OCEAN ACCOUNTS Global Ocean Data Inventory

Version 1.0   13 Dec 2019

Lyutong CAI
Statistics Division, ESCAP
Email: lyutong.cai@un.org or lyutongcai@gmail.com

ESCAP Statistics Division: stat.unescap@un.org

No.	ID	Name	Component		Data format	Status	Acquisition method	Data resolution	Data Available	Further information	Website	Introduction Document
001	SU-001	Coastal and Marine Ecological Classification Standard(CMECS)	Single	Spatial units	N/A	Ongoing	Includes the physical, biological, and chemical data that are collectively used to define coastal and marine ecosystems	Not limited to specific gear types or to observations made at specific spatial or temporal resolutions	A comprehensive national framework for organizing information about coasts and oceans and their living systems.	CMECS is designed for use within all waters ranging from the head of tide to the limits of the exclusive economic zone, and from the spray zone to the deep ocean. It is compatible with many existing upland and wetland classification standards and can be used with most if not all data collection technologies.	https://iocm.noaa.gov/cmecs/	https://iocm.noaa.gov/cmecs/documents/CMECS_One_Page_Description-20160518.pdf
002	SU-002	Combined Biotope Classification Scheme(SBiCS)	Single	Spatial units	Onlline viewer	Ongoing	N/A	N/A	It is a hierarchical classification of marine biotopes, including aquatic setting, biogeographic setting, water column component, substrate component, geoform component, biotic component, morphospecies component.	The Combined Biotope Classification Scheme (CBiCS) combines the core elements of the CMECS habitat classification scheme and the JNCC/EUNIS biotope classification scheme.	http://www.cbics.org/about/	https://www.researchgate.net/publication/328891619_Combined_Biotope_Classification_Scheme_CBiCS_A_New_Marine_Ecological_Classification_Scheme_to_Meet_New_Challenges
003	SU-003	Large Marine Ecosystems (LMEs)	Single	Spatial units	SHP/ KML	Ongoing	Satallite data, modelled data	N/A	The LMEs produce about 80% of the annual world's marine fisheries catch. Globally they are centers of coastal ocean pollution and nutrient overenrichment, habitat degradation (e.g. sea grasses, corals, mangroves), overfishing, biodiversity loss, and climate change effects.	Large Marine Ecosystems (LMEs) are relatively large areas of ocean space of approximately 200,000 km² or greater, adjacent to the continents in coastal waters where primary productivity is generally higher than in open ocean areas.	http://lme.edc.uri.edu/	
004	SU-004	ESRI - Ecological Marine Units	Single	Spatial units	SHP	Ongoing	Based on historical data, a new difined Ecosystem Classification	Minmum spatial resolution: ¼° × ¼°	The EMUs are an initial objective partitioning of the ocean using longterm historical average data, and could be extended in the future by adding new classification variables and by introducing functionality to develop time-specific EMU distribution maps.		https://esri.maps.arcSHP.com/home/group.html?id=6c78a5125d3244f38d1bc732ef0ee743#overview	https://tos.org/oceanography/article/a-three-dimensional-mapping-of-the-ocean-based-on-environmental-data
005	SU-005	WWF - Marine Ecoregions of the World (MEOW)	Single	Spatial units	SHP	Finished (2007)	Underlying data for the identification and definition of biogeographic units from over 230 works in journals, NGO reports, government publications, and other sources.	N/A	A biogeographic classification of the world's coasts and shelves	It is the first ever comprehensive marine classification system with clearly defined boundaries and definitions and was developed to closely link to existing regional systems.	https://www.worldwildlife.org/publications/marine-ecoregions-of-the-world-a-bioregionalization-of-coastal-and-shelf-areas	
006	SU-006	IUCN - Global Ecosystem Typology	Single	Spatial units	Map (ongoing updated)	Ongoing	Historical data, satellite data, modelled data	N/A	It is a new functional typology for ecosystems by providing a global framework for reporting on Aichi targets, Sustainable Development Goals, and natural capital accounting, as well as for structuring global risk assessments for the IUCN Red List of Ecosystems.	The theoretical framework is critical to ensuring classification robustness with a changing knowledge base plus the flexibility to accommodate new information. The hierarchical framework integrates both top-down approaches, essential for global consistency, and bottom-up approaches, to incorporate established ecological classifications, already in use and incorporated into policy infrastructure in regional, national and sub-national levels (e.g. EUNIS habitat classification). This is crucial, as important conservation action occurs at local levels, where most expertise resides.	https://iucnrle.org/about-rle/ongoing-initiatives/global-ecosystem-typology/	https://iucnrle.org/static/media/uploads/references/key-documents/scientific-foundations/keith-etal-2013-scientific-foundations-red-list-ecosystems-en.pdf
007	SU-007	Longhurst Provinces	Single	Spatial units	SHP	Finished (2010)	N/A	Spatial resolution: 1x1°	The dataset represents the division of the world oceans into provinces as defined by Longhurst. The division has been based on the prevailing role of physical forcing as a regulator of phytoplankton distribution.	Note that the boundaries of these provinces are not fixed in time and space, but are dynamic and move under seasonal and interannual changes in physical forcing. At the first level of reduction, Longhurst recognised four principal biomes: the Polar biome, the Westerlies biome, the Trade winds biome, and the Coastal biome. These four biomes are recognised in every major ocean basin. At the next level of reduction, the ocean basins are divided into provinces, roughly ten for each basin. These regions provide a template for data analysis or for making parameter assignments on a global scale. Please refer to Longhurst's publications when using these shapefiles.	https://www.arcgis.com/home/item.html?id=16ac3f05b7c24c34b458a28e8b6f5b30	http://www.marineregions.org/gazetteer.php?p=details&id=22538
008	OE-001	NOAA - ETOPO1 Global Relief Model	Single	Ocean extent	NetCDF/ GRD98/ BINARY/ XYZ/ Georeferenced TIFF/ PDF/ PNG/ JPEG/ KMZV	Finished (in 2008) data from 1940 to 2008	Model data	Spacial resolution: 1 arc-minute	Ocean bathymetry available in "Ice Surface" (top of Antarctic and Greenland ice sheets) and "Bedrock" (base of the ice sheets).	Horizontal datum: WGS 84 geographic Vertical datum: sea level.	https://www.ngdc.noaa.gov/mgg/global/global.html	
009	OE-002	Marine Regions	Single	Spatial units	SHP/ GML	Ongoing	N/A	N/A	Maritime Boundaries, including EEZ, global sea area map The purpose of Marine Regions is therefore to create a standard, relational list of geographic names, coupled with information and maps of the geographic location of these features. This will improve access and clarity of the different geographic, marine names such as seas, sandbanks, ridges and bays and display univocally the boundaries of marine biogeographic or managerial marine areas.	Marine Regions is a standard list of marine georeferenced place names and areas. It integrates and serves geographic information from the VLIMAR Gazetteer and the MARBOUND database and proposes a standard of marine georeferenced locations, boundaries and regions	http://www.marineregions.org/sources.php	http://www.marineregions.org/

No.	ID	Name	Component	Data format	Status	Acquisition method	Data resolution	Data Available	Further information	Website	Introduction Document
010	OE-003	NOAA - Coral Reef Information System(CoRIS)	Single	Ocean extent	Portal (See each dataset)	Ongoing	In situ data, satellite data, publications	N/A	■Benthic habitat maps, Environmental Sensitivity Index maps, bathymetry, shoreline, and backscatter data; ■Coastal Change and Analysis data, LiDAR and IfSAR data, satellite data and products, remotely sensed imagery and aerial photography; ■Coastal and marine observational data including Real time tides and currents data, and biological survey data including fish, coral, algae, and invertebrates. ■Journal articles and documents that relay CRCP program and policy information, descriptions of the state of corals, and strategies for preserving coral ecosystems	NOAA Coral Reef activities include coral reef mapping, monitoring and assessment; natural and socioeconomic research and modeling; outreach and education; and management and stewardship.	https://www.coris.noaa.gov/ https://www.coris.noaa.gov/search/catalog/main/home.page	
011	OE-004	NOAA - Deep Sea Coral Data Portal (DSCRTP)	Single	Ocean extent	Portal (HTML/ CSV / JSON/ KML)	Ongoing	Historical records from samples, observations collected during deep-water in situ surveys	N/A	Deep-sea coral and sponge data, images, and technical reports	The database schema accommodates both linear (trawls, transects) and point data (samples, observations). The schema captures information in 95 fields across eight main categories related to surveys (e.g. cruises or expeditions), events (e.g. dives or transects), observations (e.g. specimens or images), as well as taxonomic identification, environment, occurrence details, metadata and record-keeping information.	https://deepseacoraldata.noaa.gov/ https://www.ncei.noaa.gov/maps/deep-sea-corals/mapSites.htm	https://data.nodc.noaa.gov/coris/library/NOAA/CRCP/other/other_crcp_publications/DeepSeaCoralRT/Intro_Natl_DB_for_DSCS.pdf
012	OE-005	Blue Habitats	Single	Ocean extent	SHP/ Figures	2014	N/A	Not mentioned	A map of the global distribution of seafloor geomorphic features	A portal for information on the global distribution of marine 'blue' habitats. Knowledge on the distribution of blue habitats is an important input into ocean management, marine spatial planning and biodiversity conservation.	http://www.bluehabitats.org/?page_id=9	https://www.sciencedirect.com/science/article/abs/pii/S0025322714000310?via%3Dihub
013	OE-006	A Global Self-consistent, Hierarchical, High-resolution Geography Database (GSHHG)	Single	Ocean extent	NetCDF/ SHP/ Native binary files	Ongoing (newest version: Version 2.3.7 Released June 15, 2017)	historical data	■ full resolution: Original (full) data resolution. ■ high resolution: About 80 % reduction in size and quality. ■ intermediate resolution: Another ~80 % reduction. ■ low resolution: Another ~80 % reduction. ■ crude resolution: Another ~80 % reduction.	A high-resolution geography data set	Amalgamation of : World Vector Shorelines (WVS). CIA World Data Bank II (WDBII). Atlas of the Cryosphere (AC).	https://www.soest.hawaii.edu/pwessel/gshhg/	
014	OE-007	Unidata	Single	Ocean extent	NetCDF	Ongoing	Historical data	See each dataset	Geographical boundaries		https://www.unidata.ucar.edu/data/	https://www.unidata.ucar.edu/publications/factsheets/current/factsheet_data.pdf
015	OE-008	Island Directory	Single	Ocean extent	website	uncertain	Information describtion	N/A	This Island Directory provides an annotated list of nearly 2,000 of the significant islands of the world. Several criteria were used to determine how much detail is provided for the selected islands. The format has been designed to summarize many kinds of information to give an overview of the geographic, ecological and human interest of islands. Where the data available are sufficient, a variety of indicators are used to make listings and comparisons of islands easier. The size of each entry has been adjusted to the amount of data entered.		http://islands.unep.ch/isldir.htm	
016	OE-009	Global Islands Explorer (GIE) Data: Global Shoreline Vector (GSV) and Global Ecological Coastal Units (ECUs)	Single	Ocean extent	Online Viewer/ Map	Ongoing	Uncertain	N/A	This database includes 340,691 islands, which can be displayed over a number of backdrops including satellite imagery, topographic basemaps, light and dark background canvas, etc. A query of any island returns its name (in English and when available - over 60,000 islands currently have name attributes), size, size class (continental mainland, large island, or small island), length of coastline, and the tectonic plate to which it is attached.		Introductio: https://rmgsc.cr.usgs.gov/gie/ Online Viewer: https://rmgsc.cr.usgs.gov/gie/gie.shtml Data download: https://rmgsc.cr.usgs.gov/outgoing/ecosystems/Global/	
017	OE-010	Global Island Database (GID)	Single	Ocean extent	N/A	Ongoing (since 2010)	N/A	N/A	This database reflects five of the themes important for islands, as identified by the CBD IBPoW, namely biodiversity, climate change, invasive species, pollution and sustainability GID integrated information on 70,000 islands for use in conjunction with Google Maps. UNEP-WCMC added 37 other spatial datasets including one on invasive species in the Pacific Islands.		http://www.globalislands.net/about/gid_functions.php	
018	OE-011	International Hydrographic Organization(IHO) & UNESCO/IPC - General Bathymetric Chart of the Oceans(GEBCO)	Single	Ocean extent	SHP/ NetCDF /GeoTiff/ ASCII raster	Ongoing (since 1903)	Historical data, satellite data, modelled data	GEBCO One Minute Grid (2008) : one arc-minute GEBCO_2014 (2015) : 30 arc-seconds GEBCO_2019: 15 arc-second grid	Bathymetry	GEBCO aims to provide the most authoritative, publicly available bathymetry data sets for the world's oceans.	https://www.gebco.net/	
019	OE-012	dbSEABED	Single	Ocean extent	ASCII/ LYR/ QML/ AVL	Ongoing	Historical data and modelled data (integrated data for over 3,000 datasets and 5 million described seafloor sites)	See each dataset (system precision is 1m)	The scale of operation is local, national and global: shorelines, bays, seaways, national EEZ's, ocean basins, and worldwide. The database deals with coastal, estuarine, inshore, continental shelf, continental slope and very deep sea environments.	dbSEABED creates unified, detailed mappings of the materials that make the seafloor by efficiently integrating thousands of individual datasets. The goal is to bring decades of seabed information - and today's information - from marine geology, biology, engineering and surveys into one seabed mapping that can fulfill the community needs for ocean-bottom information on many spatial scales. The system deals with seabed texture, composition, acoustic properties, colour, geology and biology.	https://instaar.colorado.edu/~jenkinsc/dbseabed/	http://instaar.colorado.edu/~jenkinsc/dbseabed/db9_outputs.pdf
020	OE-013	Ocean Boundaries	Single	Spatial units	Location/ Map	Finished (2002)	N/A	N/A	Geographical definition for the boundaries of Pacific, Atlantic and Indian Ocean		https://www.nodc.noaa.gov/woce/woce_v3/wocedata_1/woce-uot/summary/bound.htm	
021	DU-001	UNEP-WCMC & IUCN - Marine Protected Planet & MPAtlas	Single	Use (designated)	CSV/ SHP/ PDF	Ongoing (since 2010)	Updated monthly with submissions from governments, non-governmental organizations, landowners and communities	N/A	Marine protected area	The most up to date and complete source of information on protected areas. Main projection: WGS84, Mollweide projection	https://www.protectedplanet.net/marine http://www.mpatlas.org/	http://pp-import-production.s3.amazonaws.com/WDPA_Manual_1_5.pdf

