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*Supplement of*

## **The state of the ocean in the northeastern Atlantic and adjacent seas**

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# Product Tables

## Sea surface temperature (global and regional sections)

Product ref. No.	Product ID and type	Data access	Documentation
SST.1	SST_GLO_SST_L4_REP_OBSERVATIONS_010_011 (OSTIA), satellite observations	EU Copernicus Marine Service Product (2023a)	Quality Information Document (QUID): Worsfold et al. (2023) Product User Manual (PUM): Worsfold et al. (2022)
SST.2	SST_GLO_SST_L4_NRT_OBSERVATIONS_010_001 (OSTIA-NRT), satellite observations	EU Copernicus Marine Service Product (2023b)	QUID: Briand et al. (2023) PUM: Martin et al. (2023)
SST.3	SST_GLO_SST_L4_REP_OBSERVATIONS_010_024 (ESA-CCI), satellite observations	EU Copernicus Marine Service Product (2021a)	QUID: Good (2021) PUM: Good (2022)
SST.4	Optimum Interpolation Sea Surface Temperature (OISST), satellite observations	Huang et al. (2020)	Banzon et al. (2016)
SST.5	Multivariate El Niño/Southern Oscillation Index Version 2 (MEI.v2), climate index	MEI.v2 (2024)	MEI.v2 (2024)
SST.6	OMI_CLIMATE_SST_NORTHWESTSHELF_area_averaged_anomalies, satellite observations	EU Copernicus Marine Service Product (2023c)	QUID: Autret (2023a) PUM : Autret (2023b)
SST.7	OMI_CLIMATE_SST_IBI_area_averaged_anomalies, satellite observations	EU Copernicus Marine Service Product (2023d)	QUID : Autret (2023c) PUM : Autret (2023d)
SST.8	OMI_CLIMATE_SST_BAL_area_averaged_anomalies, satellite observations	EU Copernicus Marine Service Product (2023e)	QUID : Karagali et al. (2023a) PUM : Karagali et al. (2023b)
SST.9	MEDSEA_OMI_TEMP_SAL_sst_area_averaged_anomalies, satellite observations	EU Copernicus Marine Service Product (2022a)	QUID : Pisano et al. (2022a) PUM : Pisano et al. (2022b)
SST.10	BLKSEA_OMI_TEMP_SAL_sst_area_averaged_anomalies, satellite observations	EU Copernicus Marine Service Product (2022b)	QUID : Pisano et al. (2022c) PUM : Pisano et al. (2022d)

## Ocean heat content (global and regional sections)

Product ref. No.	Product ID and type	Data access	Documentation
OHC.1	Institute of Atmospheric Physics (IAP) ocean subsurface temperature, in-situ observations	(IAP, 2024)	(Cheng et al., 2017; Cheng & Zhu, 2016)
OHC.2	NOAA/NESDIS/NCEI Ocean Climate Laboratory, temperature anomaly fields, in-situ observations	(NOAA, 2024)	(Levitus et al., 2012)
OHC.3	INSITU_GLO_PHY_TS_OA_MY_013_052 (CORA gridded), in-situ observations	EU Copernicus Marine Service Product (2023f)	QUID : Szekely (2023a) PUM : Szekely (2023b)
OHC.4	EN.4.2.2.c14	( <i>Met Office Hadley Centre Observations Datasets</i> , n.d.)	(Cheng et al., 2014; Good et al., 2013; Gouretski & Cheng, 2020)
OHC.5		(Minière et al., 2023)	(Minière et al., 2023)
OHC.6	GCOS Global Ocean Heat Content, in-situ observations, satellite observations and numerical models	(von Schuckmann et al., 2023)	(Von Schuckmann et al., 2023)
OHC.7	GLOBAL_OMI_OHC_area_averaged_anomalies_0_2000, numerical models	EU Copernicus Marine Service Product (2021b)	QUID : von Schuckmann et al. (2021) PUM : Monier et al. (2021)
OHC.8	GLOBAL_REANALYSIS_PHY_001_031 (GREP), numerical models	EU Copernicus Marine Service Product (2023g)	QUID : Desportes et al. (2023) PUM : Gounou et al. (2023)
OHC.9	BALTIC_OMI_OHC_area_averaged_anomalies, numerical models	EU Copernicus Marine Service Product (2023h)	QUID : Raudsepp et al. (2023a) PUM : Maljutenko et al. (2023a)

