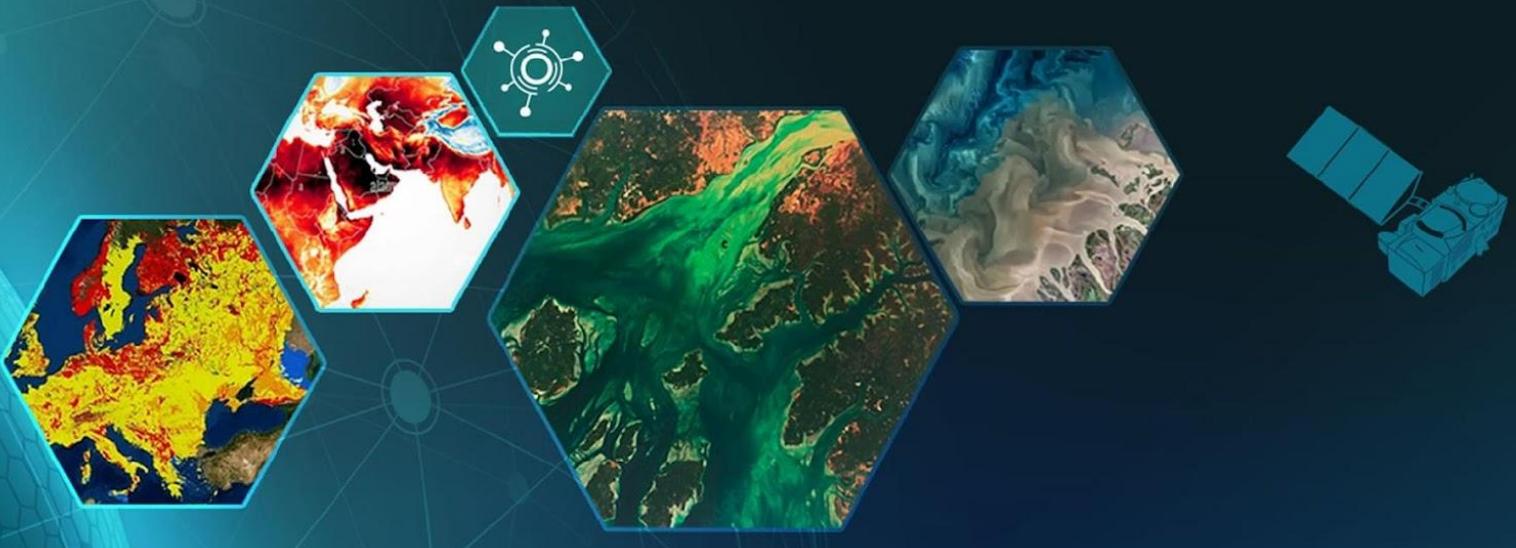


# COPERNICUS EARTH OBSERVATION

## DATA VISUALISATION WORKSHOP SERIES



PROGRAMME OF THE  
EUROPEAN UNION



IMPLEMENTED BY



## Oceans and Sea Ice

Communicating about Sea Ice

Olivier Membrive (Meteo France, EUMETSAT OSI SAF Scientific Communication & Outreach Officer)

The OSI SAF (Ocean and Sea Ice Satellite Application Facility) is the dedicated EUMETSAT centre for processing satellite data at the ocean-atmosphere interface.



# EUMETSAT OSI SAF

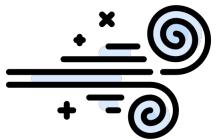
OCEAN AND SEA ICE



Royal Netherlands  
Meteorological Institute  
*Ministry of Infrastructure and the  
Environment*

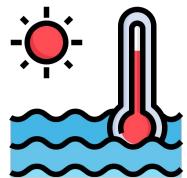


Copernicus Earth Observation  
Data Visualisation Workshop Series  
Oceans & Sea Ice



## Sea Surface Winds

- ❖ *Speed and Direction*



## Sea Surface Temperature

- ❖ *Surface temperature*



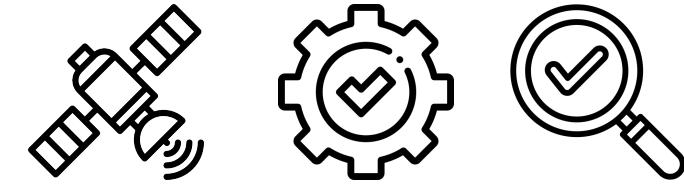
## Sea Ice Parameters

- ❖ *Concentration, Edge, Type, Emissivity, Drift*
- ❖ *IST - Sea Ice Surface Temperature*



## Radiative fluxes

- ❖ *Downward longwave irradiance*
- ❖ *Surface solar irradiance*



***Operational and  
quality controlled  
products***





At both poles



## Sea Ice Products

- Near real time
- Climate data records

- Sea Ice Concentration
- Sea Ice Edge
- Sea Ice Drift
- Sea Ice Type
- Sea Ice Emissivity
- Ice Surface Temperature

## Satellites

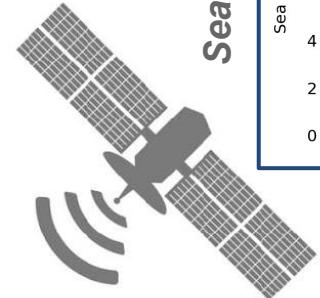
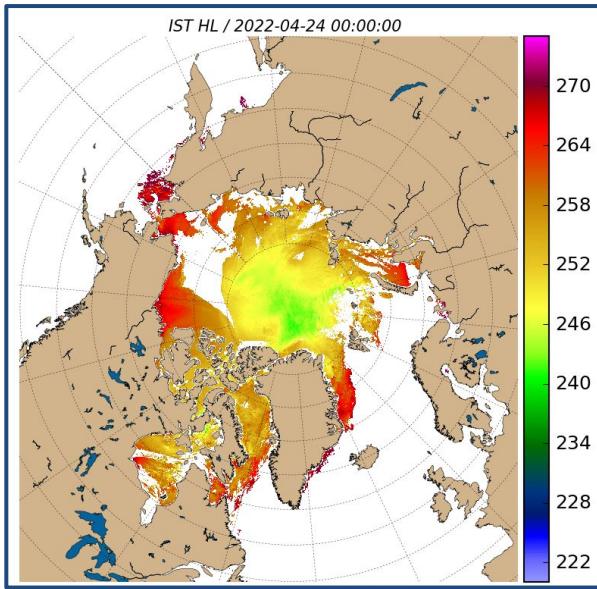
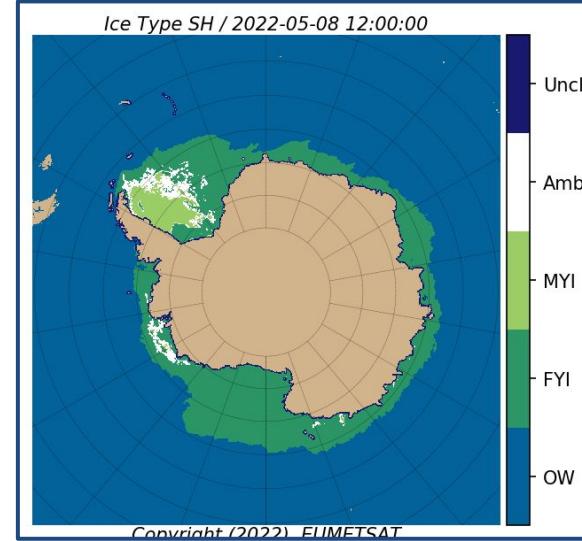
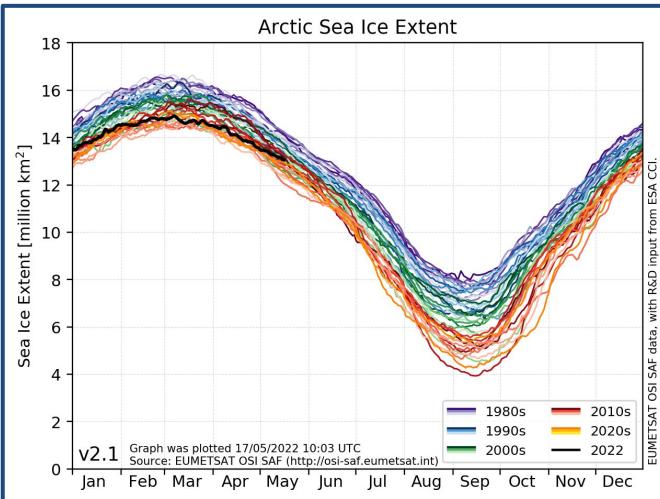
- DMSP/SSMIS + GCOM2/AMSR2, Metop/ASCAT

