

# Ocean Accounts

## Global Ocean Data Inventory

*Version 1.0 13 Dec 2019*



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# Overview

## Status of ocean data

As basic information for ocean statistics, ocean data play an essential role in accounting. Not only physical, chemical, biological, and geological ocean data which reflect the natural characteristics of the oceans are components of the Ocean Accounting Framework (Figure 1), but also data regarding the impacts of human activities (e.g. fishing, marine tourism, shipping, and marine pollution, etc.) are indispensable.

Ocean data are collected by different agencies, organizations, research institutes, etc. for different themes. For example, National Oceanic and Atmospheric Administration (NOAA) and EU Copernicus-marine environment monitoring service are authoritative ocean research agencies providing global ocean data on sea surface temperature, salinity, sea level anomaly, chlorophyll, etc. Some international organizations like Food and Agriculture Organization (FAO) provides global fishery statistics, and International Maritime Organization (IMO) provides information on ships and marine security.

The existing ocean data inventories have their own purposes of use. For example, Ocean+ Library provided by World Conservation Monitoring Centre (WCMC) is a comprehensive collection of marine and coastal datasets for biodiversity while the Global Earth Observation System of Systems' Platform (GEOSS Platform) focuses on earth observation but has good data collection for the ocean.

## Importance of OCEAN ACCOUNTS Global Ocean Data Inventory

There was no existing data inventory that fully matched the needs of ocean accounting so the **OCEAN ACCOUNTS Global Ocean Data Inventory** was developed. To match the structure of the accounts, this inventory refers to the classification in System of Environmental-Economic Accounting (SEEA) and SEEA Experimental Ecosystem Accounting (EEA), and comes with 7 components: **Spatial units, Ocean Extent, Use (designated), Ocean Condition, Ocean Asset, Ocean Service Supply, Ocean Service Use** (See Table 1 below). An extra component 'Non-specific classification' is designed for those data portals or inventories which are difficult to match the 7 components. Also, a database might include several datasets and has more than one component. 'single' and 'multiple' are used to make the distinction.

Drivers			Ocean Assets:				Ocean Services Supply (physical)		
Specific units	Industry	% to ocean	hectares	Ecosystem Type <sup>2</sup>	Minerals (T)	Energy (MTOE)	Fish stocks (T)	Service (specific units)	Ecosystem Type
SEEA Air emissions			Beginning of period					Provisioning	
SEEA Effluents <sup>1</sup>			+ additions					Regulating and maintenance	
SEEA Solid wastes <sup>1</sup>			- reductions					Cultural	
<sup>1</sup> would benefit from spatial disaggregation			End of period					Abiotic: Minerals, energy, medium for transport	
Ocean governance			Ocean Conditions				Ocean Services Use (physical)		
Specific units	Industry		Specific units	Ecosystem Type <sup>2</sup>	Minerals (T)	Energy (MTOE)	Fish stocks (T)	Service (specific units)	Beneficiary type <sup>4</sup>
Policies, plans and regulations			Acidification (pH)					Provisioning	
Institutions			Eutrophication (BOD)					Regulating and maintenance	
Management practices			Plastics (T)					Cultural	
Technologies			Carbon <sup>3</sup>					Abiotic: Minerals, energy, medium for transport	
SEEA Protection Expenditures			Biodiversity <sup>3</sup>					<sup>4</sup> Disaggregated by coastal/urban/rural, high/low income, male/female	
- research			Temperature (°C)						
- enforcement			Accessibility/quality						
SEEA Goods and Services			<sup>2</sup> Including critical natural capital areas, settlements, coastal infrastructure, protected areas, fishing zones, designated tourist areas, coral reefs, mangroves, coastal beaches...						
- technologies			<sup>3</sup> As in the SEEA-EEA, Carbon and Biodiversity could be full accounts.						
Note: This is a stylistic representation of the SEEA-EEA with additional components required for including sources of land-based pollution, abiotic services (such as minerals, energy and medium for transport), expenditures and governance. This is not as comprehensive as described in the text. Much of the data on flows of land-based pollution, ecosystem types, and condition would be derived from detailed maps and aggregated as shown in the tables for reporting.			SNA for some services <sup>5</sup>				Ocean Services Supply (Monetary <sup>5</sup> )		
			<sup>6</sup> Would benefit from disaggregation by large/small enterprise and linkage to employment by beneficiary type.				Service (monetary unit)		Ecosystem Type
							Provisioning		
							Regulating and maintenance		
							Cultural		
							Abiotic: Minerals, energy, medium for transport		
							<sup>5</sup> Only some services can be valued in monetary terms.		
							Ocean Services Use (Monetary <sup>4</sup> )		
							Service (monetary unit)		Beneficiary type
							Provisioning		
							Regulating and maintenance		
							Cultural		
							Abiotic: Minerals, energy, medium for transport		