OHC.10	OMI_CLIMATE_OHC_BLKSEA_area_averaged_anomalies, numerical models and in-situ observations	EU Copernicus Marine Service Product (2023i)	QUID : Lima et al. (2023) PUM : Lima and Lecci (2023)
OHC.11	MEDSEA_OMI_OHC_area_averaged_anomalies, numerical models and in-situ observations	EU Copernicus Marine Service Product (2022c)	QUID : Lyubartsev et al. (2023) PUM : Lyubartsev and Clementi (2023)
OHC.12	OMI_CLIMATE_OHC_IBI_area_averaged_anomalies, in-situ observations and numerical models	EU Copernicus Marine Service Product (2023j)	QUID : de Pascual et al. (2023X) PUM : de Pascual et al. (2022X)

## Sea level (global and regional sections)

Product ref. No.	Product ID and type	Data access	Documentation
SL.1	GLOBAL_OMI_SL_area_averaged_anomalies, satellite observations	EU Copernicus Marine Service Product (2023k)	QUID : Veillard et al. (2023a) PUM : Taburet (2023a)
SL.2	GLOBAL_OMI_SL_regional_trends, satellite observations	EU Copernicus Marine Service Product (2023l)	QUID : Veillard et al. (2023b) PUM : Taburet (2023b)
SL.3	NORTHWESTSHELF_OMI_SL_area_averaged_anomalies, satellite observations	EU Copernicus Marine Service Product (2023m)	QUID : Veillard et al. (2023c) PUM : Taburet (2023c)
SL.4	IBI_OMI_SL_area_averaged_anomalies, satellite observations	EU Copernicus Marine Service Product (2023n)	QUID : Veillard et al. (2023d) PUM : Taburet (2023d)
SL.5	BALTIC_OMI_SL_area_averaged_anomalies, satellite observations	EU Copernicus Marine Service Product (2023o)	QUID : Veillard et al. (2023e) PUM : Taburet (2023e)
SL.6	MEDSEA_OMI_SL_area_averaged_anomalies, satellite observations	EU Copernicus Marine Service Product (2023p)	QUID : Veillard et al. (2023f) PUM : Taburet (2023f)
SL.7	BLKSEA_OMI_SL_area_averaged_anomalies, satellite observations	EU Copernicus Marine Service Product (2023q)	QUID : Veillard et al. (2023g) PUM : Taburet (2023g)

## The ocean in the cryosphere (global and regional sections)

Product ref. No.	Product ID and type	Data access	Documentation
SI.1	ARCTIC_OMI_SI_extent_obs, satellite observations  OSI SAF Sea ice index 1978-onwards, version 2.2 (2023), OSI-420. EUMETSAT Ocean and Sea Ice Satellite Application Facility.	EU Copernicus Marine Service (2019a)	QUID : Lavergne et al. (2019a)  PUM : Lavergne (2023)
SI.2	ANTARCTIC_OMI_SI_extent_obs, satellite observations  OSI SAF Sea ice index 1978-onwards, version 2.2 (2023), OSI-420. EUMETSAT Ocean and Sea Ice Satellite Application Facility.	EU Copernicus Marine Service (2019b)	QUID : Lavergne et al. (2019b)  PUM : Lavergne and Wettre (2023)
SI.3	GLOBAL_MULTIYEAR_PHY_001_030, numerical models	EU Copernicus Marine Service (2023r)	QUID : Dréville et al (2023a)  PUM : Dréville et al (2023b)
SI.4	GLOBAL_ANALYSISFORECAST_PHY_001_024	EU Copernicus Marine Service (2023s)	QUID : Lellouche et al (2023)  PUM : Le Galloudec et al (2023)
SI.5	OMI_CLIMATE_SST_INDEX_ARCTIC_area_averaged_anomalies, satellite observations	EU Copernicus Marine Service (2023t)	QUID : Karagali et al (2023c)  PUM : Karagali et al (2023d)
SI.6	OMI_CLIMATE_SST_INDEX_ARCTIC_trend, satellite observations	EU Copernicus Marine Service (2023u)	QUID : Karagali et al (2023e)  PUM : Karagali et al (2023f)