## Continuity with:

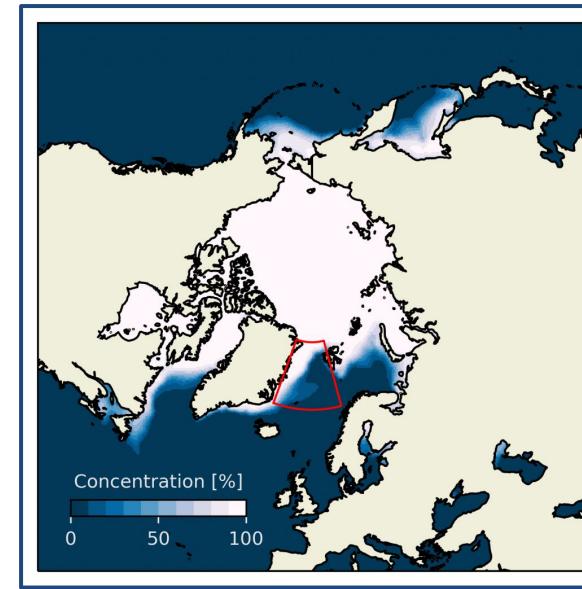
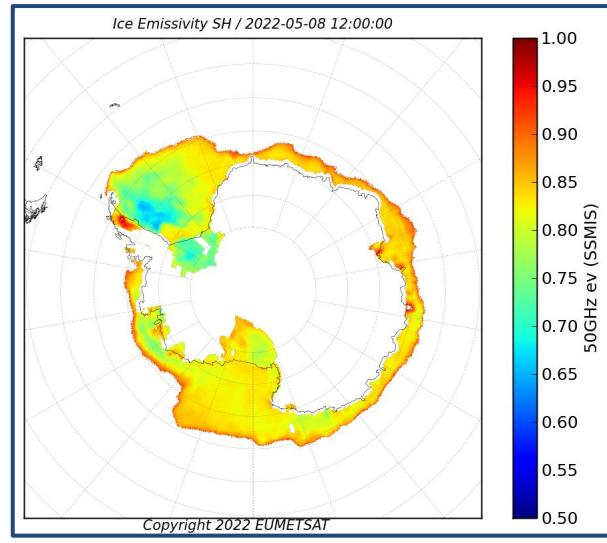
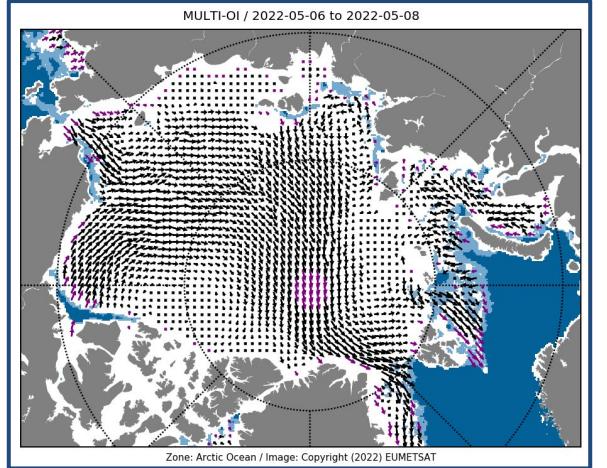
- (MWRI), Metop-SG-B/SCA and MWI