No.	ID	Name	Component		Data format	Status	Acquisition method	Data resolution	Data Available	Further information	Website	Introduction Document
022	OC-001	NOAA - World Ocean Database (WOD)	Single	Ocean condition	NetCDF	Ongoing (since 1773) Newest version: World Ocean Database 2018	In situ data	See each dataset	The World Ocean Database (WOD) is a collection of scientifically quality-controlled ocean profile and plankton data that includes measurements of temperature, salinity, oxygen, phosphate, nitrate, silicate, chlorophyll, alkalinity, pH, pCO_2, TCO_2, Tritium, Δ^{13}Carbon, Δ^{14}Carbon, Δ^{18}Oxygen, Freon, Helium, Δ^3Helium, Neon, and plankton.	The most comprehensive and common ocean database, including over 11 datasets	https://www.nodc.noaa.gov/OC5/WOD/pr_wod.html	https://data.nodc.noaa.gov/woa/WOD/DOC/wod_intro.pdf
023	OC-002	NOAA - World Ocean Atlas 2013 Version 2	Single	Ocean condition	ASCII/ CSV/ SHP/ NetCDF	Ongoing (since 1995)	In situ data	1/4° 1° (objectively analyzed) 5° (quality control)	In situ temperature, salinity, dissolved oxygen, Apparent Oxygen Utilization (AOU), percent oxygen saturation, phosphate, silicate, and nitrate at standard depth levels for annual, seasonal, and monthly compositing periods for the World Ocean.	The most comprehensive and common ocean atlas dataset	https://www.nodc.noaa.gov/OC5/woa13/	https://www.nodc.noaa.gov/OC5/woa13/readwoa13.html
024	OC-003	NOAA - Global Ocean Heat and Salt Content	Single	Ocean condition	Figures/ ASCII/ NetCDF	Ongoing (since 1955)	Historical data, modelled data, in situ corrected bathythermograph data, Argo data	N/A	Data distribution figures for temperature and salinity observations, temperature and salinity anomaly fields for depths 0-2000m, heat content and steric sea level (thermosteric, halosteric, total).	These estimates are based on historical data not previously available, additional modern data, and bathythermograph data corrected for instrumental biases. They have also used Argo data corrected by the Argo DAC if available and used uncorrected Argo data if no corrections were available at the time we downloaded the Argo data.	https://www.nodc.noaa.gov/OC5/3M_HEAT_CONTENT/	
025	OC-004	NOAA - NCEI Ocean Surface Topography Mission (OSTM) /Jason-2 and Jason-3 Satellite Products Archive	Single	Ocean condition	NetCDF	Ongoing (since 1985)	Satellite data, near Real time data	Mean Sea Surface: Spatial resolution Regular grid with a 1/30° (2 minutes) spacing; Mean Dynamic Topography: Spatial resolution Regular grid with a 1/4° (15 minutes) spacing; Bathymetry: 2'	A series of ocean altimeter missions designed to observe ocean circulation, sea level rise, and wave heights, mean sea surface, mean dynamic topography, geoid, bathymetry, ocean tides, wind speed		https://www.nodc.noaa.gov/SatelliteData/jason/	
026	OC-005	NOAA - Blended In Situ-CZCS Chlorophyll Data Set	Single	Ocean condition	ASCII	Finished (data from 1978 to 1986)	In situ data, satellite data	Spatial resolution: 1° x 1°	Chlorophyll	The historical archives of in situ (National Oceanographic Data Center) and satellite (Coastal Zone Color Scanner) chlorophyll data were combined using the blended analysis method of Reynolds [1988] in an attempt to construct an improved climatological seasonal representation of global chlorophyll distributions.	https://www.nodc.noaa.gov/OC5/WOA98/pr_chlr.html	https://data.nodc.noaa.gov/woa/PUBLICATIONS/blend.pdf
027	OC-006	NOAA - NCEI Ocean Color Archive	Single	Ocean condition	Hierarchical Data Format (HDF)	Ongoing(since 1997)	Near-Real time data and satellite data	Spatial resolution: 1 km-per-pixel resolution	Chlorophyll-a concentration, turbidity (reflectance)	This study included the Science Quality Environmental Data Records (L2 and L3) and L1B products from the Visible Infrared Imaging Radiometer Suite (VIIRS) onboard the Suomi-National Polar-orbiting Partnership (SNPP) satellite, Level 1A (L1A) data from the Sea-viewing Wide Field-of-view Sensor (SeaWiFS) on board NASA/GeoEye's OrbView-2 satellite, and L2 data from SeaWiFS, the Moderate Resolution Imaging Spectroradiometer (MODIS) on board the NASA Aqua and Terra satellites, and the Medium Resolution Imaging Spectroradiometer (MERIS) on board the European Space Agency's (ESA) Envisat platform.	https://www.nodc.noaa.gov/SatelliteData/OceanColor/	
028	OC-007	NOAA - Quality Monitoring on Level-2 Sea Surface Salinity (SSS) Products from SMAP, SMOS and Aquarius Missions	Single	Ocean condition	NetCDF	Ongoing	Satellite data	Spatial resolution: 1° Temporal resolution: SMOS data: monthly and 3-day, Aquarius data: monthly and 7-day	Sea surface salinity	The data quality monitoring systems (DQMS) for NASA's Soil Moisture Active Passive (SMAP), ESA's Soil Moisture Ocean Salinity (SMOS) and NASA's Aquarius satellites Level-2 products has been developed by the National Centers for Environmental Information (NCEI) Satellite Oceanography team.	https://www.nodc.noaa.gov/SatelliteData/sss/	
029	OC-008	NOAA - Satellite Ocean Heat Content Suite(SOHCS)	Single	Ocean condition	NetCDF/ ASCII/ GIF	Ongoing (since 2012)	Satellite data, real-time data	Spatial resolution: 0.25°	Ocean heat	The SOHCS product measures the integrated vertical temperature from the sea surface to the depth of the 26°C isotherm.	https://data.nodc.noaa.gov/cgi-bin/iso?id=gov.noaa.nodc:NESDIS-OHC	
030	OC-009	NOAA - AVHRR Pathfinder version 5.0 and 5.1 4km global sea surface temperature (SST) monthly harmonic climatologies for 1982-2008	Single	Ocean condition	Figures(PNG)/ NetCDF	Ongoing (1981)	Satellite data	Spatial resolution: 1km - 28km	This dataset provides Sea surface temperature(SST) data from satellite (4km spatial resolution). In addition to climatological sea surface temperature, each file contains standard deviation, sea ice concentration, sea ice concentration error, and land mask information. This accession also includes a 'classic,' or mean, monthly sea surface temperature climatology derived from the same Pathfinder time series data.	Data from AVHRR Pathfinder satellite	https://data.nodc.noaa.gov/cgi-bin/iso?id=gov.noaa.nodc:AVHRR_Pathfinder-NCEI-L3C-v5.3	
031	OC-010	Argo	Single	Ocean condition	NetCDF/ TESAC/ BUFR/ ASIIC	Ongoing(since 2000)	In situ data and real-time data	Salinity/ temperature profiles: average 3° x 3° spacing	Temperature, salinity, oxygen, chlorophyll, conductivity, nitrate, PH, surface and subsurface currents in the upper 2000 m of the ocean	A global array of 3,800 free-drifting profiling floats Two Argo Global Data Assembly Centers (GDACs), the U.S. GODAE (Global Ocean Data Assimilation Experiment) Argo server and the French IFREMER (Institute for Research and Exploitation of the Sea) Argo server	http://www.argo.net/ http://www.argo.ucsd.edu/ http://www.jcommops.org/board?t=argo https://www.nodc.noaa.gov/argo/	
032	OC-011	NOAA - Oxygen / Apparent Oxygen Utilization (AOU) Content	Single	Ocean condition	ASCII	1955-1998	Observational data	Spatial resolution: 1° grid box	O_2, AOU, and heat content in the top 100 m of the world ocean (70° S–70° N) between 1955 and 1998 using observational data.	Data from WOA	https://www.nodc.noaa.gov/cgi-bin/OC5/PENTAS/anomalydata.pl?parameter=oxy	https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2004GL022286
033	OC-012	Group For High Resolution Sea Surface Temperature (GHRSST)	Single	Ocean condition	Figures/ NetCDF	Ongoing (since 2008)	Real-time data (30 days or less) and historical SST (older than 30 days)	High resolution	This dataset provides Sea Surface Temperature (SST) data in satellite swath coordinates (L2P), gridded data (L3), and gap-free gridded products (L4).	Gives a detailed definition and classification for SST.	https://www.ghrsst.org/	https://www.ghrsst.org/ghrsst-data-services/services/
034	OC-013	Global Temperature and Salinity Profile Programme (GTSPP)	Single	Ocean condition	ASCII/ NetCDF	Ongoing (since 1989)	Near Real-time data (observations within 30 days); non Real-time data (observations older than 30 days or data never circulated on the global telecommunication system); quality control and analysis procedures; continuously managed database; shipboard observers (XBTs or CTDs) or automated instruments	Full resolution/ low resolution	Temperature and salinity	GTSPP is One of the international operational activities that provide essential, sub-surface climate variables of temperature and salinity profile data. It provides timely and complete data with documented quality flags and implements internationally agreed quality control and overall management of ocean data fully in accordance with the GCOS action plan. 3 types of dataset are accessible: •User–Defined Data Sets (GTSPP Web Interface (GWI)) •Real-Time Data Sets •Best Copy Data Sets	https://www.nodc.noaa.gov/GTSPP/	https://www.nodc.noaa.gov/GTSPP/document/index.html
035	OC-014	GOOS - Surface Ocean CO_2 Atlas (SOCAT)	Single	Ocean condition	NetCDF/ ASCII/ CSV/ ArcGrid	Ongoing (since 2007)	Data from observations (V2019 includes 25.7 million observations)	SOCAT v2019: decadal 1x1 gridded SOCAT v2019 (1957 to 2019)	Surface ocean fCO_2 (fugacity of carbon dioxide), SST, Salinity	All publicly available fCO_2 data in a common format for the surface oceans SOCAT enables quantification of the ocean carbon sink and ocean acidification and evaluation of ocean biogeochemical models.	https://www.socat.info/index.php/data-access/	

