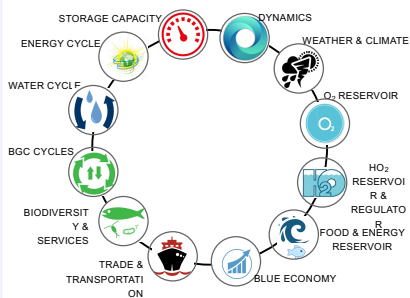


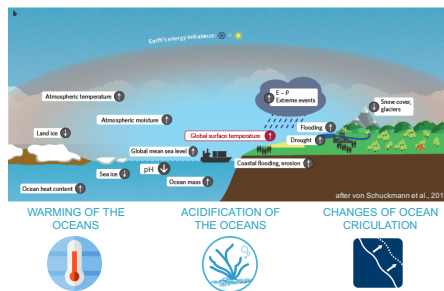
# Ocean reporting activities of the Copernicus Marine Environment Monitoring Service

von Schuckmann, Karina<sup>1</sup>, Drevillon, Marie<sup>1</sup>, Le Traon, Pierre-Yves<sup>1</sup>, Drillet, Yann<sup>1</sup>  
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## THE WORLD OCEANS DRIVE GLOBAL & REGIONAL SYSTEMS



## GLOBAL WARMING: PRESSURE ON THE MARINE ENVIRONMENT



## INCREASING OCEAN MONITORING NEEDS

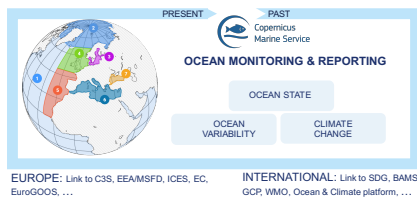


The Copernicus Marine Service ocean reporting provides a comprehensive and state-of-the-art assessment of the state of the global ocean and European regional seas for the ocean scientific community as well as for policy and decision makers. It will contribute to the reporting tasks and activities of European environmental agencies (e.g. EEA) and international organizations (e.g. IPCC, UN SDGs 13 & 14). In addition, the report aims at increasing general public awareness about the status of, and changes in, the marine environment.

## COPERNICUS MARINE SERVICE MONITORING & REPORTING:

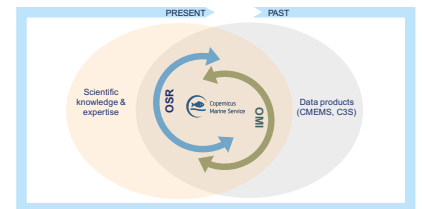
### OBJECTIVE

Develop a fundamental source of CMEMS value-added information and indicators for the monitoring & reporting of the European regional seas and the global ocean state, variability and change from the past to the present.



### TOOLS

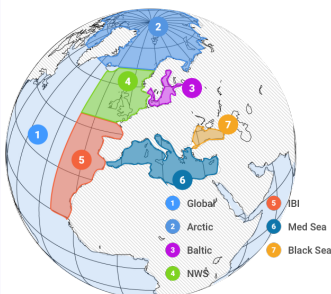
- I. Regular release of the peer-reviewed CMEMS Ocean State Report containing a state-of-the-art value-added synthesis of the ocean state, variability and change from the past to present
- II. Ocean Monitoring Indicators and related operational framework on the CMEMS web portal.



## THE COPERNICUS MARINE SERVICE OCEAN STATE REPORT

The Copernicus Marine Environment Monitoring Service (CMEMS) Ocean State Report provides a comprehensive and state-of-the-art assessment of the state of the global ocean and European regional seas

The Ocean State Report draws on expert analysis and provides a 4-D view (reanalysis systems), from above (through remote sensing data) and directly from the interior (in situ measurements) of the blue, white and green ocean.



Use of Copernicus Marine Environment Monitoring Service products from ocean reanalysis, direct observations (in situ) and remote sensing data.



**BLUE OCEAN**  
(e.g. hydrography, currents)

**WHITE OCEAN**  
(e.g. sea ice)

**GREEN OCEAN**  
(e.g. chlorophyll, oxygen)

Scientific integrity is assured through the process of independent peer review in collaboration with the Journal of Operational Oceanography and IMAREST.



- ❖ Current collaboration of more than 100 scientific experts from more than 25 different European institutions
- ❖ Fundamental step forward into the development of regular Copernicus Marine Service regular reporting

### ISSUE #1 & #2:

- ❖ Published in the Journal of Operational Oceanography (JOO): Open access
- ❖ Summary for policy makers
- ❖ Mentioned as Copernicus achievement 2017
- ❖ Chair & team medal award
- ❖ More than 7500 views since publication

### ISSUE #3:

- ❖ Accepted in the Journal of Operational Oceanography

### ISSUE #4:

- ❖ In preparation: submission to the Journal of Operational Oceanography in Q2 2019.

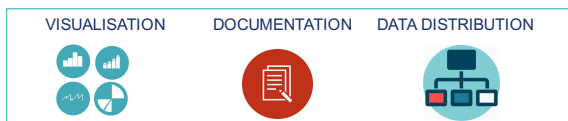
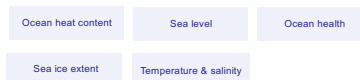


More information: <http://marine.copernicus.eu/science-learning/ocean-state-report/>

## THE COPERNICUS MARINE SERVICE OCEAN MONITORING INDICATORS

The Copernicus Marine Service Ocean Monitoring Indicators are the fundamental baseline for regular monitoring to inform on the status and health of the Marine Environment of the global ocean and the European regional seas. The are up-dated on a regular frequency and deliver information from the past to the real time.

### Current available CMEMS Ocean Monitoring Indicators

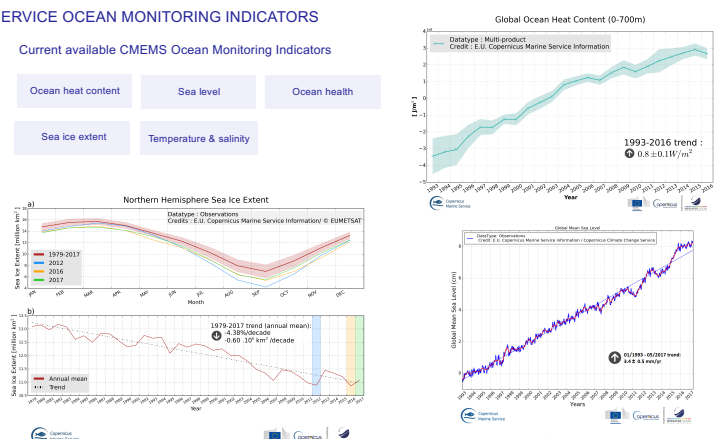


The Copernicus Ocean Monitoring Indicator "package" includes

- ✓ A high quality visualization
- ✓ A set of documentation, including a scientific context and main results, information on the indicator quality and on the products used for its development
- ✓ The numerical values in netcdf format

All elements can be downloaded are integrated in the CMEMS catalogue

More information: <http://marine.copernicus.eu/science-learning/ocean-monitoring-indicators/>



Next release of additional indicators: July 2019