**Figure 1** The table view of Ocean Accounts  
<http://communities.unescap.org/environment-statistics/tools/ocean-accounts>

**Table 1** Classification(component) of OCEAN ACCOUNTS Global Ocean Data Inventory

Component	Description
1	<b>Spatial units</b> Existing databases/standards about the classification
2	<b>Ocean Extent</b> Coastal community, topography, geoid, bathymetry, Exclusive Economic zone, geography, islands, distribution of coral, mangrove, seagrass, sponge and saltmarshes, etc.
3	<b>Use (designated)</b> Protected areas, Fishing, Tourism, Shipping, etc. Physical: temperature/ Sea surface temperature, ocean circulation, sea level, waves, tides, winds, sea ice/ glacier, salinity, heat content, mean sea surface, mean dynamic topography, turbidity (reflectance), mixed layer thickness, water pressure, water density, etc.;
4	<b>Ocean Condition</b> Chemical: phosphate, nitrate, silicate, alkalinity, pH, CO2, Oxygen/hypoxia, tritium, etc.;
	Biological: plankton, Chlorophyll, ocean color, oil-spill trajectory, algal bloom, plastics, water quality, etc.
5	<b>Ocean Asset</b> Fish stock, minerals, aquatic plants, oil/ petroleum/ gas, seafloor sediments and rocks, marine species, algae, seaweeds, plankton, whales, dolphins, sea turtles, etc.
6	<b>Ocean Service Supply</b> Fish catch, tourism, mining, etc.
7	<b>Ocean Service Use</b> Trade, transport(use), port, habitat, values at risk (coral bleaching, coral diseases), blue carbon, marine safety/security, shipping, etc.
8	<b>Non-specific classification</b> Databases without a clear classification

By 11<sup>th</sup> Dec 2019, **138** databases were collected in **OCEAN ACCOUNTS Global Ocean Data Inventory**, among which **106** with a single component, **27** with multiple components and **5** with Non-specific classification. The number of databases on ocean conditions is significantly large (**86** among 138), while global mining and fishing, etc. data are not easy to access for confidential reasons. Almost all databases in this inventory are on a global scale, very few research centers mainly focus on collecting regional data but provide good global ocean data products as well. For each database, the inventory records

- Data format
- Status (whether it is ongoing or finished)
- Acquisition method (the ways of data collection, which could be in situ work, modelling, remote sensing, etc.)
- Data resolution (spatial and temporal resolution)
- Data available (the theme of the dataset, e.g. waves, salinity, bathymetry, etc.)
- Further information
- Website link
- Introduction document

### Suggestions and prospection

Currently, this inventory still focuses on describing global ocean data. Descriptions of regional and national ocean data will be added in the future. A future revision will also include guidance on the selection of data.

Users are encouraged to use the most appropriate data for their study area. Local data may be of higher quality than in these global datasets. In the absence of local data, we sincerely hope this inventory could be a starting point. However, some important databases might still be missing. We are looking forward to your comments to make this inventory more comprehensive. Please contact ([stat.unescap@un.org](mailto:stat.unescap@un.org) or [lyutongcai@gmail.com](mailto:lyutongcai@gmail.com))

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## ***Section 1***

# **Spatial Units**

**ID:** SU-001

**Name:** Coastal and Marine Ecological Classification Standard (CMECS)



**Component:** Spatial units

**Data format:** N/A

**Status:** Ongoing

**Acquisition method:** This framework includes physical, biological, and chemical data that are collectively used to define coastal and marine ecosystems.

