

Visualising geospatial data – lessons from Copernicus

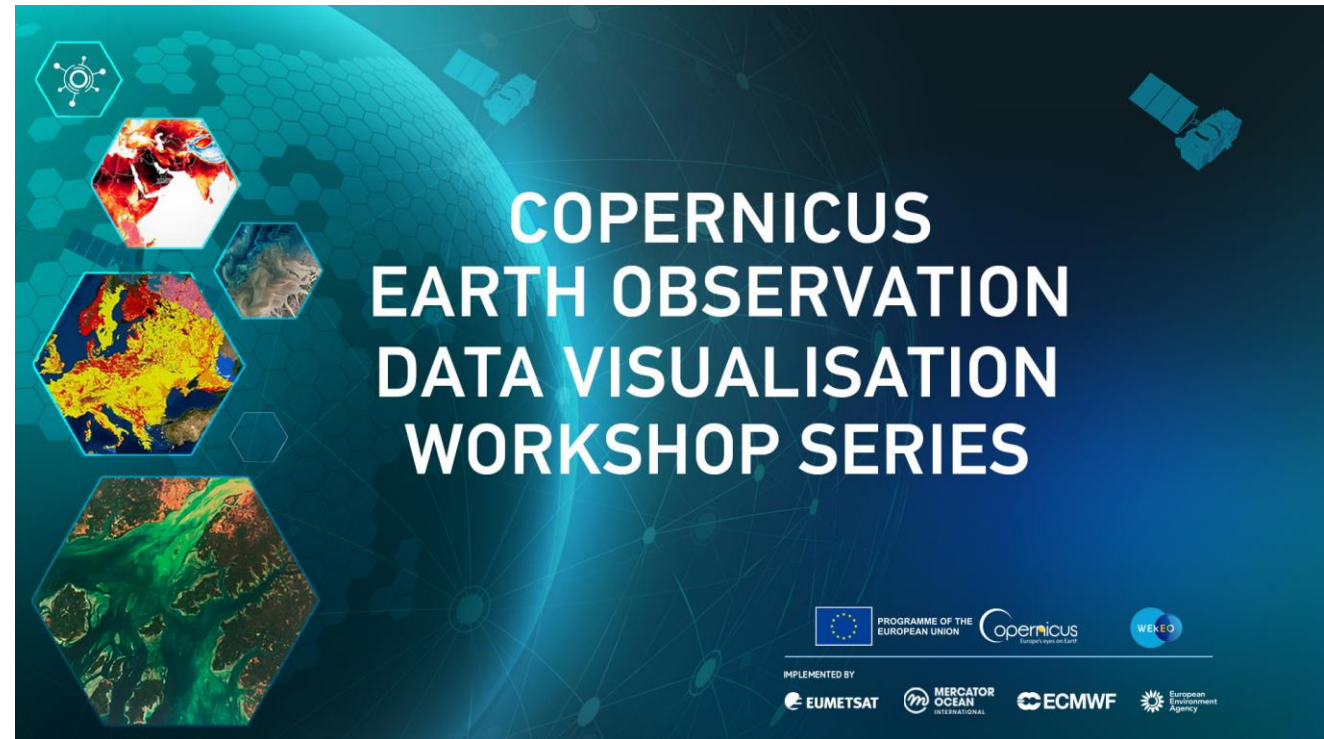
Neil Fletcher, Digital Media and
Outreach Manager





Earth observation data visualisation workshop

- Data visualisation and what can learn from other EU projects/programmes
- Share lessons from series Copernicus data visualisation workshops





Earth observation data visualisation workshop

- Six virtual 2 hour workshops
- Themes - oceans, climate, etc...May-June 2023
- Each theme - talks by media, scientists using EO imagery and social media.
- Help data/science journalists find EO data.

EARTH OBSERVATION DATA VISUALISATION WORKSHOP SERIES

MARK YOUR CALENDAR!