No.	ID	Name		Component	Data format	Status	Acquisition method	Data resolution	Data Available	Further information	Website	Introduction Document
036	OC-015	Copernicus Marine Environment Monitoring Service	Single	Ocean condition	See each dataset (NetCDF included)	Ongoing	Historical and forecast data, satellites, in situ (direct ocean sampling), and numerical models that cover the global ocean	See Copernicus Marine Service Catalogue April 2019	Temperature, salinity, sea surface height, current velocity, mixed layer thickness, sea ice, wind, wave, plankton, oxygen, nutrients, primary production, reflectance, turbidity, reflectance, turbidity, transparency, phytoplankton, Ocean Monitoring Indicators (OMIs)	This database includes many datasets from several satellites.	http://marine.copernicus.eu/	Copernicus Marine Service Catalogue April 2019: http://marine.copernicus.eu/wp-content/uploads/catalogue-cmems.pdf
037	OC-016	CNES - AVISO+ Satellite Altimetry Data	Single	Ocean condition	See each dataset (at least includes NetCDF)	Ongoing (since 1992)	Satellite data	See each dataset	Altimetry-based data products including sea surface height, sea ice thickness, wave height and wind velocity, tide elevations	Aviso:Archiving, Validation and Interpretation of Satellite Oceanographic data Aviso distributes satellite altimetry data from Topex/Poseidon, Jason-1, ERS-1 and ERS-2, and EnviSat, and Doris precise orbit determination and positioning products.	https://www.aviso.altimetry.fr/en/data.html	https://www.aviso.altimetry.fr/fileadmin/documents/data/tools/Aviso_EGU_201904.pdf
038	OC-017	Global Ocean Ship-based Hydrographic Investigations Program (GO-SHIP)	Single	Ocean condition	WHP-Exchange /WOCE/ and NetCDF/ TGM-3M	Ongoing (since 2007)	Observational data (from cruises)	High-quality, high spatial and vertical resolution Approximately decadal resolution	GO-SHIP provides approximately decadal resolution of the changes in inventories of heat, freshwater, carbon, oxygen, nutrients and transient tracers, covering the ocean basins from coast to coast and full depth (top to bottom), with global measurements of the highest required accuracy to detect these changes. Data are divided into Level 1, 2, and 3	Data from ship measurement and seawater sample	http://www.go-ship.org/DataDirect.html	http://www.go-ship.org/CMCST-3.pdf
039	OC-018	CLIVAR and Carbon Hydrographic Data Office (CCHDO)	Single	Ocean condition	WHP-Exchange /WOCE/ NetCDF	Ongoing	Observational data	See each dataset	The highest possible quality global CTD and hydrographic data.	These data are a product of decades of observations related to the physical characteristics of ocean waters carried out during WOCE, CLIVAR and numerous other oceanographic research programs. It is a comprehensive database of ship-based hydrography investigation.	https://cchdo.ucsd.edu/	
040	OC-019	NOAA - Ocean Carbon Data System (OCADS) (formerly CDIAC-Oceans)	Single	Ocean condition	OME/ NetCDF	Ongoing	CDIAC-Oceans data sets, including bottle, underway, coastal, time series and moorings.	See each dataset	■Ocean Carbon and Acidification Data Portal ■Subsurface/Bottle Data (Historical WOCE Data, CLIVAR / GO-SHIP Cruises Data,GLODAPv2 Database,GLODAP Database, CARINA Database, PACIFICA Database) ■Surface / Underway (VOS Program Data, Global Surface pCO2 (LDEO) Database V2015, SOCATv5 Database) ■GlobaL CO2 Time-Series and Moorings Project ■Coastal Carbon Data	OCADS is responsible for hosting and providing access for ocean carbon data collected from around the world, as previously performed by the Oceans component of the Carbon Dioxide Information Analysis Center (CDIAC-Oceans) at the Oak Ridge National Laboratory (ORNL).	https://www.nodc.noaa.gov/ocads/	
041	OC-020	UNESCO/IOC - Global Ocean Surface Underway Data (GOSUD)	Single	Ocean condition	NetCDF/ CVS/ Map	Ongoing (since 2001)	In-situ observations (vessels), real time (monthly) and near Real time (annual), delayed mode data	N/A	Temperature and salinity (underway from the ocean surface down to the mixed layer)	The observations are collected from different categories of platforms such as research vessels, merchant ships but also sailing ships or cruise vessels. Whenever possible, data or data subsets are transmitted in Real time.	http://www.gosud.org/	http://www.gosud.org/Documents
042	OC-021	Global Ocean Data Assimilation Experiment (GODAE)	Single	Ocean condition	See each dataset	Ongoing (since 1997)	Near-real-time, global ocean data assimilation, historical oceanographic observations	See each dataset	Temperature, salinity and velocity structures		https://www.usgodae.org/index.html	
043	OC-022	Tropical Ocean Global Atmosphere (TOGA) Coupled Ocean Atmosphere Response Experiment (COARE) TOGA/COARE	Single	Ocean condition	NetCDF/ ASCII	Ongoing	Observational data (including standard ship bridge observations, advanced automated buoy, shipboard, and land systems)	Spatial resolution: 1-minute (some)	Wind direction and speed, sea temperature		https://www.coaps.fsu.edu/COARE/coaremet.html	https://www.coaps.fsu.edu/COARE/qc-handbook/#intro
044	OC-023	NOAA - Naval Oceanographic Office Global Hybrid Coordinate Ocean Model (HYCOM)	Single	Ocean condition	NetCDF	Ongoing	Near Real time (prediction)	Fine resolution Daily data is typically accessible within 48-hrs of the initial runtime	The NetCDF files contain ocean temperature, salinity, eastward and northward currents, and elevation.	Navy Global HYCOM assimilates satellite altimeter observations, satellite and in situ sea surface temperature, as well as available in situ vertical temperature and salinity profiles from XBTs, ARGO floats, and moored buoys, using the NRL-developed Navy Coupled Ocean Data Assimilation (NCODA) system	https://hycom.org/dataserver	https://www.hycom.org/hycom/documentation
045	OC-024	NASA - State of the Ocean (SOTO) Version 4.2.1	Single	Ocean condition	Online viewer	Ongoing	Satellite data	See each dataset	Ocean color, ocean surface current, ocean surface wind, sea ice, sea surface height, sea surface salinity, sea surface tempreture		https://podaac-tools.jpl.nasa.gov/soto/	
046	OC-025	NOAA - NCEP Global Ocean Data Assimilation System (GODAS)	Single	Ocean condition	Online Maps/ NetCDF(monthly)	Ongoing	Real-time ocean reanalyzed and reanalyzed data	75°S to 65°N: 1° by 1° enhanced to 1/3°, in the N-S direction: within 10° of the equator. 40 levels with a 10 meter resolution in the upper 200 meters.	Sea surface temperature anomaly, isotherm, sea level anomaly, heat content anomaly, tropical cyclone heat potential, surface wind stress, surface currents and ENSO data	A global ocean climate monitoring activity	http://www.cpc.ncep.noaa.gov/products/GODAS/	https://www.cpc.ncep.noaa.gov/products/GODAS/pl/introduction_godas_web.pdf
047	OC-026	Coriolis - Operational Oceanography	Single	Ocean condition	NetCDF/ CSV	Ongoing (since 2001)	Sea-surface observation (satellite sensors), in situ measurements (ships, moored or drifting autonomous systems), assimilation of in-situ and satellite data in an ocean circulation model.	See each dataset	Temperature, salinity, oxygen, chlorophyll, ocean heat content	Products: ■ CORA(see details in this inventory) ■ Gridded Fields(Online maps) ■ ANDRO(see details in this inventory) ■ Global Ocean Indicators(not accessible now)	http://www.coriolis.eu.org/Data-Products/Data-Delivery/Data-selection	
048	OC-027	Coriolis - Coriolis Ocean Dataset for Reanalysis(CORA)	Single	Ocean condition	NetCDF	Ongoing	in situ data (Argo DACS, research vessels, moored buoys, moored buoys)	Full/ high resolution	This datasets diffuses all types of in-situ temperature and salinity measurements with a maximal sampling, including high frequency profilers (ARGO, CTD, etc...) surface and sub-surface timeseries (Thermosalinographs and surface drifters, etc...)		http://www.coriolis.eu.org/Data-Products/Products/CORA	http://cmems-resources.cls.fr/documents/QUID/CMEMS-INS-QUID-013-001b.pdf
049	OC-028	Coriolis - Argo New Displacements Rannou and Ollitrault (ANDRO) An Argo-based deep displacement atlas	Single	Ocean condition	ASCII DEP file/ NetCDF	Uncertain (2012 - 2017)	Argo data, Real time data	N/A	Float parking pressure (RPP) and temperature, deep and surface displacements, and associated times, deep and surface associated velocities with their estimated errors	A world deep displacement dataset, named ANDRO, after a traditional dance of Brittany meaning a swirl, comprising more than 600 000 deep displacements, has been produced from the Argo float data	https://www.seanoe.org/data/00360/47077/	https://archimer.ifremer.fr/doc/00360/47126/47066.pdf
050	OC-029	OceanSITES	Single	Ocean condition	NetCDF/ MAP (PNG/PDF)	Ongoing (since 1999)	Observational data	High time resolution, often in real-time	Observations cover meteorology, physical oceanography, transport of water, biogeochemistry, and parameters relevant to the carbon cycle, ocean acidification, the ecosystem, and geophysics.	OceanSITES is a worldwide system of long-term, open-ocean reference stations measuring dozens of variables and monitoring the full depth (5000m) of the ocean from air-sea interactions down to the seafloor. It is a network of stations or observatories measuring many aspects of the ocean's surface and water column using, where possible, automated systems with advanced sensors and telecommunications systems.	http://www.oceansites.org/index.html	

