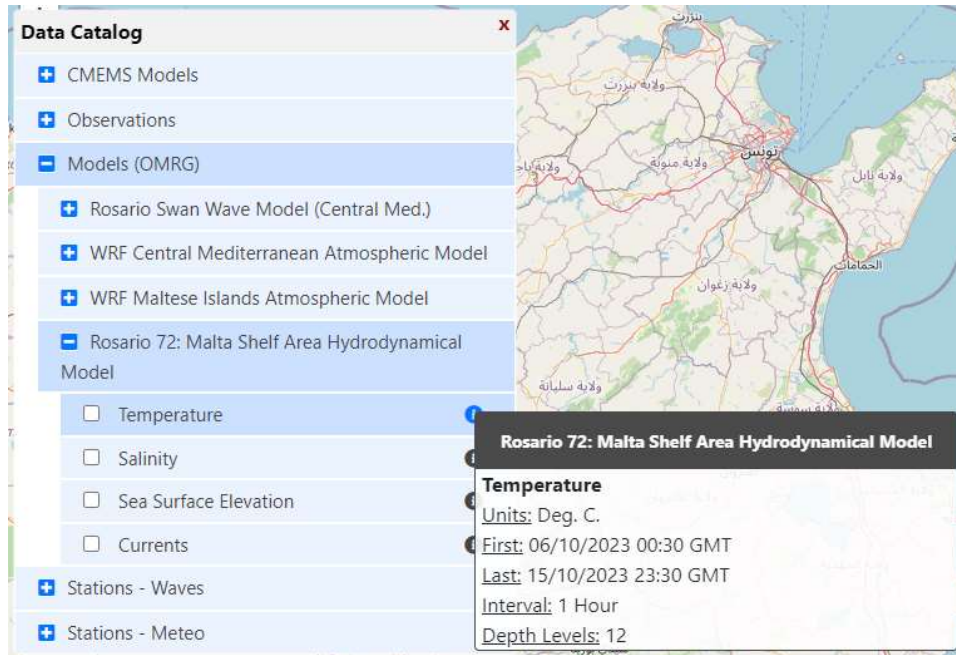
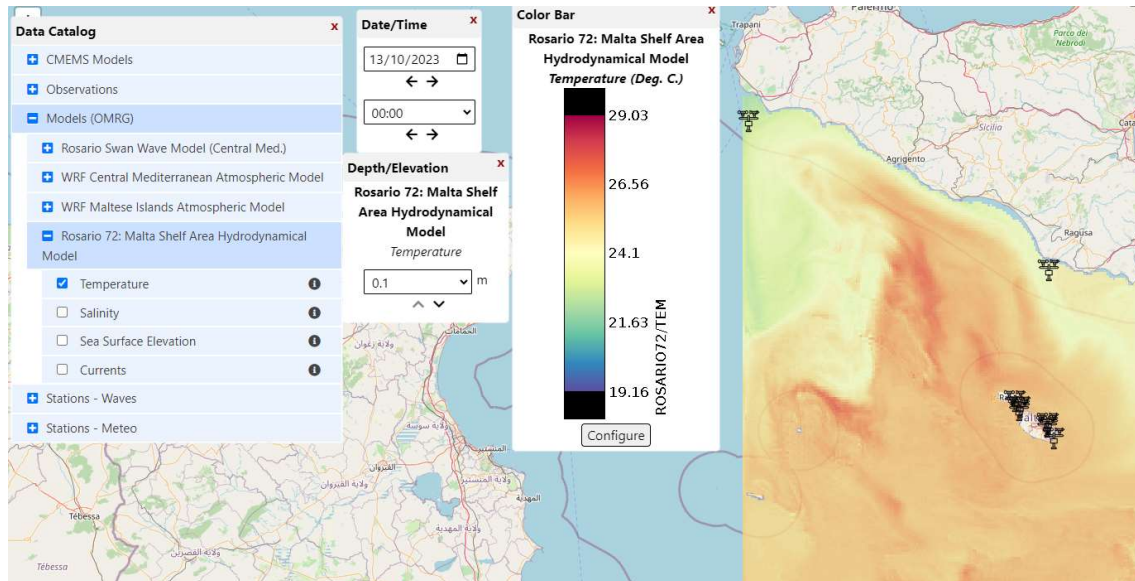1. **Click on** ⊞ **button next to Models(OMRG)**
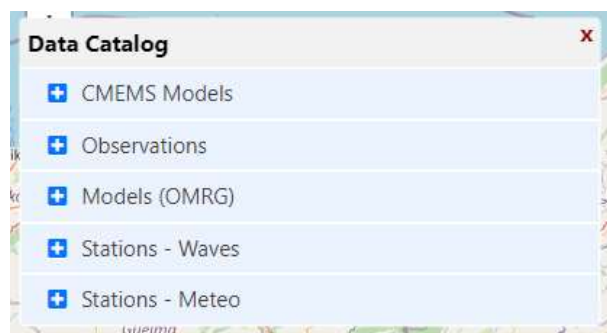
2. **Click on ➕ button next to Rosario 72: Malta Shelf Area Hydrodynamical Model**