## New foreseen products

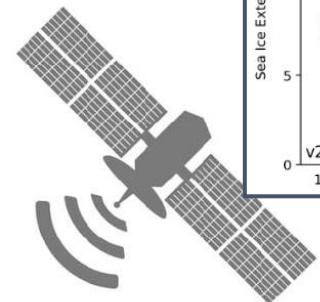
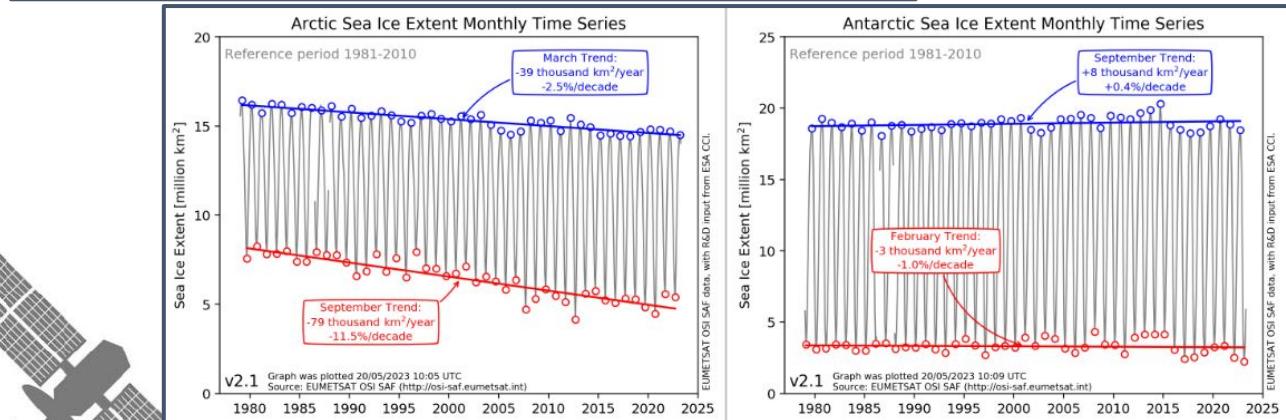
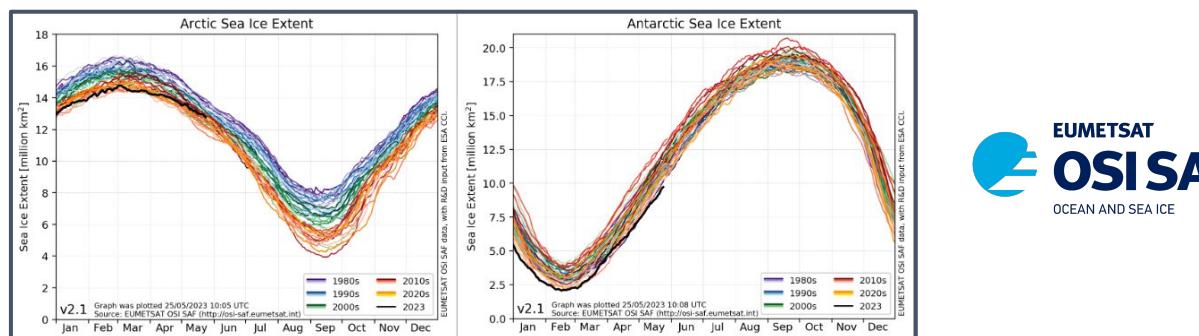
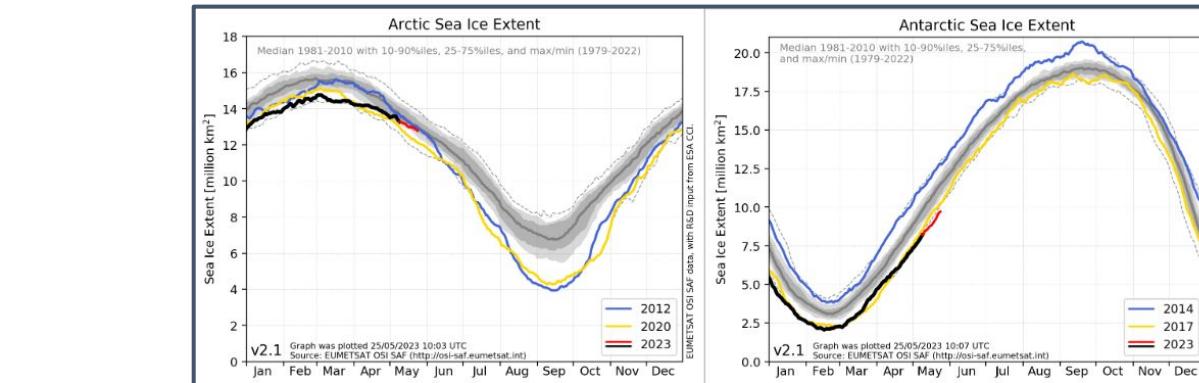
- Sea Ice Age
- Sea Ice Index
- Icebergs


*Ice surface temperature*

*Sea Ice Type*

*Sea Ice Extent*


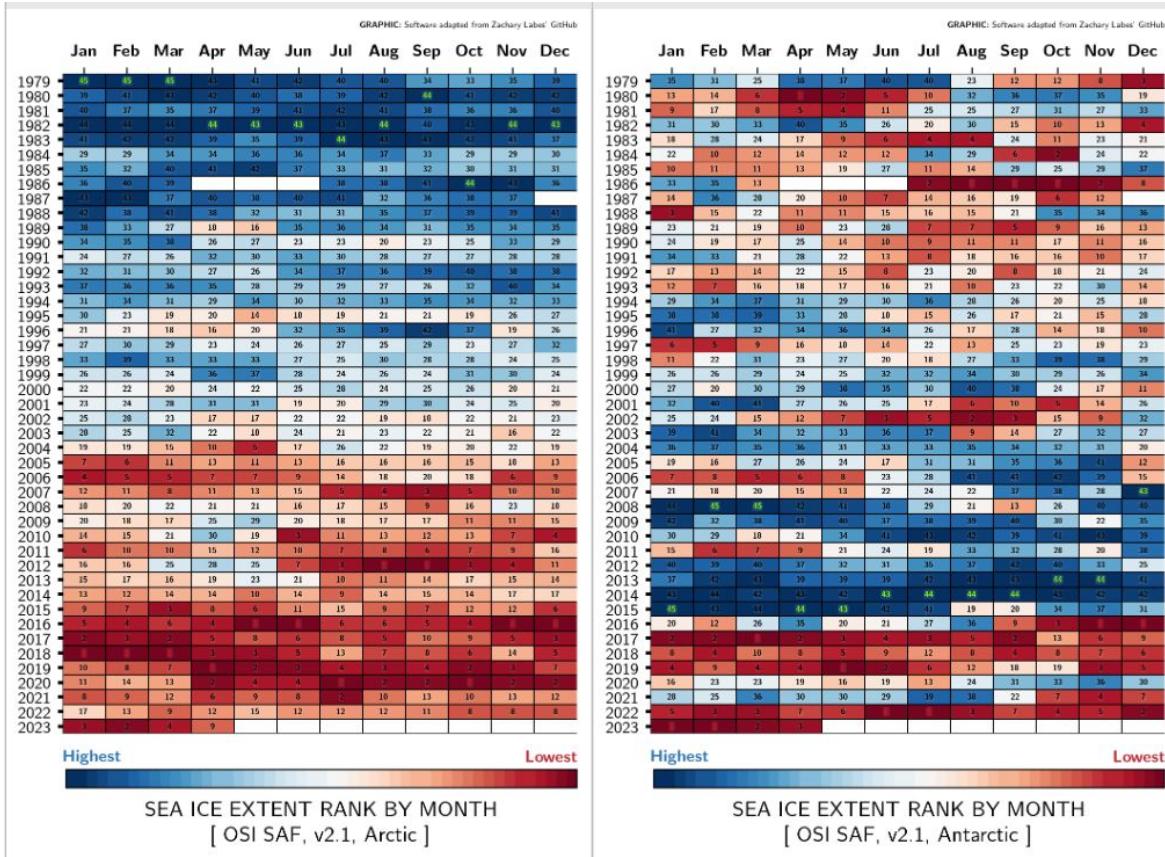
# #EOData4Storytelling


*Sea Ice Concentration*

*Ice Emissivity*

*Sea Ice Drift*


**Copernicus Earth Observation  
Data Visualisation Workshop Series  
Oceans & Sea Ice**



## Different visualisations of the same information



<https://osisaf-hl.met.no/v2p1-sea-ice-index>

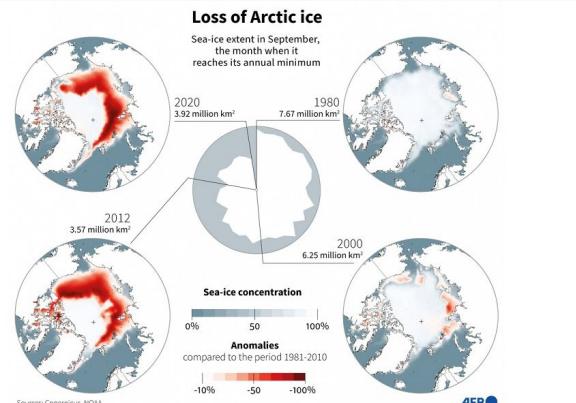
# Copernicus Earth Observation Data Visualisation Workshop Series