No.	ID	Name	Component	Data format	Status	Acquisition method	Data resolution	Data Available	Further information	Website	Introduction Document
051	OC-030	WMO-IOC - Data Buoy Cooperation Panel (DBCP)	Single	Ocean condition	MAP/ CSV	Ongoing	Buoy data, real-time ocean, near-Real time and archived data	See each dataset	Sea surface temperature, ocean current velocity, air temperature, humidity, wave characteristics and wind velocity across all oceans.	The primary objective of the DBCP is to maintain and coordinate all components of the network of over 1250 drifting buoys and 400 moored buoys	http://www.jcommops.org/dbcp/data/access.html	
052	OC-031	Woods Hole Oceanographic Institution - Objective Analyzed air-sea Fluxes (OAFlux) for the Global Oceans	Single	Ocean condition	NetCDF/ Figures	Ongoing (since1958, twice-per-year update)	Satellite data	■heat flux &evaporation: 1-degree gridded daily-mean (1985 onward) and monthly-mean (1958 onward) ■ wind: 0.25-degree gridded, daily and monthly means from July 1987 onward	Heat flux, evaporation, wind and sea surface temperature	The OAFlux project aims to provide consistent, multi-decade, global analysis of air-sea heat, freshwater (evaporation), and momentum fluxes for use in studies of global energy budget, water cycle, atmosphere and ocean circulation, and climate.	http://oaflux.whoi.edu/dataproducts.html	http://oaflux.whoi.edu/documents.html
053	OC-032	Hamburg Ocean Atmosphere Parameters and Fluxes from Satellite Data (HOAPS)	Single	Ocean condition	MAP/ NetCDF	Ongoing	Satellite data	Monthly averages and 6-hourly composites on a regular latitude/longitude grid with a spatial resolution of 0.5° × 0.5° degrees.	Wind speed at 10m, near surface humidity, precipitation, water vapor, total water, sea surface temperature, heat flux, evaporation, freshwater flux	A completely satellite based climatology of precipitation, evaporation and freshwater budget (evaporation minus precipitation) as well as related turbulent heat fluxes and atmospheric state variables over the global ice free oceans.	V3.2 (1987-2008): http://hoaps.cen.uni-amburg.de/index.php?id=cimages V4.0(1987-2014):https://icdc.cen.uni-hamburg.de/1/daten/atmosphere/hoaps/	http://hoaps.cen.uni-hamburg.de/index.php?id=docu
054	OC-033	Ocean Data Viewer	Single	Ocean condition	MAP/NetCDF/ ODV Format	Ongoing	See each dataset	See each dataset	Ocean Data View (ODV) is a software package for the interactive exploration, analysis and visualization of oceanographic and other geo-referenced profile, time-series, trajectory or sequence data		https://odv.awi.de/data/ocean/	
055	OC-034	Biological and Chemical Oceanography Data Management Office (BCO-DMO)	Single	Ocean condition	Flat (ASCII) text (comma, space or tab separated)/ Matlab binary file/ Ocean Data View (ODV) compatible file/ NetCDF	Ongoing	See each dataset	observational data (cruises, moorings)	biological, chemical, geological, and physical oceanographic measurements	A data management platform of many ocean scientific research data. This platform belongs to the Woods Hole Oceanographic Institution. This platform includes 44 programs and 9435 datasets(by 1 Jul 2019).	https://www.bco-dmo.org/data	https://www.bco-dmo.org/sites/default/files/BCO-DMO_Introduction_v3.pdf
056	OC-035	Global Ocean acidification observing network(GOA - ON) data portal	Single	Ocean condition	Online Map application	Ongoing	Observational data (mooring, ship-based time series, volunteer observing ship,fixed time series stations)	See each dataset	Ammonium concentration, bacteria, chlorophyll, cyanobacteria, dissolved organic carbon, dissolved organic nitrogen, dissolved organic phosphorus, nitrate, nitrite concentration, oxygen concentration, particulate organic carbon, particulate organic nitrogen, particulate organic phosphorus, phosphate concentration, phytoplankton, primary production, salinity, silicate concentration, water depth, water temperature, zooplankton...(see the http://portal.goa-on.org/Explorer)	A platform of ocean acidification research data, linked with CCHDO	http://portal.goa-on.org/Home	see the list http://portal.goa-on.org/Explorer
057	OC-036	UNESCO/IOC - Ocean Data Portal	Single	Ocean condition	MAP/ NetCDF/ CSV /ASCII/ XML alphabetic-numeric data, images and documents, spatial data	Ongoing	Real-time (up to 7 days from the observations), delay-mode and historical data (more than 7 days after the observations), satellite data, model data, observation data, climate data, analysis and forecast data	See each dataset	Oceanography, marine meteorology Temperature, Salinity, Wave Height, Wind Speed, SAR Imagery ■ JCOMM Ship Observations Team (SOT): Volunteer Observing Ships (VOS) Ship of Opportunity Programme (SOOP) Surface underway data ■ JCOMM Data Buoy Cooperation Panel (DBCP): drifting buoys moored tropical and high seas buoys OceanSITES ■ GLOSS ■ Argo ■ GO-SHIP ■ IOCCP	At present moment ODP is providing access to 700+ ocean and meteorology datasets from IODE NODCs, metadata and data access to WMO Information System (WIS), SeaDataNet, AODN and US NOAA.	http://www.oceandataportal.org/	http://www.oceandataportal.org/wp-content/uploads/2018/07/1-ODP_Enabling_science-1.pdf
058	OC-037	NASA Earth Observations	Single	Ocean condition	GeoTIF/CSV/ Figures	Ongoing	See each dataset	See each dataset	Average Sea Surface Temperature (AVHRR, 1985-97) Bathymetry Blue Marble: Next Generation Chlorophyll Concentration Global Temperature Anomaly Sea Ice and Snow Extent, Northern Hemisphere Sea Ice Concentration and Snow Extent, Global Sea Surface Salinity (2011-15) Sea Surface Temperature (AVHRR, 1981-2006) Sea Surface Temperature (MWOI, 1998+) Sea Surface Temperature (MODIS, 2002+) Sea Surface Temperature Anomaly (AMSR-E, 2002-11)	Including many well documented SHP map based on different satellite data and ocean survey research	https://neo.sci.gsfc.nasa.gov/	
059	OC-038	NASA National Snow & Ice Data Center	Single	Ocean condition	HDF-EOS	Ongoing	Satellite data	See each dataset	Sea Ice	HDF-EOS (Hierarchical Data Format - Earth Observing System) is a self-describing file format based on HDF that was developed specifically for distributing and archiving data collected by NASA EOS satellites. For more information, visit the HDF-EOS Tools and Information Center.	http://nsidc.org/data/modis/data_summaries#sea-ice	
060	OC-039	Sea Level Station Monitoring Facility	Single	Ocean condition	CSV/ NetCDF	Ongoing	Observational data	Hourly/ daily/ monthly resolution	■ Tide gauge data with two levels of quality-control (QC). Fast Delivery (FD) data are released within 1-2 months of data collection and receive only basic QC focused on large level shifts and obvious outliers. Research Quality Data (RQD) are released 1-2 years after data is received from the data originators. ■ Real-Time (RT) data, which feeds the international tsunami networks, are available from the UNESCO IOC Sea Level Monitoring website hosted by the Flanders Marine Institute (VLIZ).	Source of GLOSS.	https://uhslc.soest.hawaii.edu/datainfo/	

No.	ID	Name	Component	Data format	Status	Acquisition method	Data resolution	Data Available	Further information	Website	Introduction Document
061	OC-040	Permanent Service for Mean Sea Level (PSMSL)	Single	Ocean condition	CSV/ NetCDF	Ongoing (since 1993)	Observational data	See each dataset		Collection, publication, analysis and interpretation of sea level data from the global network of tide gauges Data is now distributed as individual time series for each station. The entire dataset (including documentation) is distributed in zipped files, described further below. Separate time series files exist for the Revised Local Reference (RLR) monthly mean data, the RLR annual mean data, and the Metric monthly mean data (same strong warnings as above regarding the Metric data apply).	http://www.psmsl.org/data/	
062	OC-041	Asia-Pacific Data-Reseach Centre (APDRT)	Single	Ocean condition	NetCDF/ Figures	Ongoing (since 2007)	In situ data, satellite data, model data, reanalysis data	See each dataset	Ocean temperature, salinity, nutrients, bathymetry, SST, sea level, surface pressure, surface winds, ocean currents, sensible heat flux, latent heat flux, net heat flux		http://apdrc.soest.hawaii.edu/index.php	
063	OC-042	Ocean Health Index(OHI)	Single	Ocean condition	Maps	Ongoing	N/A	N/A	Scores for status, trend and resilience,and likely future status	The Ocean Health Index is a valuable tool for the Ongoing assessment of ocean health. By providing a means to advance comprehensive ocean policy and compare future progress, the Index can inform decisions about how to use or protect marine ecosystems. Global databases are used for annual assessment of goals in 221 regions, including all coastal countries, territories and the Antarctic, inland to 1 km from the shore and seaward to either 200 nautical miles (Exclusive Economic Zone, EEZ) or 3 nm. Areas beyond national jurisdiction ('High Seas') are assessed less frequently.	http://www.oceanhealthindex.org/	
064	OC-043	UNESCO/IOC - The Global Ocean Observation System	Single	Ocean condition	See each dataset (including CSV/ NetCDF)	Ongoing	Satellite data, in situ data (buoys),real-time data	See each dataset	■climate: ocean heat content and sea level. ■operational services: ocean hazard early warnings, weather and ocean forecasting, and helping to define a path toward sustainable development. ■marine ecosystem health:monitor ocean acidification, biodiversity and habitat, and water quality.	data are available in JCOMMOPS: http://www.jcommops.org/board	http://www.goosocean.org/	
065	OC-044	JCOMM in situ Observations Programme Support Centre (JCOMMOPS)	Single	Ocean condition	See each dataset (including CSV/ NetCDF)	Ongoing	Satellite data, in situ data (buoys),real-time data	See each dataset	Data from DBCP, OceanSITEs, SOT, GO-SHIP, and Argo	The JCOMM is an intergovernmental body of technical experts that provides a mechanism for international coordination of oceanographic and marine meteorological observing, data management and services, combining the expertise, technologies and capacity building capabilities of the meteorological and oceanographic communities. The creation of this Joint Technical Commission results from a general recognition that worldwide improvements in coordination and efficiency may be achieved by combining the expertise and technological capabilities of World Meteorological Organization (WMO) and UNESCO's Intergovernmental Oceanographic Commission (IOC).	http://www.jcommops.org/board	
066	OC-045	ESSO - Indian National Centre for Ocean Information Services	Single	Ocean condition	See each dataset (including CSV/ NetCDF)	Ongoing	Model data, satellite data, in-situ data (near shore wave rider buoys, deep sea buoys, ship borne wave height meters and other deep sea met-ocean buoys as well as Automatic Weather Stations)	See each dataset	INCOIS provides information about wave height, direction and period (of both wind waves and swell waves), sea surface currents, sea surface temperature, mixed layer depth (the well mixed upper layer of the sea), depth of the 20 degree isotherm (a measure of the depth of the thermocline), astronomical tides, wind speed and direction, and oil-spill trajectory.		https://www.incois.gov.in/portal/osf/osf.jsp	
067	OC-046	NASA - Ocean color	Single	Ocean condition	NetCDF/ HDF	Ongoing	Satellite data	See each dataset	The Ocean Color (OC) products all include combinations of the following derived geophysical parameters: normalized water-leaving radiance (nLw) or remote sensing reflectance (Rrs) at multiple visible wavelengths; chlorophyll-A concentration (chl-a); aerosol optical thickness (AOT), τ, in one NIR or (for CZCS) red band; angstrom coefficient, Å; the diffuse attenuation coefficient at 490 nm, K490; calcite concentration or particulate inorganic carbon (PIC); particulate organic carbon (POC); photosynthetically available radiation (PAR); fluorescence line height (FLH); and inherent optical properties (IOPs), which include absorption and backscattering coefficients in the visible bands. The MODIS SST products include 4-micron (nighttime only) and 11-micron (daytime and nighttime) SST. For the Level-3 products, each binned product contains multiple geophysical parameters, while the standard mapped image (SMI) products contain one parameter per granule.		https://oceancolor.gsfc.nasa.gov/about/ Data: https://worldview.earthdata.nasa.gov/	https://oceancolor.gsfc.nasa.gov/docs/odps_opdsmp.may2018.pdf
068	OC-047	Laboratoire d'Etudes en Géophysique et Océanographie Spatiales(LEGOS)	Single	Ocean condition	See each dataset	Ongoing	In-situ observations, satellite measurements, modelling and data assimilation	See each dataset	■ CTOH (Centre for the Topography of Oceans and the Hydrosphere), dedicated to satellite altimetry over the oceans and the continents. Growth areas for this activity are the coastal zones, continental hydrology and the cryosphere. ■ DORIS, a data treatment centre for precise orbital positioning (in cooperation with the International Earth Reference System). ■ ROSAME, an observational network for monitoring sea level which was initiated in the southern ocean with the support of IPEV and has been extended to tropical and European regions in cooperation with IRD and CNES. ■ The SSS network for monitoring Sea Surface Salinity by merchant ships, which links five observational networks in the Pacific, Atlantic, Indian and Austral ocean basins. ■ The moored buoy network PIRATA in the equatorial Atlantic, used for monitoring meteorological and oceanographic conditions between the surface and a depth of 500m. These data are complemented by oceanographic measuring campaigns that take place alongside routine maintenance of the buoys.		http://www.legos.obs-mip.fr/legos/Presentation	
069	OC-048	LEGOS - Center for Topographic studies of the Ocean and Hydrosphere (CTOH)	Single	Ocean condition	NetCDF/ Binary	Ongoing	Satellite data (altimetric measurements)	See each dataset	sea surface height, ocean currents, lake and river levels, the cryosphere, planet climate, continental surfaces, sea ice	Including many datasets from several satellites AVISO for Topex/Poseidon, Jason-1 and ENVISAT in Toulouse; ESA at ESRIN, Italy, and CERSAT for ERS1/2 in Brest	http://ctoh.legos.obs-mip.fr/	
070	OC-049	LEGOS - Sea Surface Salinity Observation Service	Single	Ocean condition	ASCII/ NetCDF	Ongoing	Real-time monitoring and Delayed Time Processing	5 mn resolution data	Sea Surface Salinity, thermosalinograph (TSG)	aims at collecting, validating, archiving and distributing in situ SSS measurements derived from Voluntary Observing Ship programs.	http://www.legos.obs-mip.fr/observations/sss	