**Data resolution:** N/A

**Data available:** It is a comprehensive national framework for organizing information about coasts and oceans and their living systems.

**Further information:** 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.

CMECS allows investigators to determine the types of data to be collected. Its structure accommodates data from multiple disciplines, and its use is not limited to specific gear types or to observations made at specific spatial or temporal resolutions.

**Website:** <https://iocm.noaa.gov/cmecs/>

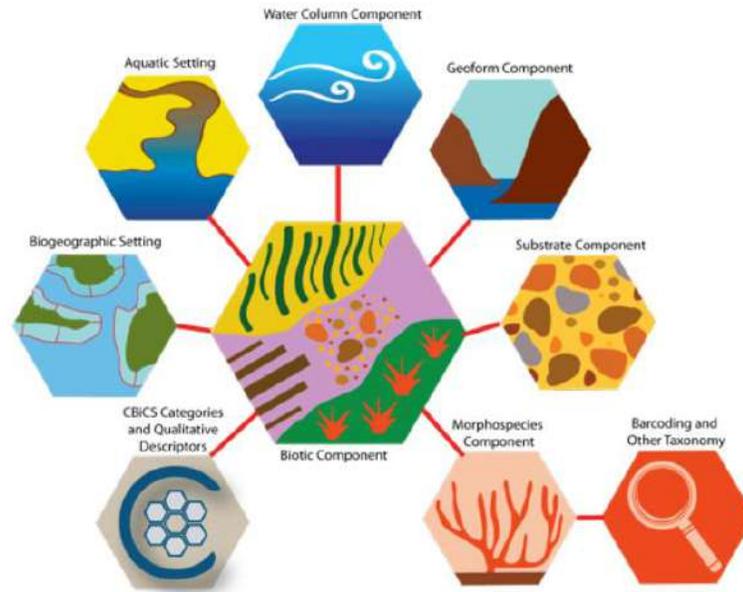
**Introduction document:** [https://iocm.noaa.gov/cmecs/documents/CMECS\\_One\\_Page\\_Description-20160518.pdf](https://iocm.noaa.gov/cmecs/documents/CMECS_One_Page_Description-20160518.pdf)

**ID:**

SU-002

**Name:**

**Combined Biotope Classification Scheme(SBiCS)**



**Component:**

Spatial units

**Data format:**

Online viewer

**Status:**

Ongoing

**Acquisition method:**

N/A

**Data resolution:**

N/A

**Data available:**

It is a hierarchical classification of marine biotopes, including aquatic setting, biogeographic setting, water column component, substrate component, geform component, biotic component, morphospecies component.

**Further information:**

The Combined Biotope Classification Scheme (CBiCS) combines the core elements of the CMECS habitat classification scheme and the JNCC/EUNIS biotope classification scheme.

**Website:**

<http://www.cbics.org/about/>

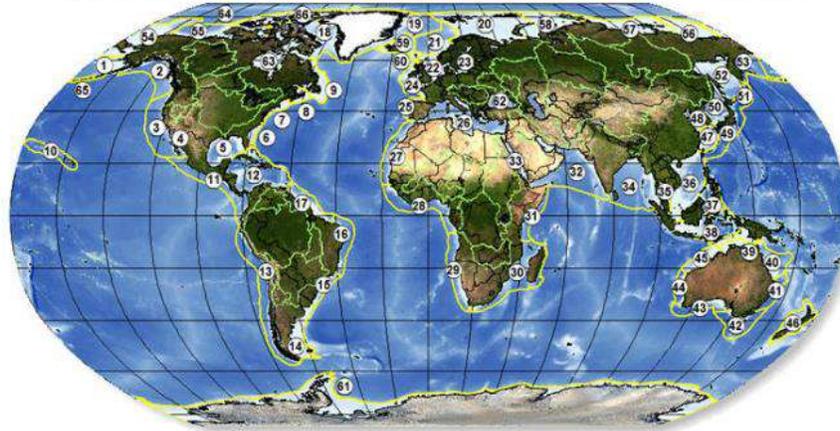
**Introduction document:**

[https://www.researchgate.net/publication/328891619\\_Combined\\_Biotope\\_Classification\\_Scheme\\_CBiCS\\_A\\_New\\_Marine\\_Ecological\\_Classification\\_Scheme\\_to\\_Meet\\_New\\_Challenges](https://www.researchgate.net/publication/328891619_Combined_Biotope_Classification_Scheme_CBiCS_A_New_Marine_Ecological_Classification_Scheme_to_Meet_New_Challenges)