- 16 MAY • Introduction to EO Data visualisation
- 23 MAY • Air quality and wildfires
- 30 MAY • Oceans and sea ice
- 6 JUNE • Climate and weather
- 13 JUNE • Climate extremes: heatwaves, changes in ice, drought
- 20 JUNE • Being practical: How to access and process Copernicus and EUMETSAT data

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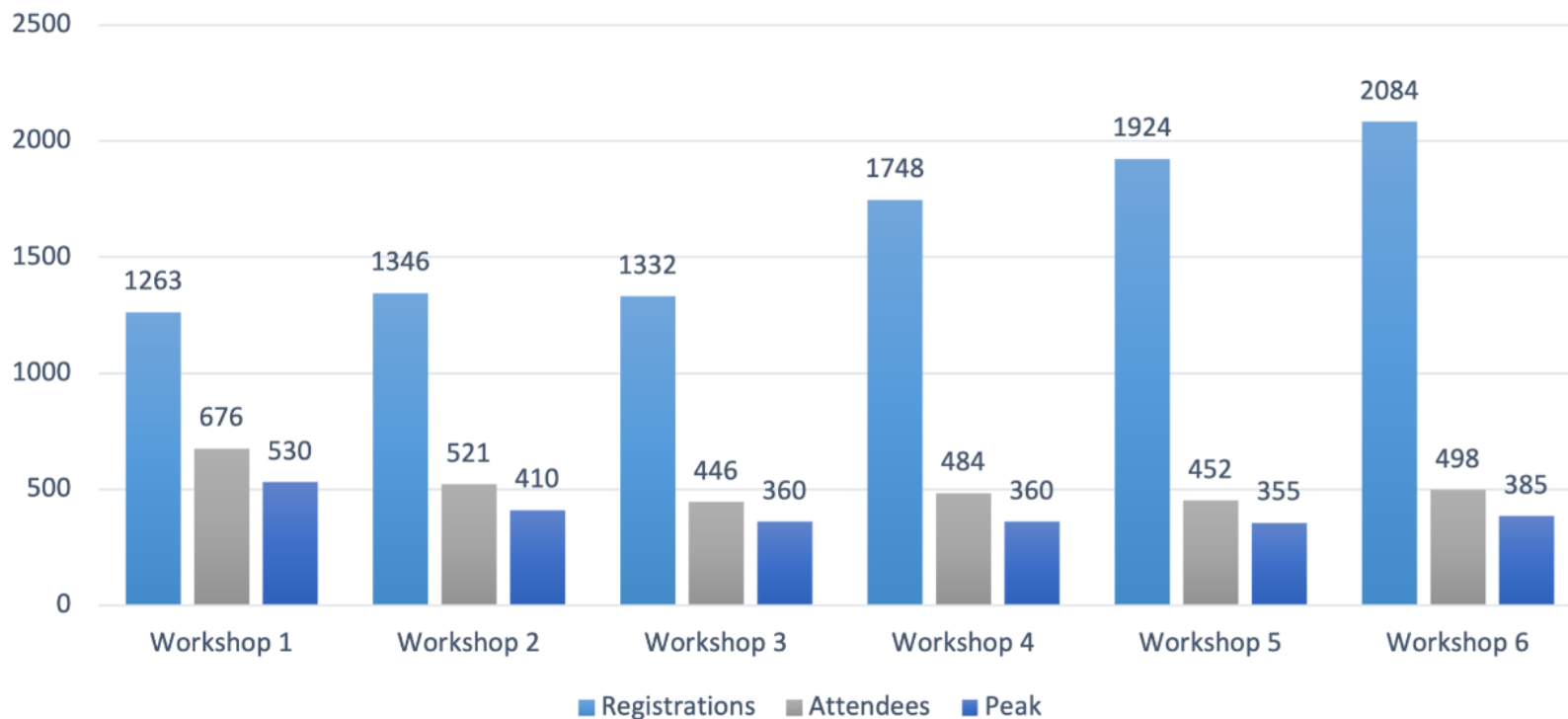
EUMETSAT | MERCATOR OCEAN INTERNATIONAL | ECMWF | European Environment Agency