## Oceans & Sea Ice



<https://osi-saf.eumetsat.int/>

<https://osi-saf.eumetsat.int/community/stories>

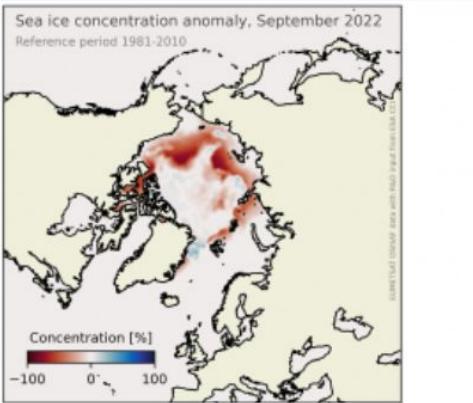


**Loss of Arctic ice**  
Sea-ice extent in September, the month when it reaches its annual minimum

Year	Extent (million km²)
1980	7.67 million km²
2000	6.25 million km²
2012	3.57 million km²
2020	3.92 million km²

Sea-ice concentration  
Anomalies compared to the period 1981-2010  
-10% -50 -100%

Sources: Copernicus, NOAA



Sea ice concentration anomaly, September 2022  
Reference period 1981-2010

Concentration [%]  
-100 -50 0 50 100

Debunking false claims about sea ice

19/10/2022

Status of the sea ice at both poles – September 2022

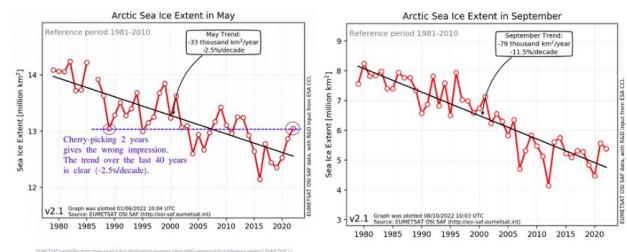
11/10/2022



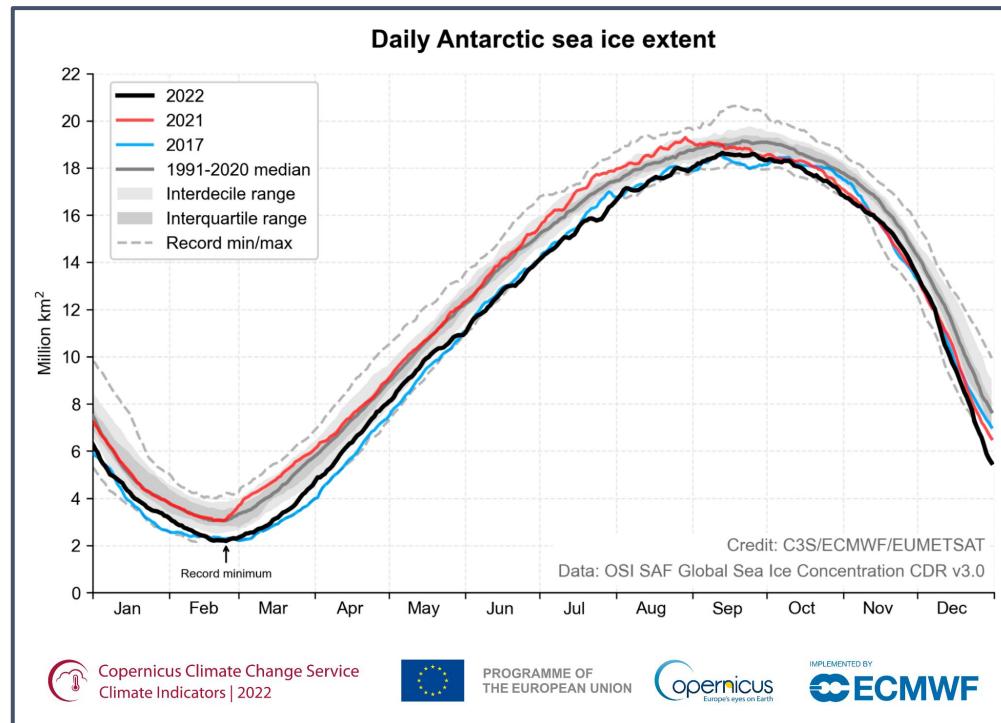
### OSI SAF climate data records show a decline in Arctic sea ice

May 1989, for example, saw less Arctic ice than average, and May 2022 had more than average for those periods. To measure the impact of global warming on sea ice, we calculate the percentage change in its extent and volume compared to the average for a reference period of 30 years -- in this case, 1981 to 2010. Cherry-picking two years gives a wrong interpretation of the trend measured in the climate data record of OSI SAF sea-ice data.

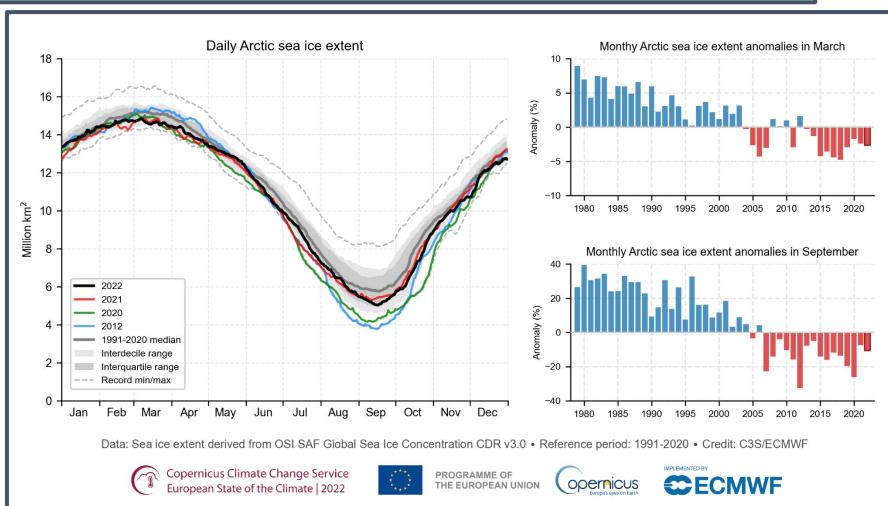
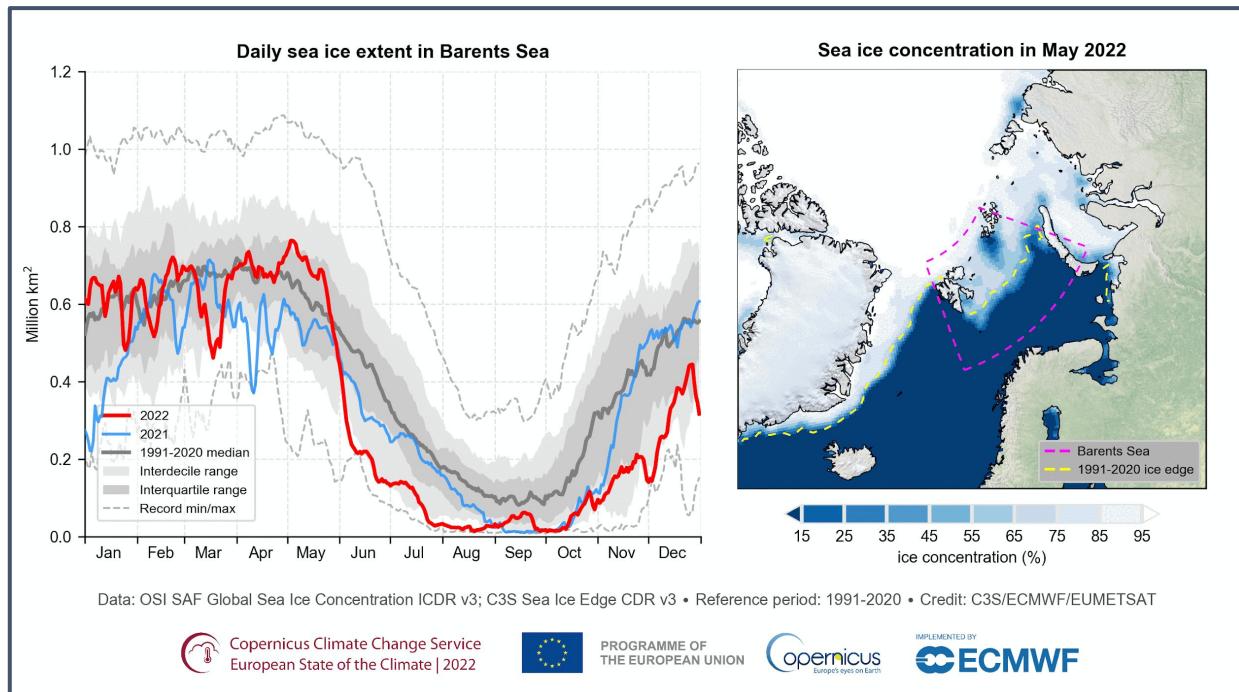
The trend over the last 40 years is clear : May trend : -2.5%/decade, September trend: -11.5%/decade. The decline is more pronounced in summer (September) than in winter (March) as shown by several satellite products that cover the last 40 years.