3. **To see some info about the data click on ⓘ button to the right of the parameter**

4. **To display the data on the map, click on the check box ☐ to the left of the parameter.**

4. Authenticated users

The DSS offers two levels of service:

  (i) All users visiting the page can visualise the available data and plots of time series and profiles (if available);
  (ii) Registered users can additionally download the viewed data as a CSV file. In this case there is a Download Data button in the panels displaying the data.

Users can log in, or ask to be registered, by clicking on the user button at the top right corner of the interface (**Figure 2**). User authentication is performed using Google Single Sign-On (SSO).
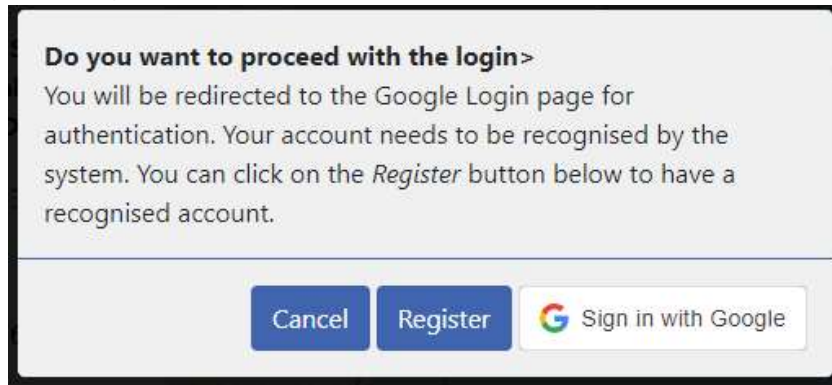