PROGRAMME OF THE EUROPEAN UNION | Copernicus | WEKEO

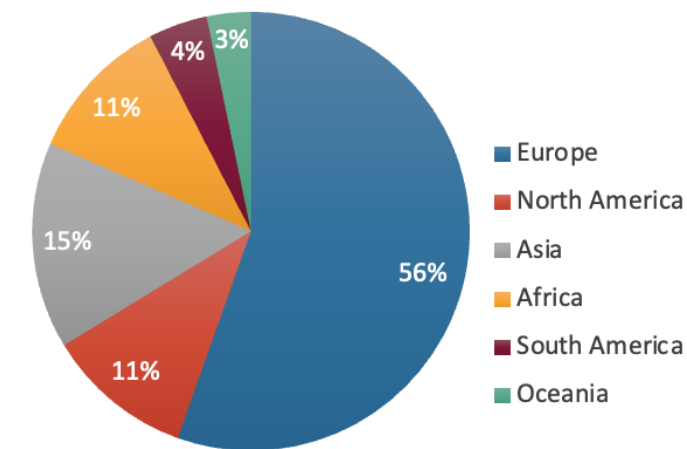


Earth observation data visualisation workshop

Registrations and attendance at the workshops



4451 Bitly link clicks to register from **125** countries



Total Registrations

9697

Total attendees

3077

Total unique attendees

1581




Earth observation data visualisation workshop

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EUMETSAT #EOData4Storytelling

Meteosat-12: Europe's new weather satellite takes first photos

4 May



WATCH: Meteosat-12 takes a picture of the weather systems below it every 10 minutes

By Jonathan Amos
BBC Science Correspondent @BBCAmos

The first images from Europe's new weather satellite, Meteosat-12, have just been released.

Copernicus Earth Observation Data Visualisation Workshop Series
Introduction to EO Data Visualisation

EUMETSAT




Kasha Patel
The Washington Post

EUMETSAT #EOData4Storytelling

- Make it understandable
- Do highlight features in an image
- USE A SCALE BAR!
- Will it work on a mobile screen?
- Don't be afraid of radar/non optical
- Find a friend/expert
- Work with agencies/companies

Copernicus Earth Observation Data Visualisation Workshop Series
Introduction to EO Data Visualisation

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EUMETSAT

EXPERIENCE

- Simplicity is key when showing geospatial data
- Clear graphics with very basic annotations
- Limited jargon and text volume
- Create threads and link in work of others
- Provide as many links to sources as possible
- Historical context

CHALLENGES

- Explaining complex terms
- Communicating uncertainty
- Attribution to climate change
- Trolls & bots



PRESENTED BY EUMETSAT MERCATOR OCEAN ECMWF

18:19 / 2:11:13 - Scott Duncan - Senior Meteorologist



Earth observation data visualisation workshop

The online promotion caught the attention of representatives from **prominent news outlets** such as the BBC (11), The New York Times, Le Monde, AFP (3), Financial Times (2) and **generated interest from several EU agencies and EC DGs too** (EUSPA, EEA, EEAS, DG JRC, DG CLIMA, DG CNCT).

Le Monde

The Washington Post



Le Parisien

DER SPIEGEL



The New York Times



FINANCIAL
TIMES



Met Office



climate.copernicus.eu





Good practice guide on GitHub

Community-driven want people to provide input

All presentations – useful resource

Earth Observation Data Visualisation Good Practice Guide 1.0.0 documentation

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Introduction

[Acknowledgements and authors list](#)

[Contribution guidelines](#)

[What makes a good environmental story for modern news media?](#)

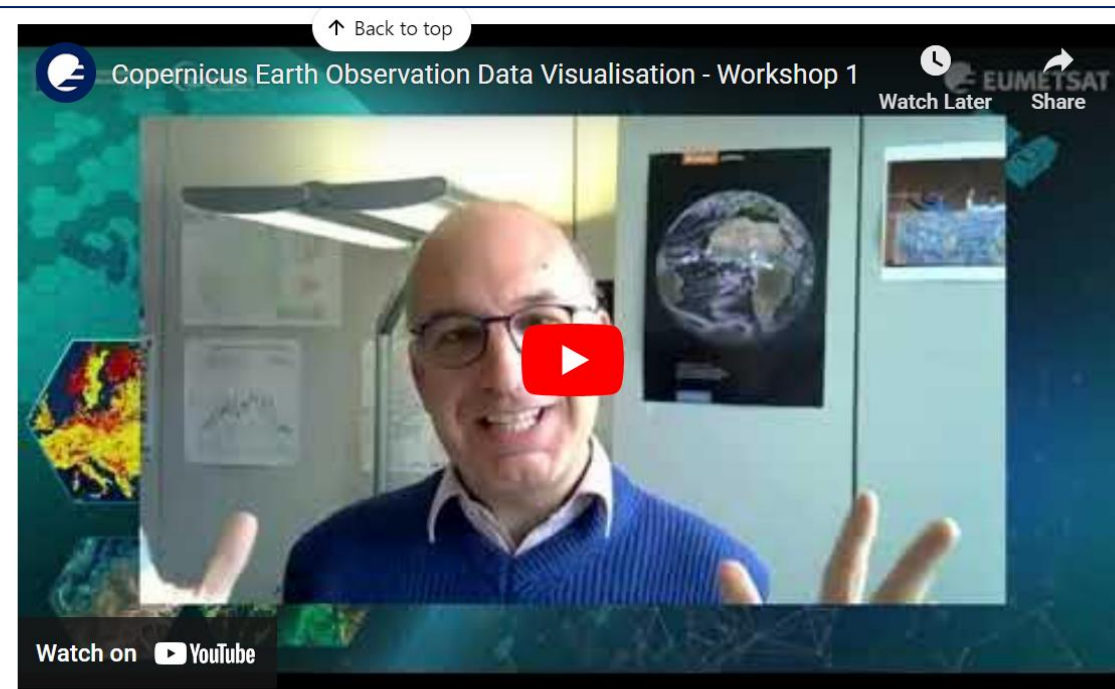
[What can Earth observation observe?](#)