Copernicus Earth Observation  
Data Visualisation Workshop Series  
Oceans & Sea Ice



## C3S - European State of Climate Reports - Data distribution



Climate  
Change  
Service

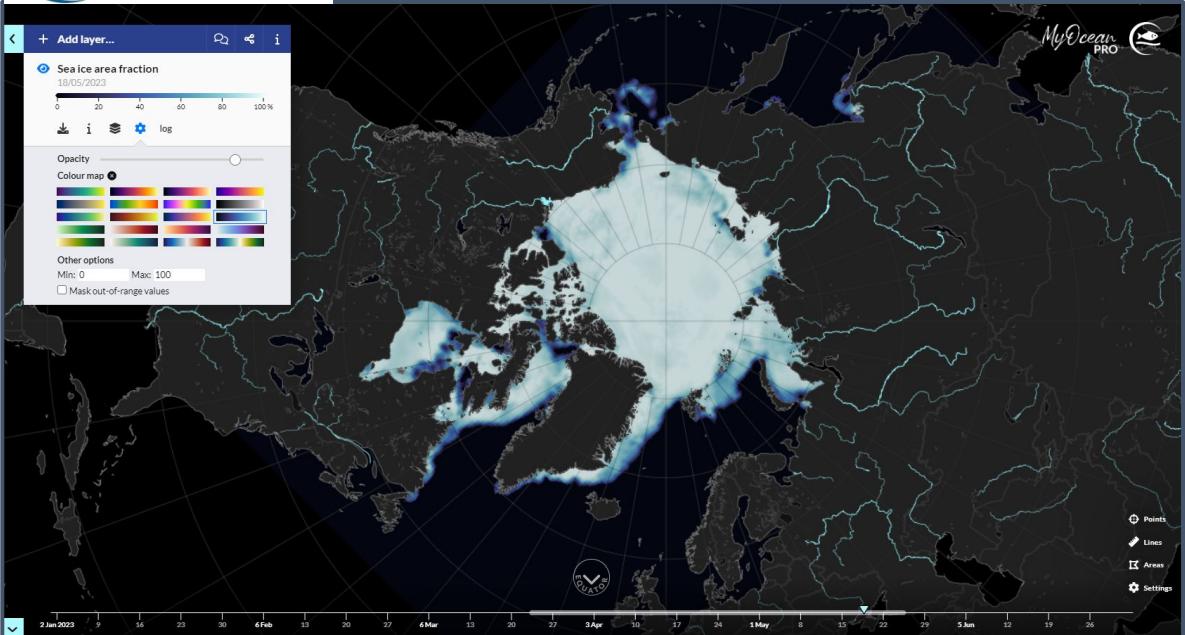
climate.copernicus.eu

<https://climate.copernicus.eu/esotc/2022/ocean>  
<https://climate.copernicus.eu/esotc/2022/globe-in-2022>

**Copernicus Earth Observation  
Data Visualisation Workshop Series  
Oceans & Sea Ice**



## Visualisation Tools - Data redistribution



<https://data.marine.copernicus.eu/viewer/>

## Contributions to the Ocean State Report

<https://marine.copernicus.eu/access-data/ocean-state-report/ocean-state-report-6>