No.	ID	Name	Component		Data format	Status	Acquisition method	Data resolution	Data Available	Further information	Website	Introduction Document
071	OC-050	Global Sea Level Observing System (GLOSS)	Single	Ocean condition	Berkeley DB format dat	Ongoing (SINCE 1997)	in situ data (Tide gauge analysis)	See each dataset		The Global Sea Level Observing System (GLOSS) is an international sea level monitoring program designed to produce high-quality in situ sea level observations to support a broad research and operational user base. GLOSS was established by the UNESCO Intergovernmental Oceanographic Commission (IOC) in 1985 and it is currently formed by over 90 nations across the globe.	https://www.gloss-sealevel.org/ Data: https://www.psmsl.org/products/gloss/glossmap.html	
072	OC-051	NOAA - National Data Buoy Center (NDBC)	Single	Ocean condition	NetCDF	Ongoing	Real time	See each dataset (in the Handbook)	Water Temperature, Ocean Wave Estimates, Ocean Current Profiles	A network of data collecting buoys and coastal stations	https://www.ndbc.noaa.gov/	Handbook: https://www.ndbc.noaa.gov/NDBCHandbookofAutomatedDataQualityControl2009.pdf
073	OC-052	NOAA - Gridded Climate Datasets	Single	Ocean condition	NetCDF	Ongoing	See each dataset (at least includes satellite data, gauge data, model data)	See each dataset from 8 times daily to monthly from 0.04°x0.04° to 5.0°x5.0°	This a collection of climate datasets, which includes temperature, SST, precipitation, radiation, arctic, reanalysis, and climate indices data	NOAA Earth System Research Laboratory	https://www.esrl.noaa.gov/psd/data/gridded/	
074	OC-053	Everyone's Gliding Observatories (EGO)	Single	Ocean condition	NetCDF	Ongoing (since 2005)	• Real-Time data : scientific data transmitted during the deployment in Real time. • Recovery data : scientific data recovered from the memory card after glider recovery • Delayed Mode : scientific data quality controled in delayed mode.	Full resolution	EGO provides observations of the ocean physics, biogeochemistry and biology with gliders. Sea water temperature, sea water salinity, sea water pressure, biogeochemical sea water data, acoustic sea water data are included.	A component of the Global Ocean Observing System (GOOS)	https://www.ego-network.org/dokuwiki/doku.php	https://www.ego-network.org/dokuwiki/doku.php?id=public:data management
075	OC-054	NASA - SeaWiFS Bio-optical Archive and Storage System (SeaBASS)	Single	Ocean condition	ASCII/ Map	Ongoing	In situ data, satellite data	See each dataset	Archived data include measurements of apparent and inherent optical properties, phytoplankton pigment concentrations, and other related oceanographic and atmospheric data, such as water temperature, salinity, stimulated fluorescence, and aerosol optical thickness. Data are collected using a number of different instrument packages, such as profilers, buoys, and hand-held instruments, and manufacturers on a variety of platforms, including ships and moorings.		https://seabass.gsfc.nasa.gov/wiki/System_Description Data directory: https://seabass.gsfc.nasa.gov/archive/	
076	OC-055	Hadley Centre Observation Datasets	Single	Ocean condition	ASCII/ NetCDF	Ongoing (since 1990)	In situ data, satellite data	See each dataset	Sea-ice, sea-surface temperature, night marine air temperature, in situ ocean temperature and salinity profiles and objective analyses, monthly/daily gridded sea-level pressures data are included.	Observed subsurface ocean temperature and salinity profiles with data quality information, and, objective analyses formed from the profile data with uncertainty estimates. Data are available from 1900 to the present.	https://www.metoffice.gov.uk/hadobs/	
077	OC-056	NASA bio-Optical Marine Algorithm Dataset (NOMAD)	Single	Ocean condition	ASCII	uncertain (newest version in 2008)	In situ data (cruise), satellite data	N/A	Global, high quality in situ bio-optical data sets. Data products include coincident observations of water-leaving radiances and chlorophyll-a concentrations, along with relevant metadata, such as the date, time, and coordinates of data collection and binary processing flags.		https://seabass.gsfc.nasa.gov/wiki/NOMAD	
078	OC-057	DATO.GOV - OCEAN DATA CATALOG	Single	Ocean condition	See each dataset	Ongoing	See each dataset	See each dataset	The home of the U.S. Government's open data. Most data in this site are limited to US but some are global.		https://catalog.data.gov/dataset?groups=ocean9585#topic=ocean_navigation	
079	OC-058	Ocean Observatories Initiative (OOI)	Single	Ocean condition	NetCDF/ CSV/ JSON	Ongoing	Near-real time, model data, in situ data(cruises)	See each dataset	An integrated infrastructure program composed of science-driven platforms and sensor systems that measure physical, chemical, geological and biological properties and processes from the seafloor to the air-sea interface. See the list of the data: http://oceanobservatories.org/data-products/	OOI deploys sensors in arrays of moorings, mobile assets, and cabled sensors to measure oceanographic variables. OOI provides data products for a 25-year-plus time period within an expandable architecture. WHOI is the leader, owner, and operator.	http://oceanobservatories.org/data/	
080	OC-059	UNESCO/ IOC - Sea Level Facility	Single	Ocean condition	Map/ ASCII	Ongoing	Real time data, delayed data	See each dataset 12h/ day/ 7 days/ 30 days	Sea Level	This platform provides information about the operational status of global and regional networks of Real time sea level stations as well as a display service for quick inspection of the raw data stream from individual stations.	http://www.ioc-sealevelmonitoring.org/	
081	OC-060	University of Hawaii - Sea Level Center	Single	Ocean condition	CSV/ NetCDF	Ongoing	Real time data	daily/ hourly	Global sea level rise	Tide gauges data around the world from GLOSS (Global Sea Level Observing System)	http://uhslc.soest.hawaii.edu/datainfo/	
082	OC-061	NOAA - Pacific Marine Environmental Laboratory (PMEL)	Single	Ocean condition	See each dataset (at least includes ASCII)	Ongoing	See each dataset	See each dataset	A regional data laboratory but provides global data in earth, atmosphere, ecosystems, and climate. Project-based data list: https://www.pmel.noaa.gov/data-links		https://www.pmel.noaa.gov/public/pmel/globe/	
083	OC-062	NASS- Moderate Resolution Imaging Spectroradiometer (MODIS)	Single	Ocean condition	See each dataset (at least includes ASCII)	Ongoing	Satellite data	See each dataset	MODIS Sea Surface Temperature MODIS Remote Sensing Reflectance MODIS Chlorophyll-a Concentration MODIS Diffuse Attenuation at 490 nm MODIS Particulate Organic Carbon MODIS Particulate Inorganic Carbon MODIS Normalized Fluorescence Line Height (FLH) MODIS Instantaneous Photosynthetically Available Radiation MODIS Daily Mean Photosynthetically Available Radiation MODIS Sea Ice and Ice Surface Temperature	The MODIS instrument is operating on both the Terra and Aqua spacecraft. It has a viewing swath width of 2,330 km and views the entire surface of the Earth every one to two days. Its detectors measure 36 spectral bands between 0.405 and 14.385 μm, and it acquires data at three spatial resolutions -- 250m, 500m, and 1,000m.	https://modis.gsfc.nasa.gov/data/	

No.	ID	Name	Component	Data format	Status	Acquisition method	Data resolution	Data Available	Further information	Website	Introduction Document
084	OC-063	UNESCO/IOC - Harmful Algal Bloom Program (HAIS)	Single	Ocean condition	online map/ PDF/ CSV	Ongoing (since 1985)	N/A	N/A	HAIS provides access to information on harmful algal events, harmful algae monitoring and management systems worldwide, current use of taxonomic names of harmful algae, and information on biogeography of harmful algal species. Supplementary components are an expert directory and a bibliography. Algal bloom data are CSV data by country.	1. Dynamic mapping: On-line mapping tool for all data, and combination of data, on species distribution, events, syndromes, etc. 2. Species fact sheets and a species identification system: An easy-to-use key for identification of genera and species within a genus, for the relevant taxa. 3. High-quality visualizations: Pre-prepared maps and graphics with, e.g. yearly and decadal distribution of syndromes, species and events, ready for download as high-resolution PDF files. User surveys will define specific maps and graphics. 4. HAIS publication series: Pending the assessment of a user survey, selected high-quality visualizations may be published as an annual printed report to serve the users and to stimulate and justify continued and additional new data submission. 5. Discussion forum: A dynamic, participatory forum for discussion and direct access to other platforms.	http://hab.ioc-unesco.org/ Online Map: http://envlit.ifremer.fr/var/envlit/storage/documents/parammaps/haedat/ CSV Data: http://haedat.iode.org/browseEvents.php	http://hab.ioc-unesco.org/index.php?option=com_oe&task=documents&Itemid=10
085	OC-064	LITTERBASE	Single	Ocean condition	Online Map Viewer	Ongoing	Research data	N/A	LITTERBASE provides information about the amount and distribution of litter and microplastic, and interactions between aquatic life and marine litter.	LITTERBASE summarises results from 1,960 scientific studies in understandable global maps and figures and opens scientific knowledge on marine litter to the public.	https://litterbase.awi.de/	
086	OC-065	NOAA - Optimum Interpolation Sea Surface Temperature (OISST)	Single	Ocean condition	NetCDF	Ongoing	Analysis constructed by combining observations from different platforms (satellites, ships, buoys)	1/4° daily	Sea Surface Temperature	There are two kinds of daily OISST, named after the relevant satellite SST sensors. These are the Advanced Very High Resolution Radiometer (AVHRR) and Advanced Microwave Scanning Radiometer on the Earth Observing System (AMSR-E). AVHRR has the longest record (from late 1981 to the present) of SST measurements from a single sensor design. Infrared instruments, like AVHRR, can make observations at relatively high resolution but cannot see through clouds. Microwave instruments like AMSR-E can measure SSTs in most weather conditions (except heavy rain) but not adjacent to land	https://www.ncdc.noaa.gov/oisst	
087	OC-066	NOAA - Global Ocean Currents Database (GOCD)	Single	Ocean condition	NetCDF/ ASCII	Finished (1962 - 2013)	In situ data	High resolution	Currents	This National Centers for Environmental Information (NCEI) archival information package (AIP) contains a product generated by NCEI-- the Global Ocean Currents Database (GOCD). It is derived from NCEI AIPs that hold in situ ocean current data from a diverse range of instruments, collection protocols, processing methods, and data storage formats. For acceptance into the GOCD, the data must have sufficient quality control and thorough documentation. From the shipboard acoustic Doppler current profiler sets, the GOCD creates files that hold single vertical ocean currents profiles. The GOCD spans 1962 to 2013.	https://www.nodc.noaa.gov/gocd/index.html	
088	OC-067	CMA - Fengyun Satellite data centre	Single	Ocean condition	NetCDF	Ongoing	Satellite data	daily, 10-days, monthly	Sea Surface Temperature, wind speed	FengYun-3, or FY-3 satellites, are China's second generation polar-orbiting meteorological satellites, with substantively enhanced functionalities and technical capabilities. They are designed to enhance China's three dimensional atmospheric sounding capability and global data acquisition capability, in an effort to collect more cloud and surface characteristics data, from which meteorologists may infer out atmospheric, land surface and sea surface parameters that are global, all-weather, three-dimensional, quantitative, and multi-spectral.	http://satellite.nsmc.org.cn/PortalSite/Data/DataView.aspx?SatelliteType=0&DataCategoryCode=Ocean&DataTypeCode=OCC	
089	OC-068	JMA - Monthly Mean Sea Surface Temperature Anomalies	Single	Ocean condition	Figures	Ongoing	Satellite data	N/A	Sea Surface Temperature		https://ds.data.jma.go.jp/tcc/tcc/products/elnino/ocean/sst-ano-global_tcc.html	
090	OC-069	JMA - Description of Daily Sea Surface Temperature Analysis for Climate Monitoring (COBE-SST)	Single	Ocean condition	SST-GPV file	Ongoing(since 1891)	In situ data, historical data	1x1°	Sea Surface Temperature	SST analysis involves a resolution of 1° latitude and 1° longitude. The east-west grid points run eastward from 0.5°E to 0.5°W, while the north-south grid points run northward from 89.5°S to 89.5°N. The daily analysis scheme is based on the optimum interpolation method, and the SST deviation from the normal for the previous day's analysis is multiplied by 0.95 for use as a first guess. The inputs of daily analysis are marine meteorological data for the seven-day period centered on the day in question. Observed data averaged daily in 1.5° x 1.5° boxes are used as super-observations to save processing time.	http://ds.data.jma.go.jp/tcc/tcc/products/elnino/cobesst_doc.html	
091	OA-001	Global Species Databases (GSD)	Single	Ocean asset	Classification of taxa	Ongoing	Lists of information	N/A	A global database of all marine life, including marine life taxonomic information		http://marinespecies.org/subregisters.php#species_dbs_GSD	
092	OA-002	FishBase	Single	Ocean asset	CD-ROM/ Online database	Ongoing	Taxonomy, biology, trophic ecology, life history, and uses, as well as historical data reaching back to 250 years.	N/A	FishBase covers >33,000 fish species compiled from >52,000 references in partnership with >2,000 collaborators: >300,000 common names and >55,000 pictures.	FishBase provides comprehensive species data, including information on taxonomy, geographical distribution, biometrics and morphology, behaviour and habitats, ecology and population dynamics as well as reproductive, metabolic and genetic data. There is access to tools such as trophic pyramids, identification keys, biogeographical modelling and fishery statistics and there are direct species level links to information in other databases such as LarvalBase, GenBank, the IUCN Red List and the Catalog of Fishes. A new version of the database is released every even month of the year	https://www.fishbase.se/home.htm	