ID: SU-003

Name: Large Marine Ecosystems (LMEs)

### Large Marine Ecosystems of the World and Linked Watersheds



- |                                     |  |                                   |                                   |  |
|-------------------------------------|--|-----------------------------------|-----------------------------------|--|
| 1. East Bering Sea                  | 15. South Brazil Shelf                       | 28. Guinea Current                | 42. Southeast Australian Shelf    | 55. Beaufort Sea                           |
| 2. Gulf of Alaska                   | 16. East Brazil Shelf                        | 29. Benguela Current              | 43. Southwest Australian Shelf    | 56. East Siberian Sea                      |
| 3. California Current               | 17. North Brazil Shelf                       | 30. Agulhas Current               | 44. West-Central Australian Shelf | 57. Laptev Sea                             |
| 4. Gulf of California               | 18. Canadian Eastern Arctic - West Greenland | 31. Somali Coastal Current        | 45. Northwest Australian Shelf    | 58. Kara Sea                               |
| 5. Gulf of Mexico                   | 19. Greenland Sea                            | 32. Arabian Sea                   | 46. New Zealand Shelf             | 59. Iceland Shelf and Sea                  |
| 6. Southeast U.S. Continental Shelf | 20. Barents Sea                              | 33. Red Sea                       | 47. East China Sea                | 60. Feroe Plateau                          |
| 7. Northeast U.S. Continental Shelf | 21. Norwegian Sea                            | 34. Bay of Bengal                 | 48. Yellow Sea                    | 61. Antarctic                              |
| 8. Scotian Shelf                    | 22. North Sea                                | 35. Gulf of Thailand              | 49. Kuroshio Current              | 62. Black Sea                              |
| 9. Newfoundland-Labrador Shelf      | 23. North Sea                                | 36. South China Sea               | 50. Sea of Japan/East Sea         | 63. Hudson Bay Complex                     |
| 10. Insular Pacific-Hawaiian        | 24. Celtic-Biscay Shelf                      | 37. Sulu-Celebes Sea              | 51. Oyashio Current               | 64. Central Arctic Ocean                   |
| 11. Pacific Central-American        | 25. Iberian Coastal                          | 38. Indonesian Sea                | 52. Sea of Okhotsk                | 65. Aleutian Islands                       |
| 12. Caribbean Sea                   | 26. Mediterranean                            | 39. North Australian Shelf        | 53. West Bering Sea               | 66. Canadian High Arctic - North Greenland |
| 13. Humboldt Current                | 27. Canary Current                           | 40. Northeast Australian Shelf    | 54. Northern Bering-Chukchi Seas  |  |
| 14. Patagonian Shelf                |  | 41. East-Central Australian Shelf |                                   |  |

**Component:** Spatial units

**Data format:** SHP/ KML

**Status:** Ongoing

**Acquisition method:** Satallite data and modelled data

**Data resolution:** N/A

**Data available:** 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. seagrasses, corals, mangroves), overfishing, biodiversity loss, and climate change effects.