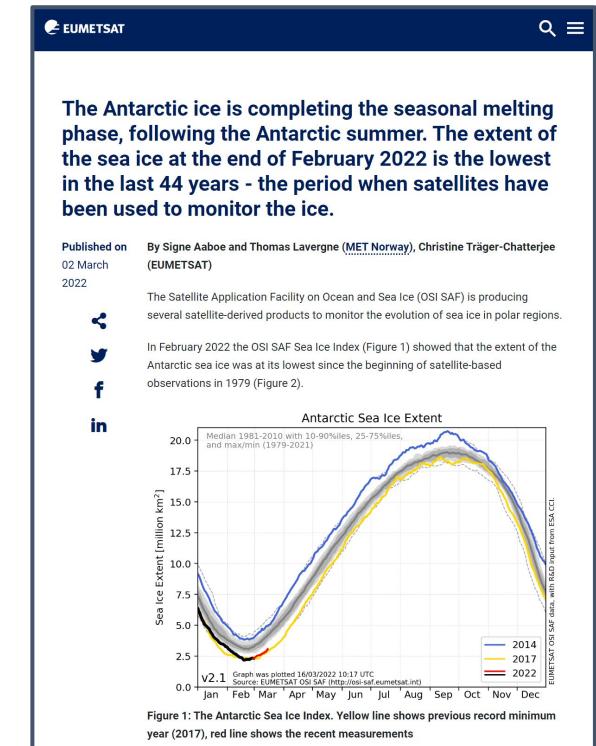
## Case Studies

<https://www.eumetsat.int/case-studies>

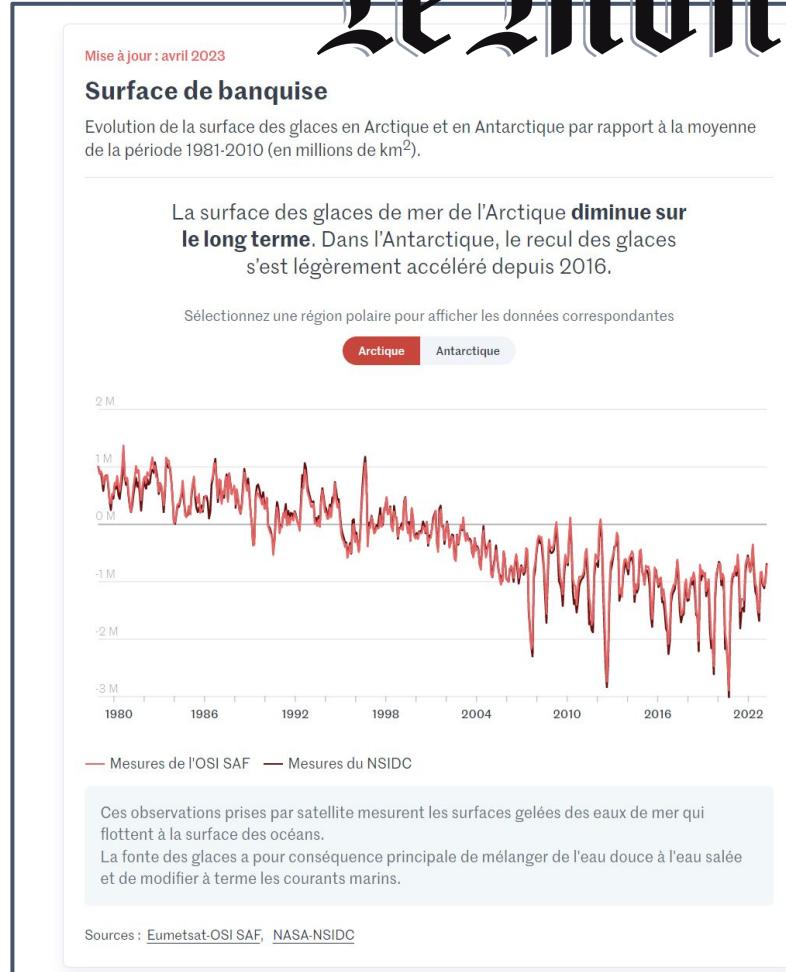
<https://www.eumetsat.int/antarctic-sea-ice-long-term-minimum>



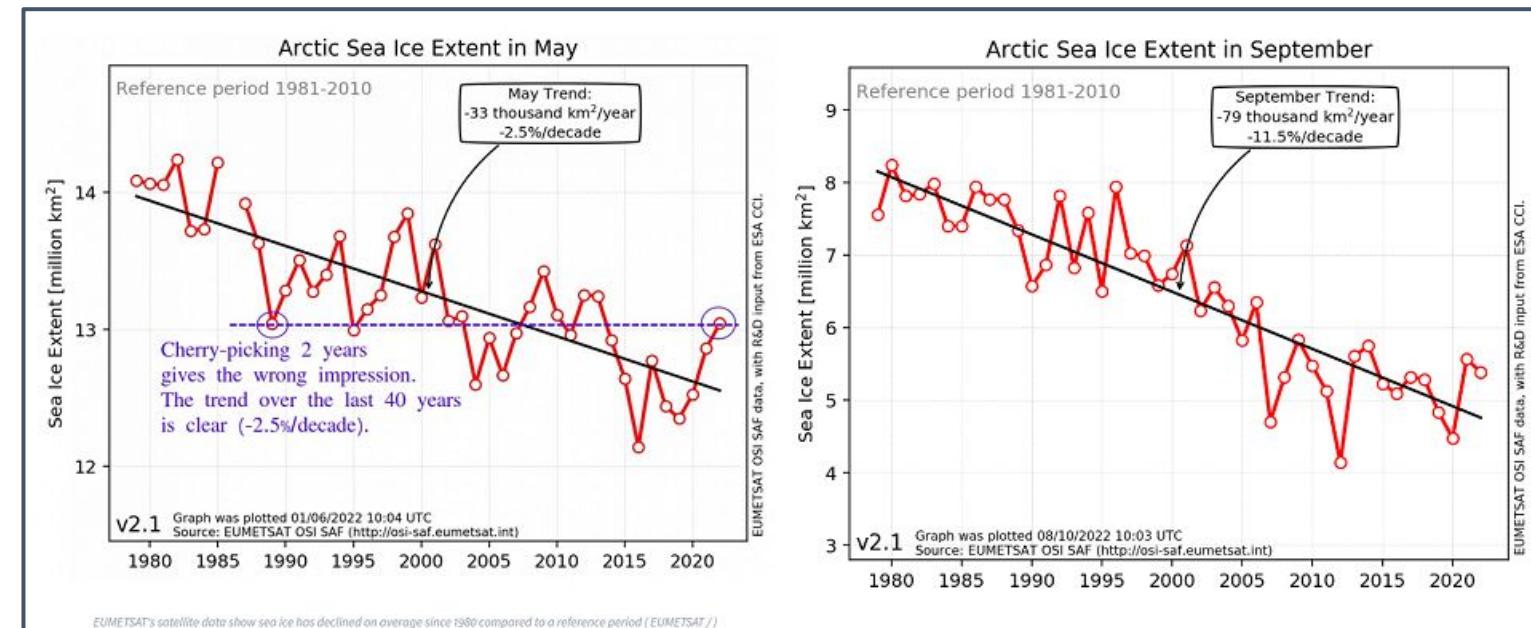
EUMETSAT website interface showing the top ten case studies for 2022. The page features a search bar and navigation icons. Below the header, a section titled 'Top ten case studies for 2022' is displayed, followed by a photograph of a coastal landscape with a body of water.



**Copernicus Earth Observation  
Data Visualisation Workshop Series  
Oceans & Sea Ice**



### Media Use of Data



<https://factcheck.afp.com/doc.afp.com.32AB8TN>

[https://www.lemonde.fr/les-decodeurs/article/2023/04/28/neuf-indicateurs-pour-mesurer-l-urgence-climatique\\_6148399\\_4355771.html](https://www.lemonde.fr/les-decodeurs/article/2023/04/28/neuf-indicateurs-pour-mesurer-l-urgence-climatique_6148399_4355771.html)



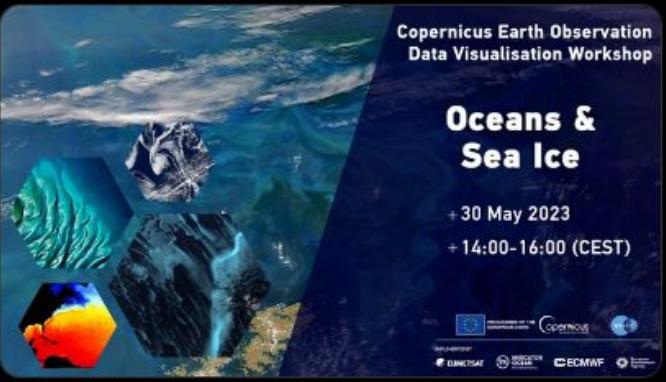
Copernicus Earth Observation  
Data Visualisation Workshop Series  
Oceans & Sea Ice

Quoi de neuf ?!

 Tweeter

Voir 105 Tweets

**EUMETSAT @eumetsat · 1h**  
 ⚠️ Don't miss out on our 'Oceans & Sea Ice' 🌊 workshop today! Learn how to access and use #Copernicus #OceanData for storytelling, and hear from world-class experts on using this data to report on the challenges the ocean faces 🌊 Still time to register 🎟️ [eodata4storytelling.eu](https://eodata4storytelling.eu)



14 15 3 708

**Thomas Lavergne @lavergnetho · 25 mai**  
 🔈 We just released a 30-years data record of global #Sealice concentration with 12.5 km grid spacing !

