Copernicus Marine Essentials

Webinar Series
April 1-15-29 2025

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SOMMAIRE

Introduction

Here you will find the unanswered questions of the webinar series "Copernicus Marine Essentials" held on 3 days : April 1st, 15th and 29th 2025. More than 1600 people took part of the event, hence this post-event report. You can also have a look at the replays on our YouTube Channel [here](#).

Please keep in mind that some questions asked were very similar, as a result we've summarized the different topics you covered in the Q&A 😊

We thank you again for your presence and hope to see you again!

1) Session #1 – Explore Marine Data

General questions about the Copernicus Marine Service

Some useful links :
- o [Home | CMEMS](#)
- o Products catalogue : [Copernicus Marine Data Store | Copernicus Marine Service](#)
- o Past use cases : [Use Cases | CMEMS](#)
- o Everything you need as a user : [User Corner | CMEMS](#)
- o Tutorials from past events : [E-learning materials | CMEMS](#)

- **Is the data freely available or do we need to pay? Can it be use for commercial purposes or to inform policy makers ?**

The vizualisation, the access and the download of data are totally free: [Access data | CMEMS.](#)
Once it is downloaded, you can do whatever you want with the data, you just need to cite the Copernicus Marine Service in your work (the citations are pre-made on each product to facilitate the task).

- **Is it possible to use a format other than netcdf ?**

Yes, it is possible to use a data format other than .nc for Copernicus Marine products. You can specify the format of the downloaded data to be either NetCDF or Zarr. To do this, you can use the following options:
- o For the Command Line Interface (CLI), use --file-format <format> where <format> can be [netcdf|zarr].
- o For the Python Library (API), use file_format=<format> where <format> can also be [netcdf|zarr].

By default, the data is delivered in NetCDF format, but if you specify Zarr format, you can download the data in that format as well. Additionally, the majority of Copernicus Marine products are produced in NetCDF format, but they can also be downloaded

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in Zarr format via the Copernicus Marine Toolbox, and some datasets provide GeoTIFF and Shapefile data.

Here is a link to an article to look into it in detail:
[What are the formats of Copernicus Marine products? | Copernicus Marine Help Center](#)

- <u>How can you be sure about Copernicus data accuracy ?</u>

  Copernicus data come from several sources : satellite, in-situ and model data. All of them are tested, updated, scientifically-driven data. Useful information, such as error levels of observations or indicators on the reliability of forecasts is provided consistently and effectively.

2) Session #2 – Access Marine Data

MyOceanPro Viewer Demonstration : **MyOcean Viewer | CMEMS**

- <u>Can we save our progress or history to continue our work later or to make some corrections or edits?</u>

Yes, in MyOcean Pro Viewer, you can save your work progress. The tool allows you to save graphs in your session, which means you can continue your work later or make corrections and edits as needed. Additionally, you can minimize and expand graph windows, which can be useful for managing your workspace and focusing on specific data or analyses.

- <u>What is the programming language used to analyze the ocean data using Myocean Viewer? Are the results justifiable?</u>

Most of MyOcean is in JavaScript/TypeScript, including the data analysis the user refers to. There is a small amount of Python in the viewer, which is the part that creates the netCDF subset files.
The only data analysis done are statistics : averages (geographic and temporal), minimum, maximum, very basic calculation.
We'd like to see examples of calculations that could be questioned.

- <u>Is it possible to download data in CSV or JSON format?</u>

It is possible to download data from objects drawn directly from the Viewer (point, line, area) in CSV format by clicking on the "..." icon in the graphics window > Export to CSV

You can download data in their NetCDF native format and convert them into CSV as explained in this article.

It's not possible to download data as JSON, except when downloading the metadata of the Copernicus Marine catalogue via the describe function of the Toolbox (cf. self-versioned documentation to see JSON as output dictionary).

- <u>Does CMEMS have downscaled projections data?</u>

Copernicus Marine funds research projects and participates in projects on climate projections (example: Towards downscaled regional climate change projections for marine environments, May 2021). But for the moment, we do not provide climate projections in our data catalog.

The Copernicus Marine Toolbox

Some useful links :
- o Copernicus Marine Toolbox - Introduction | Copernicus Marine Help Center
- o Copernicus Marine Toolbox - Installation | Copernicus Marine Help Center

- <u>Is it possible to connect MATLAB data to Jupyter Notebook? If I have image processing data in MATLAB, can I visualize it within Jupyter? If so, how can I do?</u>

Although User Support does <u>not guarantee MATLAB support</u>, it is perfectly possible to import and visualize MATLAB data in a Jupyter Notebook, provided you export it in a Python-compatible format (e.g. CSV, MAT via the scipy.io library, etc.). Once the data has been exported, you can load it into Jupyter using Python libraries adapted to image processing and visualization.

- <u>Some mediterranean sea products were not available for access through R CopernicusMarine package a few months ago. Has this been updated and fixed?</u>

There is no difference of access to Copernicus Marine data between Toolbox Python API and R, but it could happen data is not accessible. In this case, don't hesitate to check our <u>Notification User Service (UNS)</u> and to contact us by chat.

- <u>Open dataframe function works too when you have data in EASE Grid ?</u>

In the context of working with EASE Grid data, the read_dataframe function can indeed be useful for reading data, provided the grid data is in a format that can be structured into a dataframe. However, some preprocessing might be required if the EASE Grid format differs significantly from typical dataframe-compatible formats (e.g., CSV, Parquet).

If the data is in EASE Grid format, you might need a compatible library or conversion step (such as using GDAL or another geospatial library) to correctly interpret the grid structure before loading it into a dataframe. Once converted or adapted, you can use read_dataframe to handle it within your workflow, especially for data analysis or transformation tasks.

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3) Session #3 – Use Marine Data

Use case #1 – Chiara Phillips

Here are a few links that may be of interest to participants:
- The dataset used to create the Plankton map: https://data.marine.copernicus.eu/product/GLOBAL_ANALYSISFORECAST_BGC_001_028/description
- A YouTube tutorial: https://www.youtube.com/watch?v=A_0wvyBF3l0
- GitHub tutorials and data: https://github.com/chiara-phillips/qgis-to-illustrator-tools

Thanks again for your participation 😊