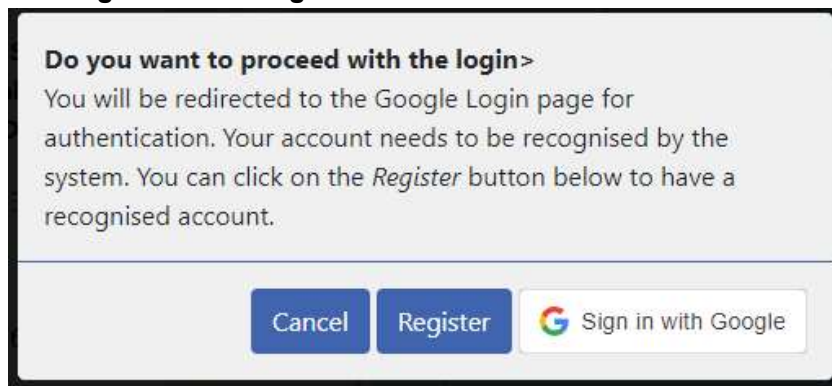***Figure 2****: User log in button*

Example: Register new user

1. **Click on the user button (Figure 2).**

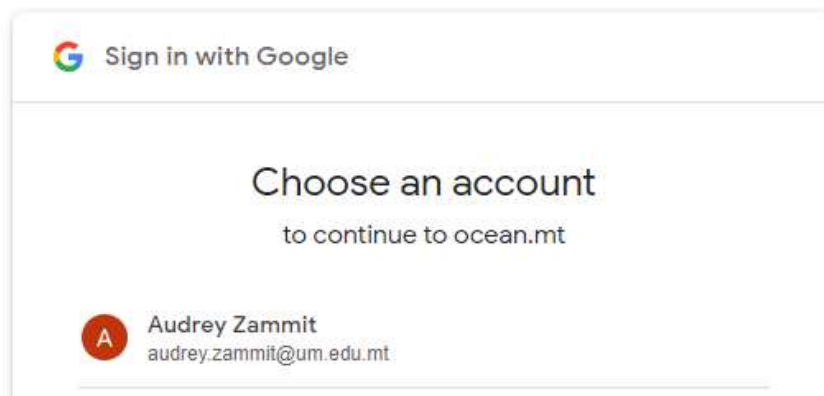2. **Click on the Register button and follow the instructions.**

Example: Log in

1. **Click on the user button (Figure 2).**
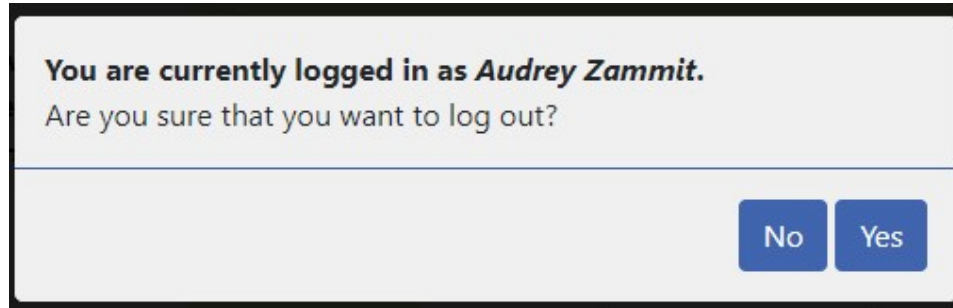2. **Click on the Sign in with Google button.**

3. **Select the Google account to use.**

Example: Log out

1. **Click on the user button (Figure 2).**
2. **Confirm that you want to log out.**

> **You are currently logged in as *Audrey Zammit*.**
> Are you sure that you want to log out?
>
> [No] [Yes]

5. Data from in situ stations

The DSS includes data from three types of in situ stations:
  (i)   Meteo stations;
  (ii) Sea level stations;
  (iii) Wave buoys.

The data from these stations can be accessed from two points:
  (i)   Data Catalog;
  (ii) Station icon on the map at the location of the station (Figure 3);