SI.7	BALTIC_OMI_SI_exten t, satellite observations	EU Copernicus Marine Service (2023v)	QUID : Maljutenko et al. (2023b)  PUM : Raudsepp et al. (2023b)
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## Ocean acidification (global and regional sections)

Product ref. No.	Product ID and type	Data access	Documentation
OA.1	GLOBAL_OMI_HEALTH H_carbon_ph_trend, In- situ observations	EU Copernicus Marine Service Product (2023w)	Quality Information Document (QUID): Chau et al. (2023a)  Product User Manual (PUM): Chau et al. (2023b)
OA.2	GLOBAL_OMI_HEALTH H_carbon_ph_area_aver aged, In-situ observations	EU Copernicus Marine Service Product (2023x)	QUID: Chau et al. (2023c)  PUM: Chau et al. (2023d)
OA.3	MULTIOBS_GLO_BIO _CARBON_SURFACE_ REP_015_008, In-situ observations	EU Copernicus Marine Service Product (2023y)	QUID: Chau et al. (2023e)  PUM: Chau et al. (2023f)

## Ocean variability (global and regional sections)

Product ref. No.	Product ID and type	Data access	Documentation
OV.1	GLOBAL_OMI_CLIMV AR_enso_sst_area_avera ged_anomalies, numerical models	EU Copernicus Marine Service Product (2022d)	QUID : Drevillon and Gues (2022a)  PUM : Gounou et al. (2022)
OV.2	GLOBAL_OMI_NATL ANTIC_amoc_max26N_ timeseries, numerical models	EU Copernicus Marine Service Product (2022e)	QUID : Jackson et al. (2022a)  PUM : Jackson et al (2022b)
OV.3	OMI_CIRCULATION_ MOC_MEDSEA_area_a veraged_mean, numerical models	EU Copernicus Marine Service Product (2023z)	QUID : Lyubartsev et al. (2023a)  PUM : Lyubartsev et al. (2023a)
OV.4	MEDSEA_MULTIYE A_R_PHY_006_004, numerical models	EU Copernicus Marine Service Product (2022f)	QUID : Escudier et al. (2022)

			PUM : Lecci et al. (2022)
OV.5	OMI_CIRCULATION_VOLTRANS_ARCTIC_averaged, numerical models	EU Copernicus Marine Service Product (2022g)	QUID : Raj et al. (2022a) PUM : Raj et al. (2022b)
OV.6	BALTIC_OMI_WMHE_mbi_bottom_salinity_arkona_bornholm, numerical models, in situ observations and satellite observations	EU Copernicus Marine Service Product (2023aa)	QUID : Raudsepp et al. (2023c) PUM : Raudsepp et al. (2023d)
OV.7	BALTIC_OMI_WMHE_mbi_sto2tz_gotland, numerical models, in situ observations and satellite observations	EU Copernicus Marine Service Product (2023ab)	QUID : Raudsepp et al. (2023e) PUM : Raudsepp et al. (2023f)

### Ocean marine heatwaves (global and regional sections)

Product ref. No.	Product ID and type	Data access	Documentation
MHW.1	General Bathymetric Chart of the Oceans (GEBCO_2023 sub-ice bathymetry), in situ and satellite observations	(GEBCO Compilation Group, 2023b)	(GEBCO Compilation Group, 2023a)
MHW.2	EMODnet – Human Activities Marine Finfish aquaculture sites of production in Europe	(EMODnet Product Catalogue, 2021)	(EMODnet Product Catalogue, 2021)
MHW.3	EMODnet – Human Activities Marine Shellfish aquaculture sites of production in Europe	(EMODnet Product Catalogue, 2022)	(EMODnet Product Catalogue, 2022)

### Ocean wind extremes (global and regional sections)

Product ref. No.	Product ID and type	Data access	Documentation
Wind.1	WIND_GLO_PHY_L3_MY_012_005, Satellite observations	EU Copernicus Marine Service (2023ac)	QUID: Driesenaar et al., 2023a PUM: Driesenaar et al., 2023b

Wind.2	European Centre for Medium-Range Weather Forecasts (ECMWF) ERA5 Reanalysis, Numerical models  Parameter used: hourly 850hPa relative vorticity	Hersbach et al. (2023)	Hersbach et al. (2023)
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