[What makes a visualisation...?](#)

[Access to Earth observation data and tools for](#)



v: latest



Associated slides from the presentation can be found in the designated workshop [git repository](#). You can find links to the individual weeks in the [workshop presentations](#) section.

This guide is a living resource. We welcome contributions from individuals, journalists and any related

Visit - <https://eo-data-vis-good-practice-guide.readthedocs.io/>



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What makes a good environmental story for modern news media? ▼

What can Earth observation observe? ▼

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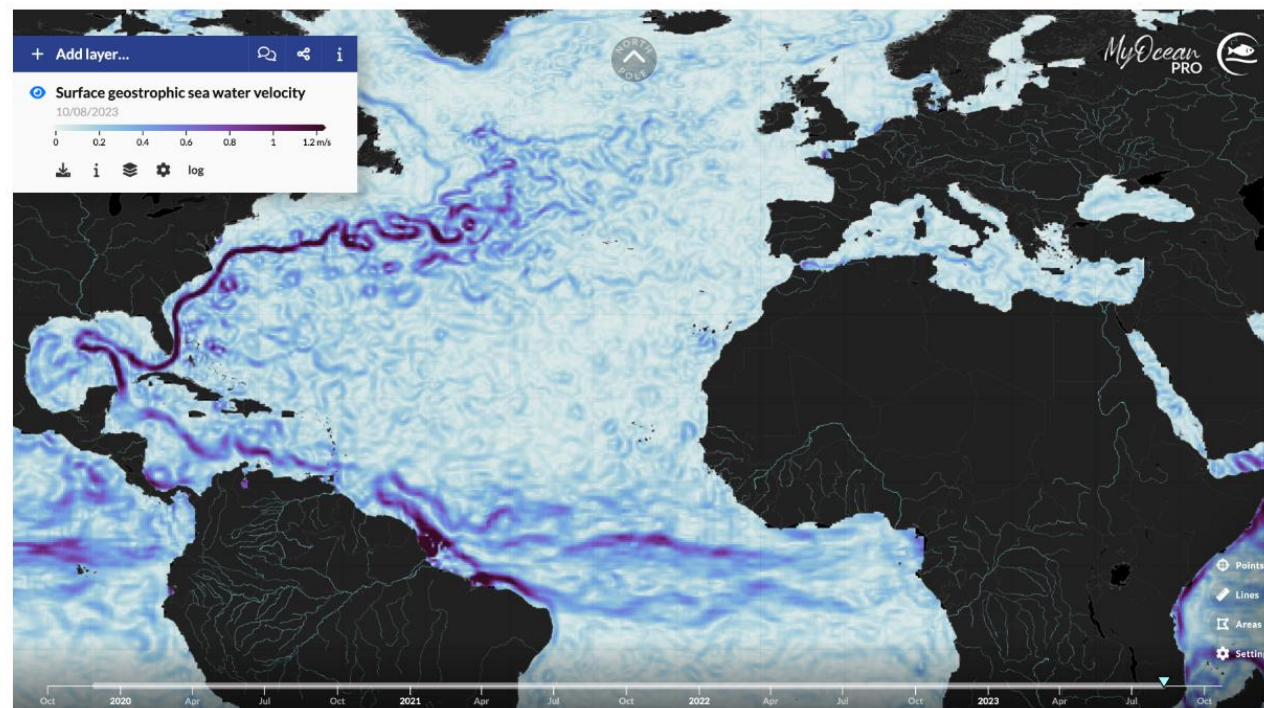
Access to Earth observation data and tools for visualisation ▼