It is an enhanced-resolution version of the #OSISAF #Sealice data.

Find the data on the [@esacimate](#) data portal, and let us know what you think.

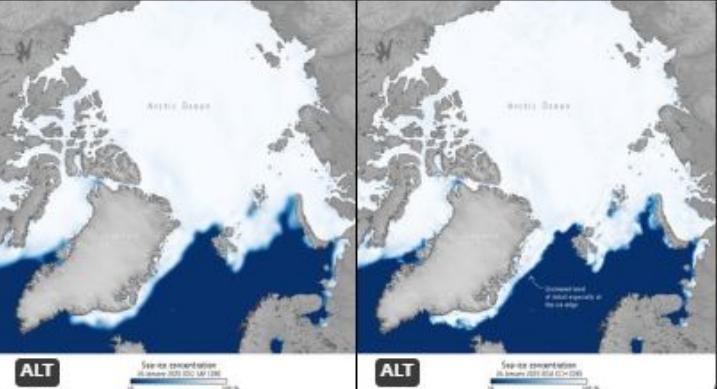
👉 [catalogue.ceda.ac.uk/uuid/eade27004...](https://catalogue.ceda.ac.uk/uuid/eade27004...)

**ESA Climate Office @esacimate · 25 mai**  
 NEW: The Sea ice satellite record is now sharper than ever thanks to our project team led by @lavergnetho of @Meteorologisk

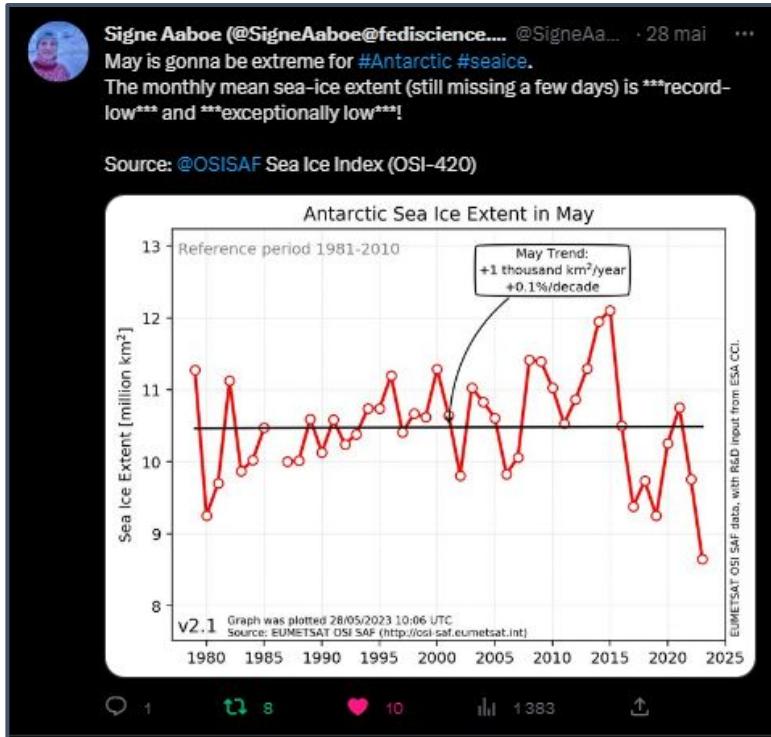
[esa.int/Applications/O...](https://esa.int/Applications/O...)

Can you see the difference (hint: see the detail at the edges?) 1/7

Afficher cette discussion



3 9 37 2 856



## Most active experts

[@SigneAaboe](#)

[@lavergnetho](#)

Copernicus Earth Observation  
Data Visualisation Workshop Series  
Oceans & Sea Ice



Follow  
[@OSISAF](#)



**Access our data, stay informed :**  
Register on <https://osi-saf.eumetsat.int>

**Products**

- NetCDF format

**Access means**

- FTP access
- EUMETCast / EUMETSAT Data Centre and Store
- Thredds

**Redistribution**

- Copernicus
  - Marine and Climate Change Service
- NASA PODAAC

Copernicus Earth Observation  
Data Visualisation Workshop Series  
Oceans & Sea Ice

## Ocean Training

Group ID: 851

This group contains various projects where you can learn about ocean satellite data and how to use it.

[Subgroups and projects](#)   [Shared projects](#)   [Archived projects](#)

&gt; 8 A applications

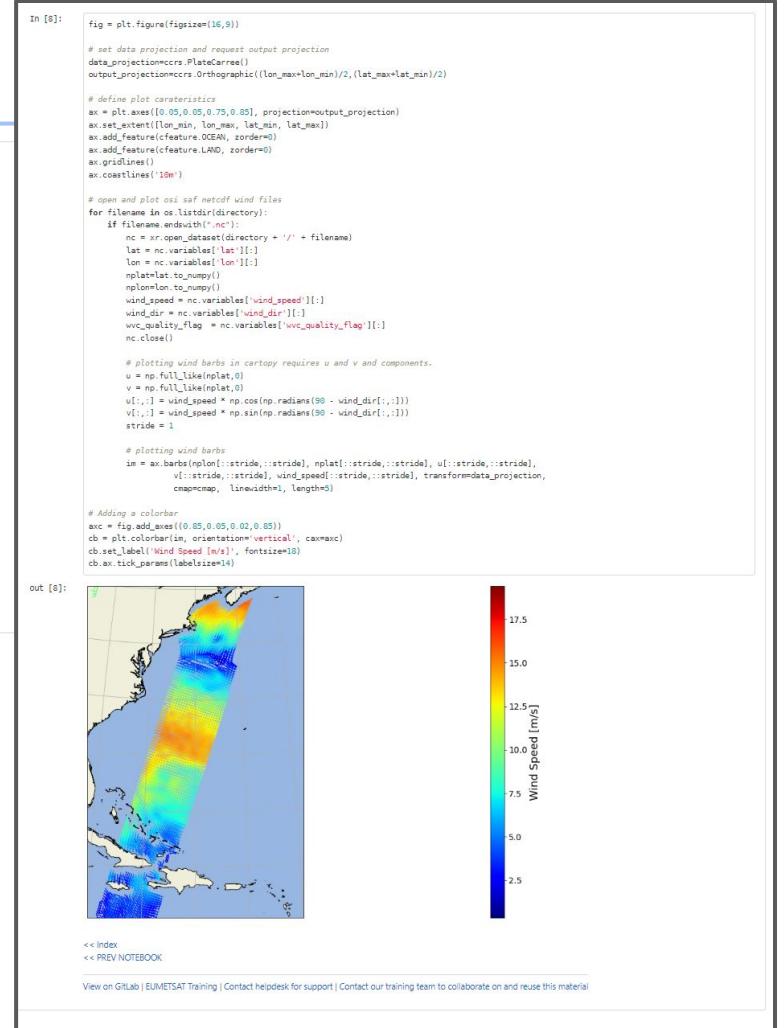
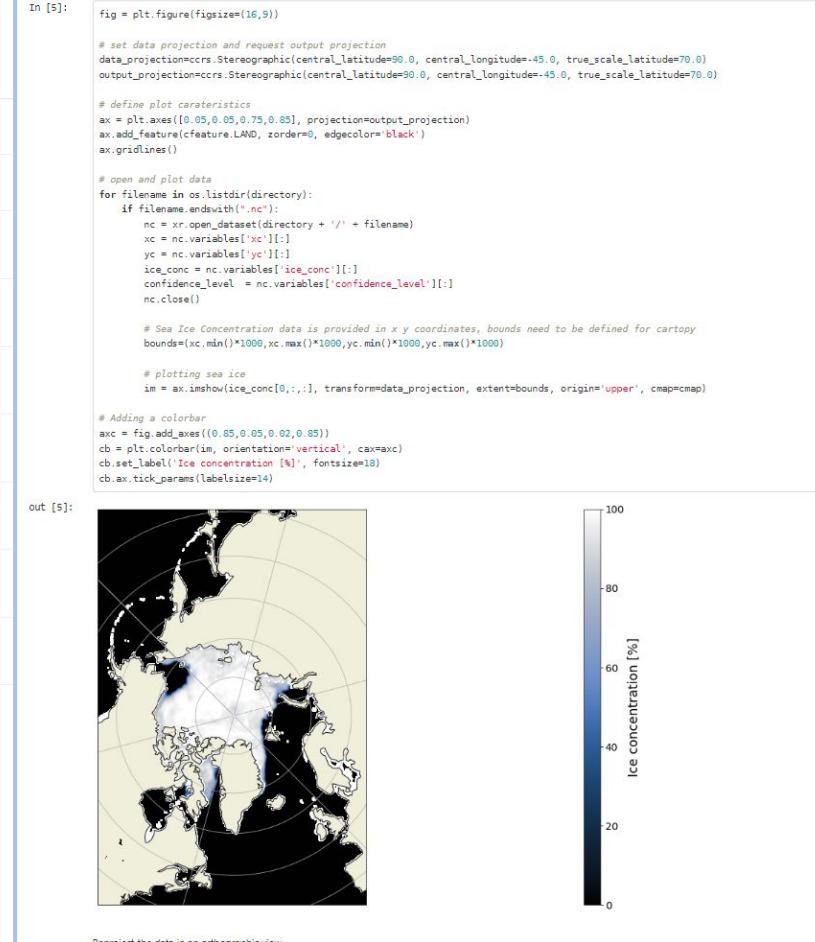
&lt; 8 S sensors