No.	ID	Name	Component		Data format	Status	Acquisition method	Data resolution	Data Available	Further information	Website	Introduction Document
093	OA-003	Peace Research Institute Oslo (PRIO) - Petroleum Dataset	Single	Ocean asset	SHP	Ongoing	In situ data (Survey)	N/A	All known oil and gas deposits throughout the world Two datasets are available: one for on-shore deposits and another one for off-shore deposits	locational information, type of resource (oil and/or gas), discovery- and production dates (whenever known), name of petroleum basin, geographic coordinates of polygon centroid, and primary source of information. Newest version: Petroleum Dataset v. 1.2	https://www.prio.org/Data/Geographical-and-Resource-Datasets/Petroleum-Dataset/Petroleum-Dataset-v-12/	https://www.prio.org/Global/upload/CSCW/Data/Geographical/codebook.pdf
094	OA-004	AlgaeBase	Single	Ocean asset	website	Ongoing	Species introduction	N/A	AlgaeBase is a database of information on algae that includes terrestrial, marine and freshwater organisms. At present, the data for the marine algae, particularly seaweeds, are the most complete.	155,780 species and infraspecific names are in the database, 21,968 images, 60,212 bibliographic items, 439,333 distributional records.	http://www.algaebase.org/	
095	OA-005	AquaMaps	Single	Ocean asset	Online maps/ CV	Ongoing (latest version 08 / 2016)	survey data model data	half-degree	Standardized distribution maps for over 25,000 species of fishes, marine mammals and invertebrates. As of August 2015 we have: ■ 22889 total maps for marine species ■ 12068 marine fishes ■ 118 marine mammals ■ 10159 other marine metazoans (=Kingdom Animalia and not Fish and not Class Mammalia) ■ 116 biodiversity maps by pre-defined phylogenetic groups ■ 66 checklists by LMEs ■ 240 checklists by country or island/territory	AquaMaps is a tool for generating model-based, large-scale predictions of natural occurrences of species. For marine species, the model uses estimates of environmental preferences with respect to depth, water temperature, salinity, primary productivity, and association with sea ice or coastal areas.	https://www.aquamaps.org/search.php	https://www.aquamaps.org/main/AquaMaps_Algorithm_and_Data_Sources.pdf#page=1
096	OA-006	SeaLifeBase	Single	Ocean asset	NetCDF/ CVS	Ongoing	Historical data	See each dataset	75800 Species, 55800 Common names, 13100 Pictures, 36000 References, 300 Collaborators, 187000 Visits/Month	The long-term goal of this project is to create and maintain a FishBase-like information system for all non-fish marine organisms, ca. 400,000 spp. Of these, marine organisms (about 240,000 spp) are the target of the current project phase. Since the number of species is huge, SeaLifeBase has made a list of priorities in its encoding strategy with short-term goals being set on an annual basis. Working on one or two island ecosystems at a time, the project gears closer toward its goal to assign species to large marine ecosystems (66 ecosystems worldwide).	https://www.sealifebase.ca/	
097	OA-007	Coastal & Oceanic Plankton Ecology, Production, & Observation Database (COPEPOD)	Single	Ocean asset	Text/ Html/ CVS/ Maps	Ongoing	Observational data	See each dataset	A global plankton database that contains over 400,000 observations of copepods, along with other zooplankton, phytoplankton, and microbial plankton taxa. ■ COPEPOD: The global plankton database ■ COPEPODITE: The global time-series directory and time-series analysis toolkit ■ NAUPLIUS: Ecosystems data products and visualization tools ■ COPEPEDIA: Taxonomic information, photos, and biometric data	This database provides fisheries and marine ecosystems investigators with an integrated data set of quality-reviewed, globally distributed plankton data, along with any available co-sampled environmental hydrographic and meteorological data. These data are provided in a variety of forms (e.g., spatial mean fields, time-series, graphical maps and figures) and compilations (e.g., from individual data sets to regional or taxa-based compilations).	https://www.st.nmfs.noaa.gov/plankton/about/databases.html	
098	OSU-001	Marine traffic	Single	Ocean service use	Map	Ongoing	Near-Real time data, satellite data and coastal AIS-receiving stations	Tempotal resolution of data depends on a number of parameters at the specific point and time.	Vessel-tracking (public regarding vessels' positions and movements), ports' traffic, voyage details, shipping	Marine traffic is a commercial company but provides some free data. This company combines satellite data with a vast network of terrestrial stations. The initial data collection is based on the Automatic Identification System (AIS). For each position, the company provides: LON, LAT, VESSEL MMSI, STATUS, SPEED, COURSE, HEADING and TIMESTAMP (UTC) For each port call the company provides: PORT ID, PORT NAME, VESSEL MMSI, TIMESTAMP, ARR/DEP This company may also provide additional vessel parameters, e.g. vessel name, type, dimensions, flag, etc. Free for online map, charge for data download.	https://www.marinetraffic.com/	https://help.marinetraffic.com/hc/en-us/articles/205413457-Introduction-
099	OSU-002	Partnership for Observation of the Global Oceans (POGO) - ocean-going Research Vessels	Single	Ocean service use	Online Map	Ongoing	In situ data	See each dataset	This directory contains characteristics, owners and operator information for all marine and oceanographic research vessels, larger than 60 meters. Parameters measured are listed		http://www.pogo-oceancruises.org/v_pogo_v1/browse_step.asp	
100	OSU-003	Global Fishing Watch	Single	Ocean service use	BigQuery Tables/ CSVs/ Geotiff Rasters in Google Earth Engine	Ongoing	Vessel Monitoring System (VMS) data, Automatic Identification Systems (AIS) data, historical data dating to 2012	See each dataset	Gridded fishing activity data, vessel identity and classification lists, encounters between refrigerated cargo vessels and fishing vessels, future data products: ports, AIS On/Off events, gridded VMS	Observe fishing vessels at sea, could see the tracks of about 60,000 commercial fishing vessels at sea in near real-time, along with their name and flag state Data shows all activity from 1 January 2012 until 72 hours ago.	http://globalfishingwatch.org/research/research-accelerator-program/	need registration
101	OSU-004	FleetMon	Single	Ocean service use	CSV/ XLSX	Ongoing (since 2007)	Real-time vessel position data	Tempotal resolution of data depends on a number of parameters at the specific point and time.	FleetMon is a commercial companry that provides vessel data and shipping data. See detailed information: https://www.fleetmon.com/services/historical-ais-data/	have customers across 164 countries and around a half million users.	https://www.fleetmon.com/	A commercial companry
102	OSU-005	Reefs at Risk Revisited	Single	Ocean service use	SHP/KML/ PDF	2011	Sampling data, sarellite data	500-m resolution	It contains a global assessment of the vulnerability of nations and territories to coral reef degradation. Data of global threats and local threats of reefs could be found in SHP.	It evaluates threats to coral reefs from a wide range of human activities, and includes an assessment of climate-related threats to reefs	http://www.wri.org/publication/reefs-risk-revisited	
103	OSU-006	Shipmap	Single	Ocean service use	MAP	Finished (2012)	AIS data	High-resolution animation	Including the movement of different types of ship: Container, Dry bulk, Tanker, Gas bulk, Vehicles. Also, have a counter for emitted CO2 (in thousand tonnes) and the maximum freight carried by represented vessels (varying units).	The movements of the global merchant fleet over the course of 2012. The project's aim is to highlight for a broad audience the extraordinary scale of modern commercial shipping, the routes these huge vessels take around the world, the geographic spread of different types of cargo boats, and the amount of carbon dioxide they produce.	https://www.shipmap.org/	