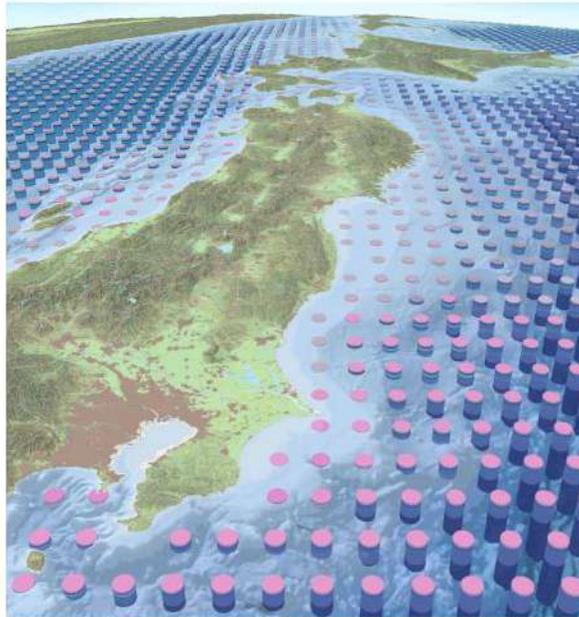
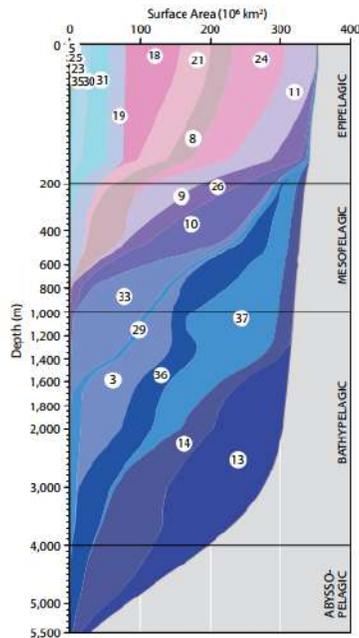
**Further information:** Large Marine Ecosystems (LMEs) are relatively large areas of ocean space of approximately 200,000 km<sup>2</sup> or greater, adjacent to the continents in coastal waters where primary productivity is generally higher than in open ocean areas.

**Website:** <http://lme.edc.uri.edu/>

**Introduction document:**

**ID:** SU-004

**Name:** ESRI - Ecological Marine Units



**Component:** Spatial units

**Data format:** SHP

**Status:** Ongoing

**Acquisition method:** Historical data

**Data resolution:** Minimum spatial resolution:  $\frac{1}{4}^{\circ} \times \frac{1}{4}^{\circ}$

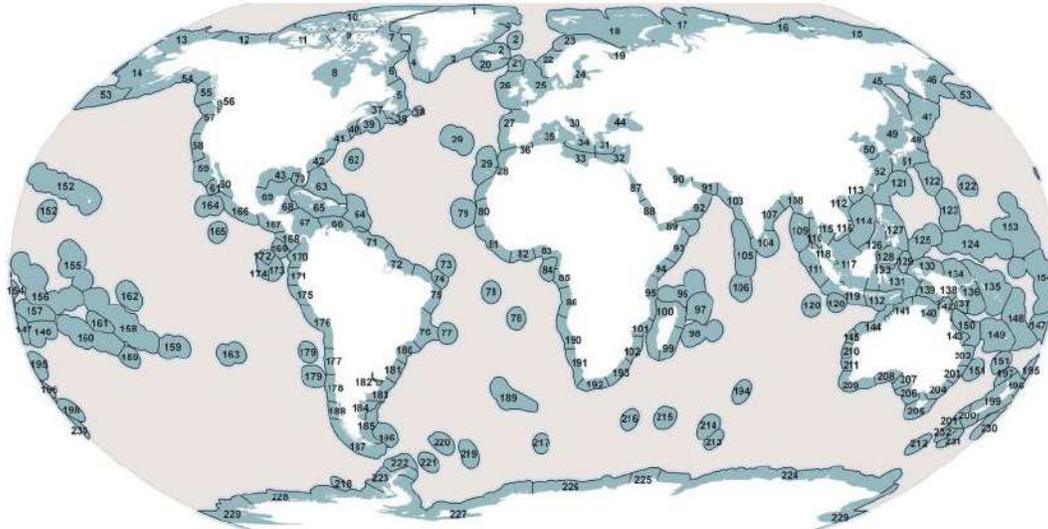
**Data available:** The EMUs are an initial objective partitioning of the ocean using longterm historical average data, and could be extended in the future by adding new classification variables and by introducing functionality to develop time-specific EMU distribution maps.