Examples stories and visualisation for different environmental thematics ▲

Air quality and wildfire visualisations

Oceans and sea ice visualisations

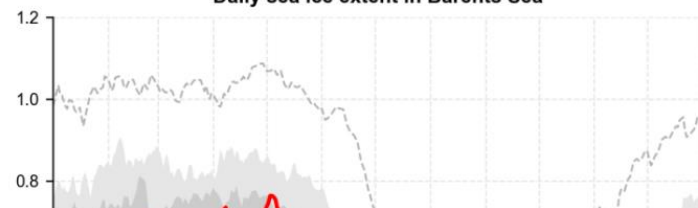
Visualisation platforms such as MyOcean can allow for rapid exploration and visualisation of data.



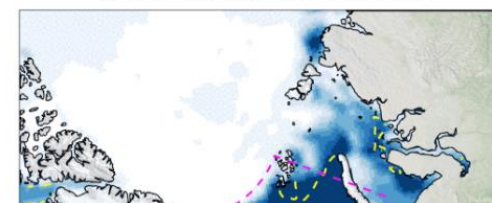
Surface geostrophic velocity product in Arctic and Antarctic sea ice coverage since 1980 (Credit: Copernicus Marine Service).

Many datasets contain variables offering different perspectives on a domain, and can be presented in different ways to provide a more complete picture of a situation.

Daily sea ice extent in Barents Sea



Sea ice concentration in June 2022





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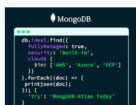
Access to Earth observation data and tools for visualisation

Examples stories and visualisation for different environmental thematic

How can data providers make storytelling easier?

Visualisation Checklist - 10 points to consider

Workshop presentations



Develop and launch modern apps with MongoDB Atlas, a resilient data platform.

Acknowledgements and authors list

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Contributory authors and links to individual **presentations** are below:

- [Aida Alvera-Azcárate](#) - University of Liege, GHER
- [Jonathan Amos](#) - BBC
- [Jason Box](#) - Geological Survey of Denmark and Greenland
- [Vittorio Brando](#) - CNR
- [Samantha Burgess](#) - C3S
- [Cathy Clerbaux](#) - CNRS
- [Giovanni Coppini](#) - CMCC
- [Sienna Cumby](#) - ALSO Space
- [Gary Dagorn](#) - Le Monde
- [Letizia Davoli](#) - TV2000
- [Scott Duncan](#)
- [Alexander Epp](#) - Der Spiegel
- [Hayley Evers-King](#) - EUMETSAT
- [Federico Fierli](#) - EUMETSAT
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- [Daniel Lee](#) - EUMETSAT
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- [Annamaria Luongo](#) - Copernicus Support Office
- [Noemi Marsico](#) - Innoflair UG

Visualisation Checklist - 10 points to consider

Key points to think about when storytelling with Earth observation data

1. Have you made sure that your image/animation is **simple and easy to understand**. If you can, test it with others before releasing it.
2. Does your image have a simple key, scale bar, and where relevant a background map, so that people understand the context and everything is clear in the image or animation?
3. Try to use a colour scheme that is clear and **appropriate for the data shown**.
4. Have you annotated the main features that you want to show e.g., wildfires? Don't assume that it will be obvious to everyone.
5. If you have labels on your image, try to **keep text to a minimum** and **avoid jargon** or specialised technical terms.
6. Can you include additional supporting information, where possible, to back up your image/animation?
7. If possible can you provide links, for instance, links to scenes in online Earth observation data viewers, so that others can recreate your image?
8. Have you made sure that your image/animation will **work with all mobile formats** for social media channels?
9. If it is a single image, would it be better to animate a series of images to make the focus more easy to see and understand?
10. Where possible, try to blend different types of Earth observation data, e.g., infrared or SAR data, as well as true colour imagery if it will help to highlight the focus of your image or animation.



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- Huge interest in data visualisation – media, researchers
- Need for more practical resources – Jupyter notebooks etc
- Lessons to learn for DestinE – big audience
- Need scientists to visualise data and communicate – more credible voices





Thank you!
Questions are welcome.