No.	ID	Name	Component		Data format	Status	Acquisition method	Data resolution	Data Available	Further information	Website	Introduction Document
104	OSU-007	International Chamber of Shipping (ICS)	Single	Ocean service use	Publications/ Interactive Flag State Performance Table	Ongoing	N/A	N/A	Publications on shipping and CO2, maritime security, and environment protection	ICS is the principal international trade association for merchant shipowners and operators, representing all sectors and trades and over 80% of the world merchant fleet. The ICS Shipping Industry Flag State Performance Table brings together data available in the public domain regarding the performance of flag states in terms of, inter alia, Port State Control records, ratification of international Conventions, and IMO meeting attendance.	http://www.ics-shipping.org	
105	OSU-008	UNCTADstat	Single	Ocean service use	Excel/ Report	Ongoing (since 1981)	N/A	N/A	Maritime transport: World merchant fleetWorld merchant fleet Maritime transport indicatorsMaritime transport indicators World seaborne tradeWorld seaborne trade	The UNECE has a list of UN/LOCODE port areas - could be an interesting proxy to identify areas of economic activity	http://www.unece.org/cefact/locode/welcome.html	http://www.unece.org/fileadmin/DAM/cefact/recommendations/rec16/rec16_rev3_ecetrd227.pdf
106	Mul-001	NOAA - Coral Reef Temperature Anomaly Database (CoRTAD)	Multiple	Ocean condition Ocean extent	NetCDF	Ongoing(since 1989)	Satellite data	Version 4/ 5 (approximately 4 km for spatial resolution)	Sea surface temperature, sea surface temperature anomaly, wind speed, sea ice fraction,thermal stress anomaly	The Coral Reef Temperature Anomaly Database (CoRTAD) is a collection of sea surface temperature (SST) and related thermal stress metrics, developed specifically for coral reef ecosystem applications but relevant to other ecosystems as well. The CoRTAD is intended primarily for climate and ecosystem related applications and studies and was designed specifically to address questions concerning the relationship between coral disease and bleaching and temperature stress. Version 5 - Global, 4 km Sea Surface Temperature and Related Thermal Stress Metrics for 1982-2012 Version 4 - Global, 4 km Sea Surface Temperature and Related Thermal Stress Metrics for 1981-10-31 to 2010-12-31	https://www.nodc.noaa.gov/SatelliteData/Cortad/	
107	Mul-002	Sentinel Online	Multiple	Ocean condition Ocean service use	See each dataset	Ongoing	Near-Real time data, in situ data, satellite data, model data	See each dataset	Information on the physical and biogeochemical state and dynamics of the ocean: ■ Marine safety: hydrodynamic forecasts and remote sensing blended products and forecasts for sea ice (support applications like marine operations, oil spill combat, ship routing, defence, search & rescue) ■Marine resources: long time-series of in-situ and remote-sensing products, as well as analysis, reanalysis and forecasts of hydrodynamic and ecosystem models (supporting applications such as fish stock management) ■Marine and coastal environment: supporting environmental applications such as monitoring water quality, pollution, coastal activities. ■Seasonal and weather forecasting, with services such as long time-series of in situ and remote-sensing products, as well as reanalysis of physical parameters at various temporal resolutions (monthly, seasonal, yearly) and short-term forecast of ocean properties at global and regional scale – supporting applications like climate monitoring, ice surveys.		https://sentinels.copernicus.eu/web/sentinel/thematic-areas/marine-monitoring http://www.esa.int/Our_Activities/Observing_the_Earth/Copernicus/Marine_services	
108	Mul-003	Shipboard Automated Meteorological and Oceanographic System (SAMOS)	Multiple	Ocean condition Ocean service use	See each dataset	Ongoing (since 2005)	In-situ on research vessels (R/Vs)	High-temporal sampling rates (typically 1 minute or less)	Navigational (ship's position, course, speed, and heading), meteorological (winds, air temperature, pressure, moisture, rainfall, and radiation), and near-surface oceanographic (sea temperature and salinity)		https://samos.coaps.fsu.edu/html/docs/NOAA-TM_OAR_PSD-311.pdf	
109	Mul-004	International Ocean Discovery Program (IODP)	Multiple	Ocean condition Ocean asset	Maps/ KML/ CSV	Ongoing (since 2003)	Sample data	N/A	Ocean drilling data recorded in seafloor sediments and rocks and to monitor subseafloor environments	The International Ocean Discovery Program (IODP) is an international marine research collaboration that explores Earth's history and dynamics using ocean-going research platforms.	http://www.iodp.org/resources/access-data-and-samples	
110	Mul-005	UN - WCMC Ocean data viewer	Multiple	Spatial units Ocean extend Ocean asset Ocean service use	SHP	Ongoing	See each dataset	See each dataset	Corals, seagrasses, saltmarshes, protected areas, chlorophyll-a, shannon's biodiversity index, mangrove, whales, dolphins, seamounts, sea turtles, dive centers, EEZ	Including over 30 distribution map datasets of many species	http://data.unep-wcmc.org/	https://www.unep-wcmc.org/system/dataset_file_fields/files/000/000/488/original/Atlas_Manual.pdf?1517488900
111	Mul-006	WCMC - Ocean+ Library	Multiple	Spatial units Ocean extend Ocean asset Ocean service use	See each dataset	Ongoing	See each dataset	See each dataset	A inventory of more than 180 known datasets, database, and data portals containing marine and coastal data and information of biodiversity importance. Those datasets are divided by marine spatial plannning, education, environmental impact assessment, ecosystem assessment, ecosystem services and natural capital		https://library.oceanplus.org/	https://www.unep-wcmc.org/system/dataset_file_fields/files/000/000/341/original/McDermott_Long_et_al_-_OceanPlus_Library_-_8_Mar_2019.pdf?1552301984#page=27

No.	ID	Name	Component	Data format	Status	Acquisition method	Data resolution	Data Available	Further information	Website	Introduction Document
112	Mul-007	FAO - Global fishery databases	Multiple	Ocean asset Ocean service supply	CSV	Ongoing	Statistical data GIS layers	N/A	It is a set of global fishery statistics databases maintains 10 global time series and 5 regional capture time series. This database contains the volume of aquatic species caught by country or area, by species items, by FAO major fishing areas, and year, for all commercial, industrial, recreational and subsistence purposes. The harvest from mariculture, aquaculture and other kinds of fish farming are also included. All information collections: (http://www.fao.org/fishery/statistics/collect ions/en) ■ Statistical Collections Global Production, Global Aquaculture Production, Global Capture Production, Global Tuna Catches by Stock, Atlas of Tuna and Billfish Catches, Global Number of Fishers, Fishery Commodities and Trade, Consumption of Fish and Fishery Products, CECAF (Eastern Central Atlantic) Capture Production, GFCM (Mediterranean and Black Sea) Capture Production, RECOFI (Regional Commission for Fisheries) Capture Production, Southeast Atlantic Capture Production ■ Records Collections ASFIS List of Species for Fishery Statistics Purposes, Database on Introductions of Aquatic Species (DIAS) - fact sheets, Database on Port State Measures, FAO Fisheries Glossary, FAO Fishing Vessels Finder (FVF) Glossary of Aquaculture, High Seas Vessels Authorization Record (HSVAR), Institutions mailing list ■ Fact Sheets Collections Cultured Aquatic Species Information Programme (CASIP) - fact sheets, EAF Planning and Implementation Tools, National Aquaculture Legislation Overview (NALO) fact sheets, National Aquaculture Sector Overview (NASO) - fact sheets, National Fishery Sector Overview (NFSO), Regional fishery bodies (RFB) - fact sheets ■ Maps Collections Compilation of aquatic species distribution maps of interest to fisheries, NASO aquaculture maps collection	Has its own software to explore data: FishStatJ Introduction: http://www.fao.org/fishery/statistics/software/fishstatj/en Manual: http://www.fao.org/fishery/static/FishStatJ/FishStatJ_3.05.1-Manual.pdf	http://www.fao.org/fishery/topic/16054/en	
113	Mul-008	WorldFish - ReefBase	Multiple	Ocean extent Ocean assets	CSV/ RTF/ PDF	Uncertain	Country-level data	N/A	The ReefBase Global Database provides country-level data and information, organized by ■ Resources: a description on the location and structure of Coral Reefs, information on the country's Reef Fish resources and Fisheries, and coastal and marine biodiverstiy. ■ Status: country-level information summaries on the status and health of the Coral Reefs and Reef Fish resources, and trends in Fisheries. ■ Threats: various threats and impacts to coral reefs, including Natural (e.g. biological infestations or diseases), Human (e.g. over-fishing or coastal development), Climate (e.g. storms or excessive rainfall), and Bleaching (both narrative and quantitative bleaching reports). ■ Management: coral reef Monitoring activities within a country, Protected Areas with coral reefs, coastal/marine related Legislation, research and management Capacity and Gaps therein, Recommendations to strengthen research and management of coral reef resources.	ReefBase is the official database of the Global Coral Reef Monitoring Network (GCRMN), as well as the International Coral Reef Action Network (ICRAN).	http://www.reefbase.org/main.aspx	
114	Mul-009	The Nature Conservancy - Atlas of Ocean Wealth	Multiple	Ocean condition Ocean service supply	Online Map application	Ongoing (since 2014)	Field data and expert knowledge modelling data	High resolution	Recreation and tourism, natural coastal protection, blue carbon, fisheries	A collection to data of tourism, mangroves, coral reef and fishing. The map explorer also can show some other datasets The work includes more than 35 novel and critically important maps that show how nature's value to people varies widely from place to place.	http://oceanwealth.org/resources/atlas-of-ocean-wealth/	https://oceanwealth.org/wp-content/uploads/2016/07/Atlas_of_Ocean_Wealth.pdf
115	Mul-010	NOAA - One Stop	Multiple	Ocean condition Ocean asset Ocean extent	See each dataset (at least includes NetCDF)	Ongoing	See each dataset	See each dataset	A new version search engine of all NOAA datasets, including geophysical, oceans, coastal, weather and climate data		https://data.noaa.gov/onestop/#/	
116	Mul-011	NOAA Global Data Explorer	Multiple	Ocean condition Ocean extent	Map/ Google Earth file	Ongoing	See each dataset	See each dataset	Data on the ocean, atmosphere, land, cryosphere, climate, and weather. Ocean data including: Temperature: SST, sea temperature, heat content Chemistry: salinity, Dissolved Nitrate, Dissolved Silicate, Dissolved Phosphate, Dissolved Oxygen Life: coral, chlorophyll Physical: sea surface height departure, bathymetry	Ocean component of this site includes data on temperature, chemical, biological, and physical properties	https://www.nnvl.noaa.gov/view/globaldata.html	
117	Mul-012	NOAA - Marine Geology and Geophysics	Multiple	Ocean extent Ocean service supply Ocean asset	See each dataset (at least includes MGD77T Exchange/ MAG88T Exchange/ Map/ NetCDF)	Ongoing	See each dataset	See each dataset	■Marine Trackline Geophysical database: bathymetry (single-beam), magnetics, gravity and seismic reflection data collected during marine cruises from 1939 to the present. ■Marine Geology: analyses, descriptions, and images of sediment and rock ■Bathymetry and Global Relief: Bathymetric & Fishing Maps, Estuarine Bathymetry, Great Lakes, IHO Data Center for Digital, Bathymetry (IHO DCDB), International Projects for Ocean Mapping, Multibeam Data, NOS Hydrographic Survey Data, Paleobathymetry of the Circum-Antarctic, Trackline Data, Coastal Elevation Models, Coastal Relief Model (CRM), Coastlines & Coastline Extractor, Global Relief (ETOPO1, ETOPO2, ETOPO5)		https://www.ngdc.noaa.gov/mgg/mggd.html	
118	Mul-013	United States Geological Survey (USGS)	Multiple	Spatial units Ocean extent Ocean service supply	See each dataset	Ongoing	See each dataset	See each dataset	Climate change, effects of climate change, marine biology, marine chemistry, marine ecosystems, marine fishery resources, marine geology, marine geophysics, marine water quality, ocean characteristics, ocean hazards, ocean processes, ocean sciences, oceans, sea-floor characteristics, sea-level change, tsunamis	It is a comprehensive database with a special part of oceans	https://www.usgs.gov/science/science-explorer/Oceans	
119	Mul-014	IUCN & UNEP-WCMC - Protect Planet Ocean	Multiple	Ocean extent Use (designated)	See each dataset	Ongoing	See each dataset	See each dataset	Marine Protected Areas (MPAs), Marine Reserves, Marine World Heritage Sites	Protected Planet is the most up to date and complete source of information on protected areas, updated monthly with submissions from governments, non-governmental organizations, landowners and communities. It is managed by the United Nations Environment World Conservation Monitoring Centre (UNEP-WCMC).	http://www.protectplanetocean.org/	