**Further information:** A new defined Ecosystem Classification

**Website:** <https://www.esri.com/en-us/about/science/ecological-marine-units/overview>

**Introduction document:** <https://tos.org/oceanography/article/a-three-dimensional-mapping-of-the-ocean-based-on-environmental-data>

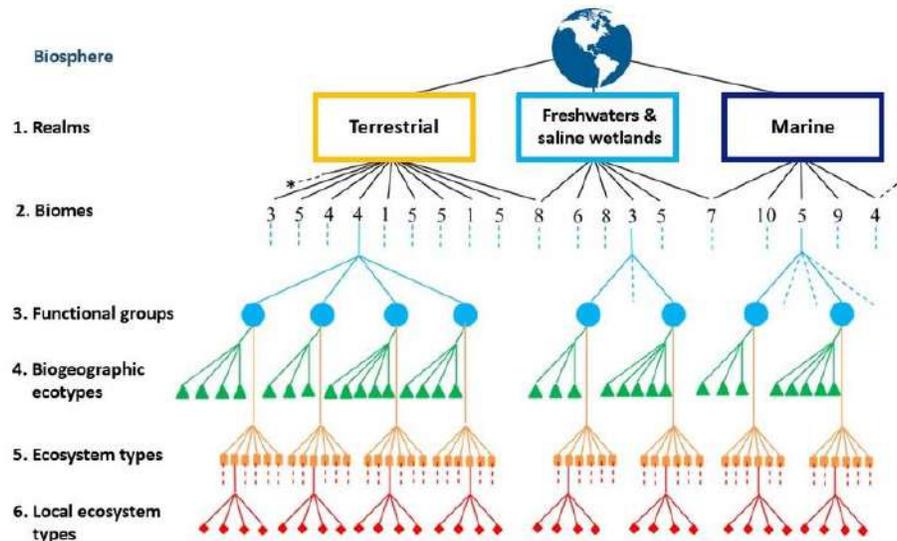
**ID:** SU-005  
**Name:** WWF - Marine Ecoregions of the World (MEOW)



**Component:** Spatial units  
**Data format:** SHP  
**Status:** Finished (2007)  
**Acquisition method:** Underlying data for the identification and definition of biogeographic units from over 230 works in journals, NGO reports, government publications, and other sources.  
**Data resolution:** N/A  
**Data available:** A biogeographic classification of the world's coasts and shelves  
**Further information:** 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.  
**Website:** <https://www.worldwildlife.org/publications/marine-ecoregions-of-the-world-a-bioregionalization-of-coastal-and-shelf-areas>  
**Introduction document:** It can be found on the website above.

**ID:** SU-006

**Name:** IUCN - Global Ecosystem Typology



**Component:** Spatial units

**Data format:** Map (ongoing updated)

**Status:** Ongoing

**Acquisition method:** Historical data, satellite data, modelled data

**Data resolution:** N/A

**Data available:** 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.

**Further information:** 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.

**Website:** <https://iucnrle.org/about-rle/ongoing-initiatives/global-ecosystem-typology/>

**Introduction document:** <https://iucnrle.org/static/media/uploads/references/key-documents/scientific-foundations/keith-etal-2013-scientific-foundations-red-list-ecosystems-en.pdf>

**ID:** SU-007

**Name:** Longhurst Provinces



**Component:** Spatial units

**Data format:** SHP

**Status:** Finished (2010)

**Acquisition method:** N/A

**Data resolution:** Spatial resolution: 1x1°

**Data available:** 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.

**Further information:** 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 recognized four principal biomes: the Polar biome, the Westerlies biome, the Trade winds biome, and the Coastal biome. These four biomes are recognized 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.