***Figure 3**: Meteo station icons on map*
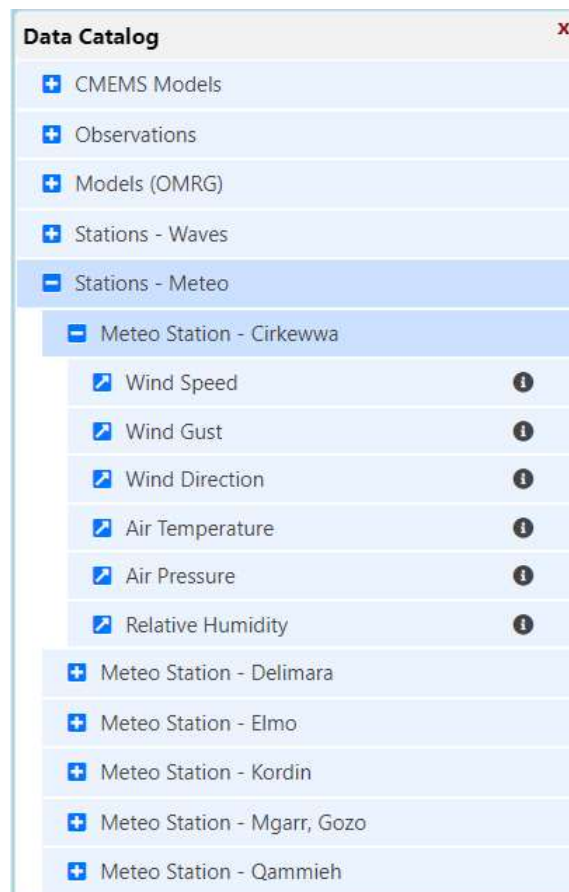
Example: Data from in situ station

To view **Air Temperature** time series from **Cirkewwa meteo station.**

Option 1
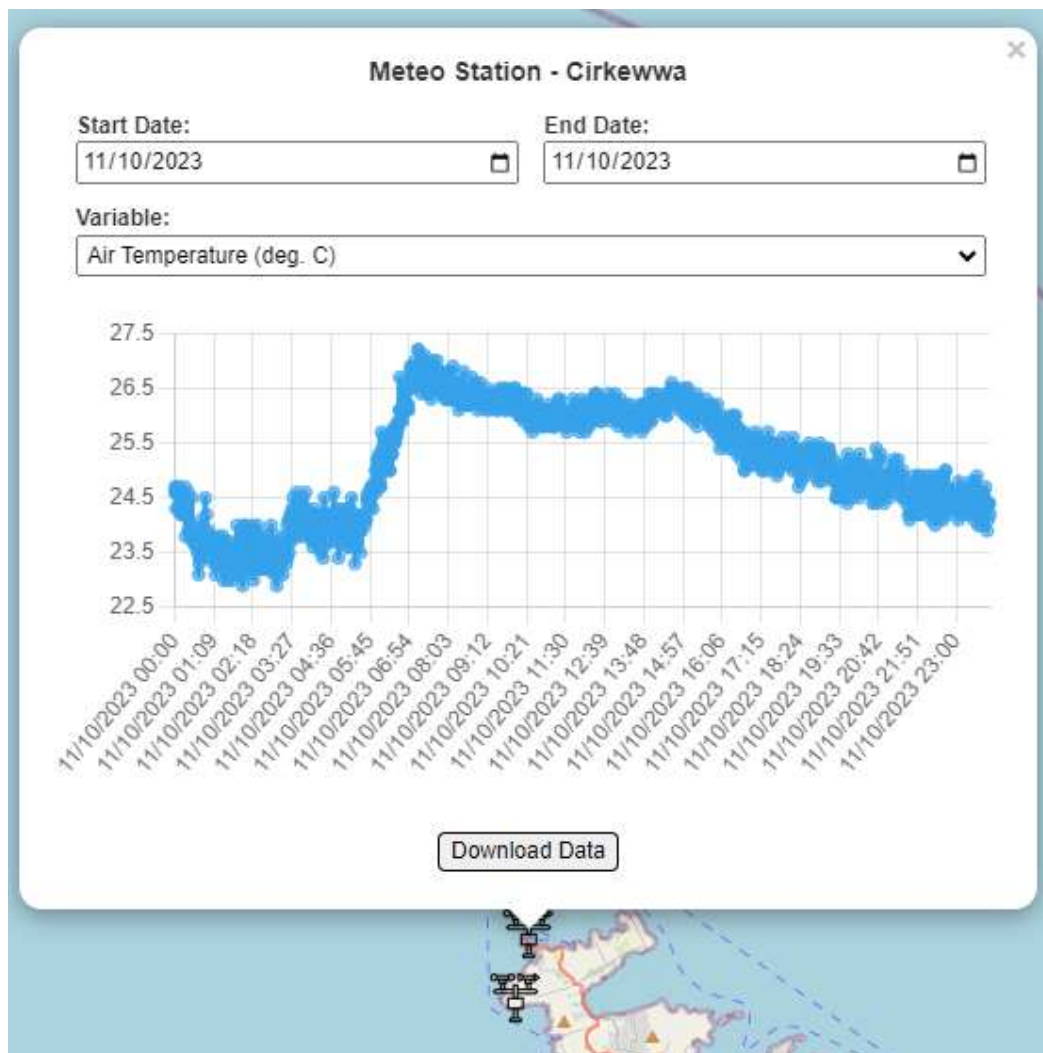
1. **Click on** ⊞ **button next to Stations - Meteo**