No.	ID	Name	Component	Data format	Status	Acquisition method	Data resolution	Data Available	Further information	Website	Introduction Document
120	Mul-015	Sea Around Us	Multiple	Ocean service supply Ocean extent	GeoTIF/CSV	Ongoing (since 1999)	Official reported data, estimated data	See each dataset	Fisheries and fisheries-related data at spatial scales that have ecological and policy relevance, such as by Exclusive Economic Zones, High Seas, Large Marine Ecosystems and other spatial scales.	We emphasize catch time series starting in 1950, and related series (e.g., landed value and catch by flag state, fishing sector and catch type), and fisheries-related information on every maritime country (e.g., government subsidies, marine biodiversity). Information is also offered on sub-projects, e.g., the historic expansion of fisheries, the performance of Regional Fisheries Management Organizations, or the likely impact of climate change on fisheries.	http://www.seaaroundus.org/	
121	Mul-016	ESRI Living Atlas	Multiple	Ocean extent Ocean condition	SHP	Ongoing	N/A	N/A	The ArcGIS Living Atlas of the World is the foremost collection of geographic information from around the globe. It includes maps, apps, and data layers related to some physical ocean data.		https://livingatlas.arcSHP.com/en/	
122	Mul-017	Oxford - Ocean Tool for Public Understanding and Science (OcToPUS)	Multiple	Ocean extent Ocean condition Ocean service use	See each dataset (at lesat including PNG/ GeoTIFF/ NetCDF)	Ongoing	See each dataset	A resampled spatial resolution of 0.09 degrees (approximately 10km), at various temporal resolutions (1 month, 1 year, 10 years, 50 years)	■Zonations: Exclusive economic zones (EEZ), Oceans and seas, Marine protected areas (MPA), Marine ecoregions of the world ■Biodiversity: species distribution, coastal ecosystems, deepsea ecosystems ■Bathymetry: Bathymetry (depth), Bathymetry (aspect), Bathymetry (slope), Bathymetry (roughness), Ocean water volume, Distance from land to sea ■Processes: sea surface temperature, sea surface salinity, sea ice fraction, net primary production, chlorophyll chl1, turbidity kd490 ■Environment: Sea water temperature (10 years mean), Sea water salinity (10 years mean), Sea water phosphate (60 years mean), Sea water oxygen (60 years mean), Sea water nitrate (60 years mean), Sea water silicate (60 years mean) ■Human impact: Marine Mining Contract for Exploration Areas, World Port Index, Global Population ■Ship density: Maritime traffic density (All types), Maritime traffic density (Cargo), Maritime traffic density (Tanker), Maritime traffic density (Fishing) ■Bathymetric: ESRI Ocean	137 standard depth levels (if applicable) and spanning over a time range of up to 52 years (1964 – present). Metadata are ingested into the file headers and a unified coastline is applied to all datasets. Vector datasets are provided with an adaptive scale-dependent coastline	https://octopus.zoo.ox.ac.uk/beta	
123	Mul-018	LEGOS - Doppler Orbitography and Radiopositioning Integrated by Satellite (DORIS)	Multiple	Ocean condition Ocean extent	See each dataset (at least includes NetCDF)	Ongoing (since early 1990s)	Satellite data (altimetric measurements)	High resolution	sea level variations, seafloor tectonic structures	Seafloor topography by altimetry (high-resolution altimetry data of the ERS-1 mission led to the production of a global bathymetric map)	http://www.legos.obs-mip.fr/observations/doris/resultats http://www.legos.obs-mip.fr/observations/doris/resultats/niveau-de-la-mer/reconstruction-1950-2000	
124	Mul-019	The International Council for the Exploration of the Sea (ICES)	Multiple	Ocean condition Ocean asset Ocean service supply	See each dataset (at least includes CSV/ SHP/ ASCII/ Map)	Ongoing (since 1902)	See each dataset (at least includes in situ data(survey), historical data)	See each dataset	■ **Biodiversity database** hosts seabird and seals abundance and distribution records and is linked to OSPAR, and ICES groups (JWGBIRD, WGMME) ■ **Contaminants, biological effects, and biological community data** are made available through the DOME web portal (Database on Oceanography and Marine Ecosystems). ■ **Eggs and Larvae database** makes available data collected by ichthyoplankton surveys for use by ICES and the wider marine community. ■ **Fish Trawl Survey datasets** collected in connection with the Data Collection Framework (EU-DCF) are managed under the DATRAS portal. ■ **Fish predation** is the focus of the fish stomach data portal. ■ **Historical plankton** is an 'historical' dataset collection, where the dataset is considered complete and there are no immediate plans to update it. ■ **Oceanographic data** which includes temperature, salinity, oxygen, chlorophyll a, and nutrients measurements are made available through the OCEAN web applications. ■ **Impulsive underwater noise** collates data on licensed events such as pile driving, controlled explosions from naval operations across the OSPAR and HELCOM areas. ■ **Vulnerable Marine Ecosystems** hosts data on deep-water VMEs in the North Atlantic	Advance and share scientific understanding of marine ecosystems and the services they provide - and to employ this knowledge to generate state of the art advice on meeting conservation, management and sustainability goals	https://ices.dk/marine-data/data-portals/pages/default.aspx	
125	Mul-020	US National Center for Atmospheric Research/research data archive (NCAR/RDA)	Multiple	Ocean extent Ocean condition	ASCII/ Binary/ NetCDF	Ongoing	See each dataset	See each dataset	This portal contains a large and diverse collection of meteorological and oceanographic observations, operational and reanalysis model outputs, and remote sensing datasets to support atmospheric and geosciences research, along with ancillary datasets, such as topography/bathymetry, vegetation, and land use.	This portal has a rank of monthly/ yearly most Popular Datasets and Usage Statistics and the function of comparing 2 datasets.	https://rda.ucar.edu/	
126	Mul-021	IMO - Global Integrated Shipping Information System	Multiple	Ocean service use Use (designated)	Description	Ongoing	N/A	N/A	Shipping, marine safety, ports	It requires registration to explore the data information	https://gisis.imo.org/Public/Default.aspx	
127	Mul-022	British Oceanographic Data Centre (BODC)	Multiple	Ocean Extent Ocean condition	NetCDF/ ASCII/ Ocean Data View (ODV)	Ongoing (since 1975)	See each dataset	See each dataset	■ International sea level (high frequency delayed-mode data): https://www.bodc.ac.uk/data/hosted_data_systems/sea_level/international/ ■ GEBCO gridded bathymetry data (see more details in this inventory)		https://www.bodc.ac.uk/about/#	
128	Mul-023	Rolling Deck to Repository (R2R) Data Repository	Multiple	Ocean extent Ocean condition	N/A	Ongoing	In situ data (vessels), meteorology station (MET) and thermosalinograph (TSG) data (delivered in real-time), as well as navigation, trackline geophysics and hydrographic (CTD) data.	See each dataset	Geophysical trackline profiles (underway gravity, magnetics, bathymetry, etc) for vessels equipped with these instrument types; and Hydrographic profiles (depth, temperature, salinity, etc from CTD).	R2R provides a gateway through which data are routinely cataloged and deposited in long-term archives, including the NOAA National Centers for Environmental Information (NCEI) (for data) and Chronopolis (for documents). Data are submitted to R2R by vessel operators rather than by individual science parties	https://www.rvdata.us/data	
129	Mul-024	World Register of Marine Species (WORMS)	Multiple	Ocean asset Ocean service use	Aphia structure (10 modules: taxonomy, distribution, traits, specimen information, vernacular names, notes, links, images, identification keys and sources)	Ongoing	Lists of information	N/A	An authoritative and comprehensive list of names of marine organisms, including information (e.g. habitat and species distribution).		http://marinespecies.org/aphia.php?p=checklist	http://marinespecies.org/aphia.php?p=manual

No.	ID	Name	Component		Data format	Status	Acquisition method	Data resolution	Data Available	Further information	Website	Introduction Document
130	Mul-025	Ocean Biogeographic Information System (OBIS)	Multiple	Ocean condition Ocean asset	Online Map/ OBIS-ENV-DATA format	Ongoing	N/A	N/A	OBIS provides information of over 45 million observations of nearly 120 000 marine species, from Bacteria to Whales, from the surface to 10 900 meters depth, and from the Tropics to the Poles. The datasets are integrated so users can search and map them all seamlessly by species name, higher taxonomic level, geographic area, depth, time and environmental parameters.	OBIS is a global open-access data and information clearing-house on marine biodiversity for science, conservation and sustainable development.	http://www.iobis.org/data/	https://obis.org/manual/
131	Mul-026	NASA - Physical Oceanography Distributed Active Archive Center (PODAAC)	Multiple	Ocean condition Ocean asset	NetCDF	Ongoing	Satellite data	See each dataset	Bathymetry/Seafloor Topography, Glaciers/Ice Sheets, Ocean Chemistry, Ocean Circulation, Ocean Heat Budget, Ocean Optics, Ocean Pressure, Ocean Temperature, Ocean Waves, Ocean Winds, Salinity/Density, Sea Ice, Sea Surface Topography, Surface Water		https://podaac.jpl.nasa.gov/datasetlist	
132	Mul-027	International Seabed Authority Maps	Multiple	Use (designated) Ocean asset	SHP	Ongoing	N/A	N/A	Shapefiles of the maps are grouped by minerals - polymetallic nodules (PMN), polymetallic sulphides (PMS) and cobalt-rich ferromanganese crusts (CFC) ; Area maps show the complete list of contractors; individual contractor maps by mineral and the relevant ocean.		https://www.isa.org.jm/maps	
133	Mul-028	The International Comprehensive Ocean-Atmosphere Data Set (ICOADS)	Single	Ocean extent Ocean condition Ocean service use	IMMA format/ CSV/ ASCII/ NetCDF	Ongoing (since1662)	Real-time data, delayed mode data	See each dataset Monthly/ yearly 2° latitude x 2° longitude boxes back to 1800 (and 1°x1° boxes since 1960)	ICOADS includes surface marine data (air temperature, cloud frequency, heat flux, humidity, sea level pressure, sea surface temperature, surface winds, wind stress) spanning the past three centuries, and simple gridded monthly summary products. ICOADS Release 3.1 (R3.1) was completed in October 2017 with data covering 1662-2014, plus preliminary data and products, Release 3.0.1, for 2015-present in near-real-time.	ICOADS is probably the most complete and heterogeneous collection of surface marine data in existence.	https://icoads.noaa.gov/	https://rda.ucar.edu/datasets/ds548.1/
134	Non-001	Long Term Ecological Research (LTER) Network Data Portal	Non-specific classification		See each dataset	Ongoing	See each dataset	See each dataset	long-term ecological research sites		https://www.iode.org/index.php?option=com_content&view=article&id=178:data-access&catid=33&Itemid=141#global	
135	Non-002	Data Portal German Marine Research	Non-specific classification		See each dataset	Ongoing	See each dataset	See each dataset	In this portal, a huge amount of marine data sets are commonly made searchable with direct access and without any registration procedure. Currently this portal provides access to metadata and data from these partner institutes: AWI, BSH, GEOMAR, HZG and MARUM.	It is a product of the Marine Network for Integrated Data Access (MaNIDA) funded cooperatively by the Helmholtz Association	https://www.manida.org/	
136	Non-003	PANGAEA Data Publisher	Non-specific classification		See each dataset	Ongoing	See each dataset	See each dataset	It is a collection of sea scientific open data publication and linked with data used in the research (oceans, biological classification, ecology, biosphere, fisheries)	Data Publisher for Earth and Environmental Science. The information system PANGAEA is operated as an Open Access library aimed at archiving, publishing and distributing georeferenced data from earth system research. The system guarantees long-term availability of its content through a commitment of the operating institutions.	https://pangaea.de/	
137	Non-004	SEA scieNtific Open data Edition(Seanoe)	Non-specific classification		See each dataset	Ongoing	See each dataset	See each dataset	It is a publisher of scientific data in the field of marine sciences		http://www.seanoe.org/	
138	Non-005	Global Earth Observation System of Systems' Platform(GEOSS Platform)	Non-specific classification		See each dataset	Ongoing	See each dataset	See each dataset	It is an earth observation data protal		http://www.earthobservations.org/gci.php http://www.geoportal.org/	