**Website:** <https://www.arcgis.com/home/item.html?id=16ac3f05b7c24c34b458a28e8b6f5b30>

**Introduction document:** <http://www.marineregions.org/gazetteer.php?p=details&id=22538>

## ***Section 2***

# **Ocean extent**

**ID:** OE-001  
**Name:** NOAA - ETOPO1 Global Relief Model



**Component:** Spatial units

**Data format:** NetCDF/ GRD98/ BINARY/ XYZ/ Georeferenced TIFF/ PDF/ PNG/ JPEG/ KMZV

**Status:** Finished (in 2008)  
Data from 1940 to 2008

**Acquisition method:** Modelled data

**Data resolution:** Spatial resolution: 1 arc-minute

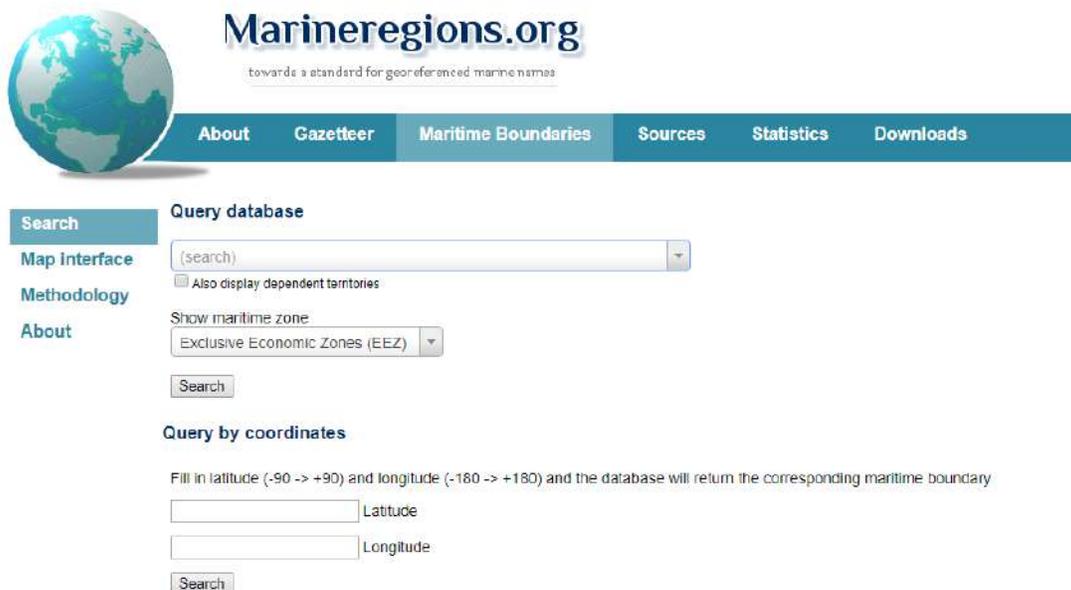
**Data available:** Ocean bathymetry is available in "Ice Surface" (top of Antarctic and Greenland ice sheets) and "Bedrock" (base of the ice sheets).

**Further information:** Horizontal datum: WGS 84 geographic  
Vertical datum: sea level.

**Website:** <https://www.ngdc.noaa.gov/mgg/global/global.html>

**Introduction document:** <https://data.nodc.noaa.gov/cgi-bin/iso?id=gov.noaa.ngdc.mgg.dem:316>

**ID:** OE-002  
**Name:** Marine Regions



**Search**  
**Map interface**  
**Methodology**  
**About**

**Query database**

(search)

Also display dependent territories

Show maritime zone  
Exclusive Economic Zones (EEZ)

Search

**Query by coordinates**

Fill in latitude (-90 -> +90) and longitude (-180 -> +180) and the database will return the corresponding maritime boundary