-  **learn-olci** ★ 0  
Repository for all training content associated with the Copernicus Sentinel-3 OLCI s...
-  **learn-osi-saf-sea-ice** ★ 0  
Repository for all training content associated with EUMETSAT Ocean and Sea Ice Sa...
-  **learn-osi-saf-sst** ★ 0  
Repository for all training content associated with EUMETSAT Ocean and Sea Ice Sa...
-  **learn-osi-saf-wind** ★ 0  
Repository for all training content associated with EUMETSAT Ocean and Sea Ice Sa...
-  **learn-s6** ★ 0  
Repository for all training content associated with the Copernicus Sentinel-6 Posei...
-  **learn-slstr** ★ 0  
Repository for all training content associated with the Copernicus Sentinel-3 SLSTR...
-  **learn-sral** ★ 0  
Repository for all training content associated with the Copernicus Sentinel-3 SRAL ...

&gt; 8 T tools


<https://gitlab.eumetsat.int/eumetlab/oceans>

<https://osi-saf.eumetsat.int/community/stories/online-training-jupyter-notebooks>



**Copernicus Earth Observation  
Data Visualisation Workshop Series  
Oceans & Sea Ice**



## Stories

- ❖ *Regular news*



## Social Media

- ❖ *Twitter feed & user support*



## Newsletter



## Training activities

- ❖ *Webinar & short courses*
- ❖ *Development of notebooks*

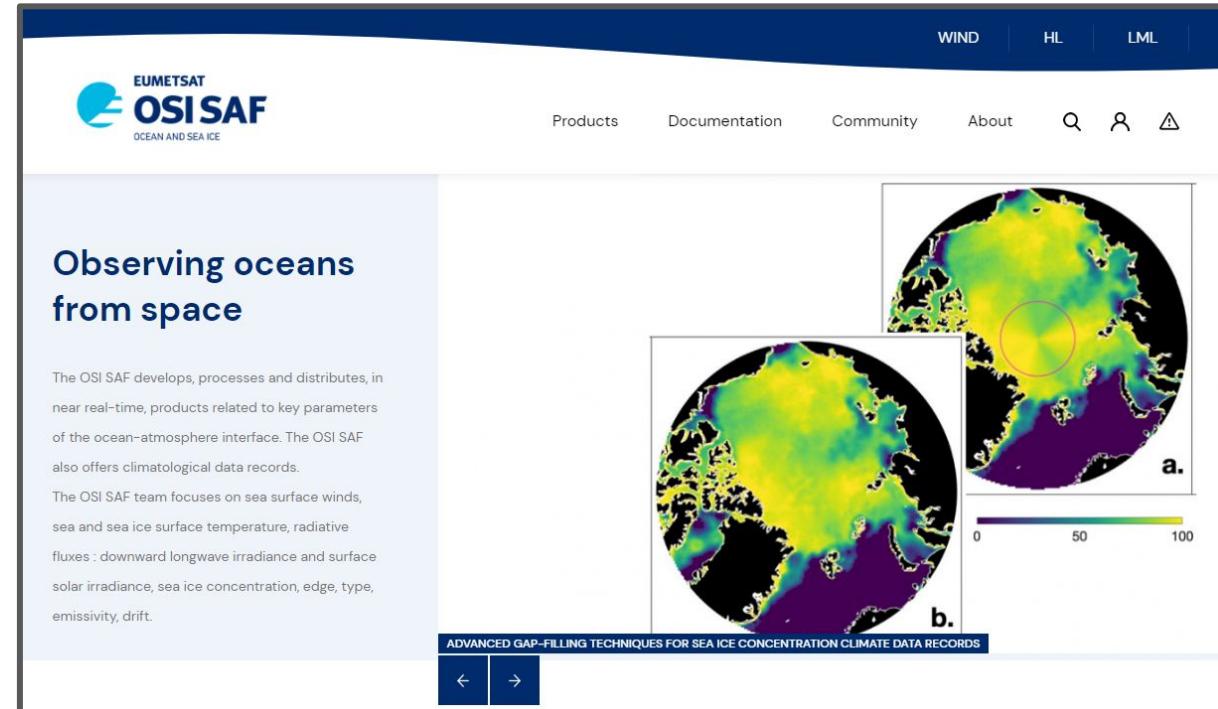
## Contacts

[olivier.membrive@meteo.fr](mailto:olivier.membrive@meteo.fr)  
[osi-saf.helpdesk@meteo.fr](mailto:osi-saf.helpdesk@meteo.fr)



**Stay in touch, register**

<https://osi-saf.eumetsat.int/>



Copernicus Earth Observation  
Data Visualisation Workshop Series  
Oceans & Sea Ice



PROGRAMME OF THE  
EUROPEAN UNION

**Copernicus**  
Europe's eyes on Earth



---

IMPLEMENTED BY