2. **Click on** ⊞ **button next to Meteo Station - Cirkewwa**

3. Click on ⬏ button to the left of **Air Temperature.**
4. **The time series can be configured from the panel by selecting start and end date as well as the parameter viewed. In the case of authenticated users, there is also a button to download the time series as a CSV file.**


Option 2

(i) **Click on the Cirkewwa station icon on the map. The default parameter will show. This can be changed from the time series window.**

6. Gridded data

Data from models, satellite and the HF radars are all presented as an overlay on the map in the DSS. Once a layer is selected from the data catalog, the following controls open to enable the user to customise the data (**Figure 4**):

- **(i)** Date / Time;
- **(ii)** Depth / Elevation;
- **(iii)** Color Bar.

Furthermore, the user can plot either a time series or a depth profile at point on the map by right clicking over the required location.
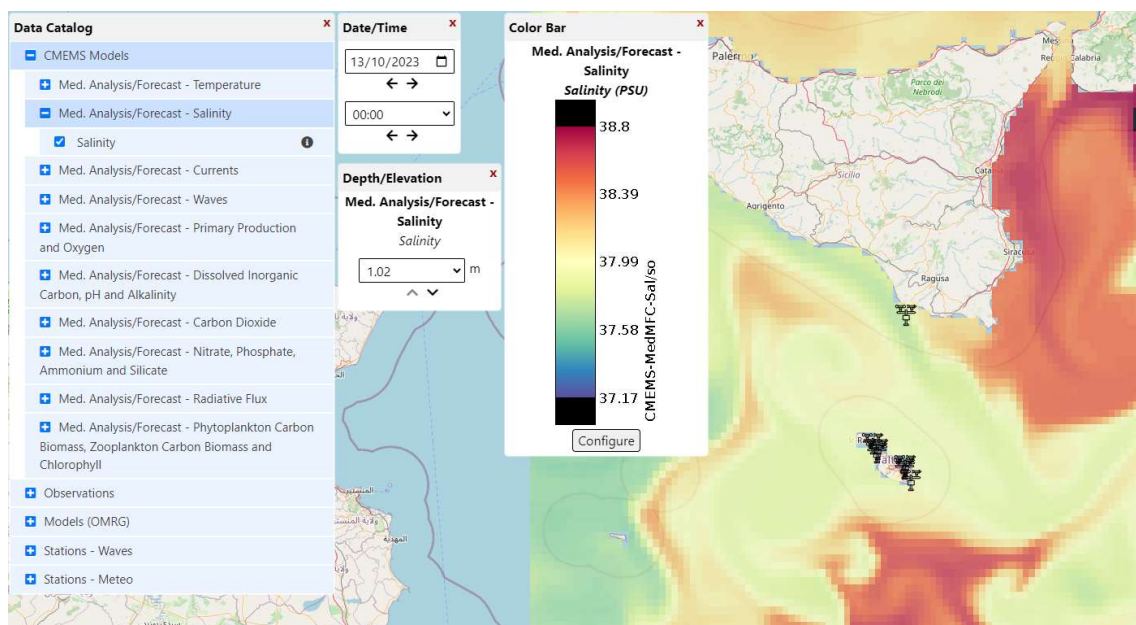
Figure 4: *Gridded data controls on map*

Example: Change date and time of data being displayed

(i) **To change the date either use the arrow buttons to move one day forwards or backwards, or click on ☐ to open the calendar widget.**

(ii) **To change the time either use the arrow buttons to move one hour forwards or backwards or click on the down arrow to use the dropdown menu.**

Example: Change date and time of data being displayed

(i) **To change the depth level of the data being viewed, click on the down arrow on the right side of the current level to use the dropdown menu. Alternatively, use the up and down arrows below the current level to scroll through the available levels.**
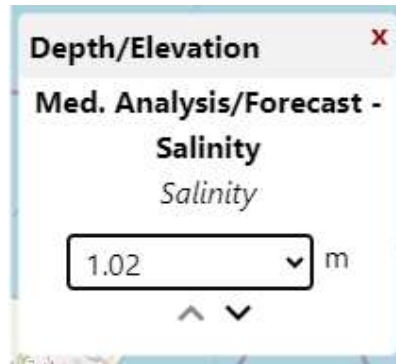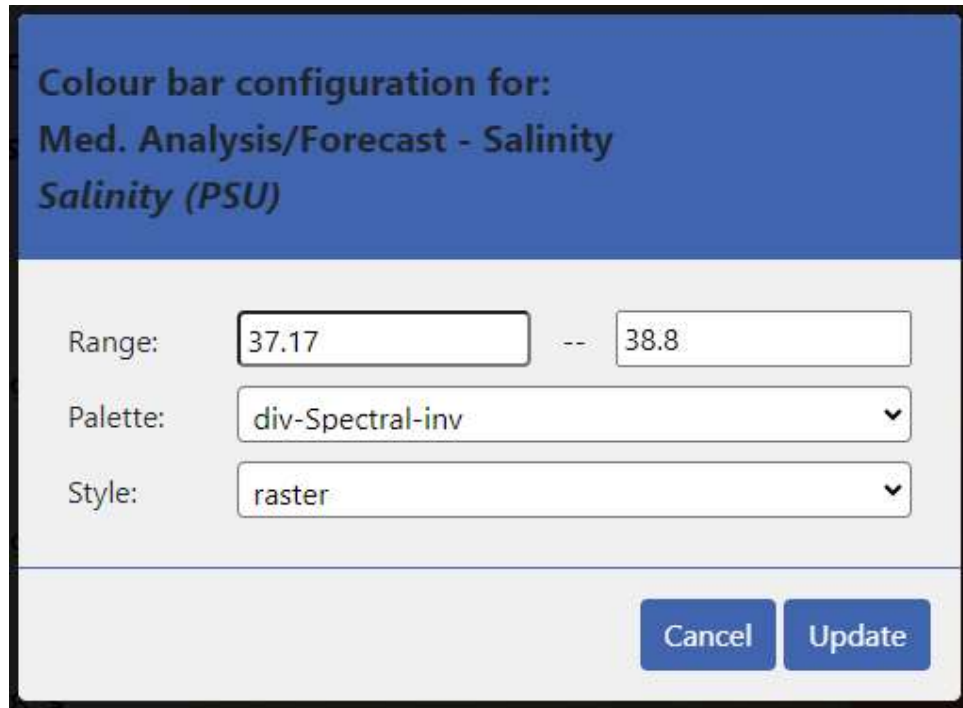

Example: Customise color bar

(i) **Click on the Configure button on the Color Bar window.**
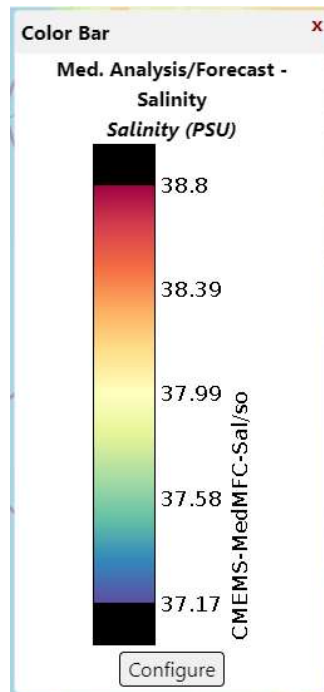
(ii) The configuration panel includes controls to modify the range covered by the colour bar, the palette used, as well as the style ().

Colour bar configuration for:
Med. Analysis/Forecast - Salinity
Salinity (PSU)

|			
Range:	37.17	--	38.8
Palette:	div-Spectral-inv		
Style:	raster		

Cancel   Update

Example: Display time series at point on map

(i) **Right click on the required point on the map.**

(ii) **Select Time Series on the context menu that appears.**

Toolbars

Date/Time

Depth/Elevation

Parameter

Colour Bar

Time Series

Depth Profile

(iii) The start and end date on the time series plot can be modified from within the time series window itself.
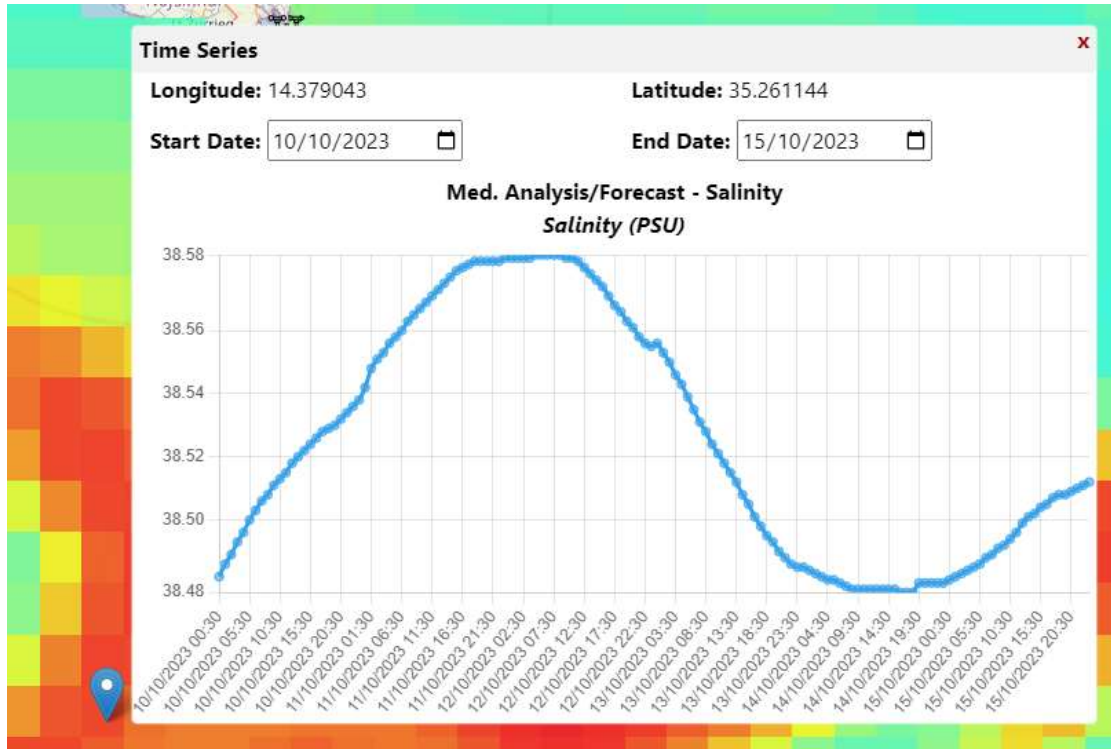
Example: Display depth profile at point on map

(i) Right click on the required point on the map.

(ii) Select Depth Profile on the context menu that appears.

(iii) A window opens showing the coordinates of the selected profile and the plot.