Latitude

Longitude

Search

**Component:** Spatial units

**Data format:** SHP/ GML

**Status:** Ongoing

**Acquisition method:** N/A

**Data resolution:** N/A

**Data available:** 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.

**Further information:** 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

**Website:** <http://www.marineregions.org/sources.php>

**Introduction document:** <http://www.marineregions.org/>

**ID:** OE-003

**Name:** NOAA - Coral Reef Information System (CoRIS)



**Component:** Ocean extent

**Data format:** Portal (See each dataset)

**Status:** Ongoing

**Acquisition method:** In situ data, satellite data, and publications

**Data resolution:** N/A

**Data available:**

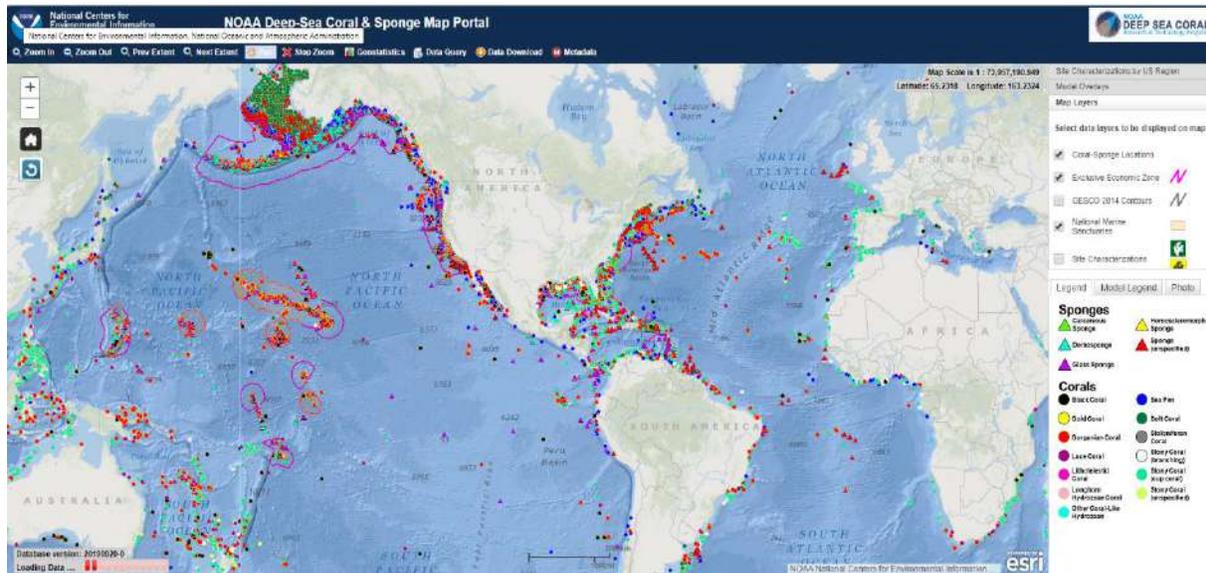
- Benthic habitat maps, Environmental Sensitivity Index maps, bathymetry, shoreline, and backscatter data;
- Coastal Change and Analysis data, LiDAR and IfSAR data, satellite data and products, remotely sensed imagery and aerial photography;
- Coastal and marine observational data including Real time 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

**Further information:** NOAA Coral Reef activities include coral reef mapping, monitoring and assessment; natural and socioeconomic research and modeling; outreach and education; and management and stewardship.

**Website:** <https://www.coris.noaa.gov/>  
<https://www.coris.noaa.gov/search/catalog/main/home.page>

**Introduction document:**

**ID:** OE-004  
**Name:** NOAA - Deep Sea Coral Data Portal (DSCRTP)



**Component:** Ocean extent

**Data format:** Portal (HTML/ CSV / JSON/ KML)

**Status:** Ongoing

**Acquisition method:** Historical records from samples and observations collected during deep-water in situ surveys

**Data resolution:** N/A

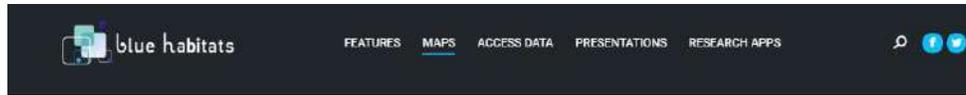
**Data available:** Deep-sea coral and sponge data, images, and technical reports

**Further information:** The database schema accommodates both linear (trawls, transects) and points 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.

**Website:** <https://deepseacoraldata.noaa.gov/>  
<https://www.ncei.noaa.gov/maps/deep-sea-corals/mapSites.htm>

**Introduction document:** [https://data.nodc.noaa.gov/coris/library/NOAA/CRCP/other/other\\_crpc\\_publications/DeepSeaCoralRT/Intro\\_Natl\\_DB\\_for\\_DSCS.pdf](https://data.nodc.noaa.gov/coris/library/NOAA/CRCP/other/other_crpc_publications/DeepSeaCoralRT/Intro_Natl_DB_for_DSCS.pdf)

**ID:** OE-005  
**Name:** Blue Habitats



Maps

Name: Maps

The global seafloor geomorphic features map has been created through collaboration between Geoscience Australia, GRID-Arendal and Conservation International.



**Component:** Ocean extent

**Data format:** SHP/ Figures

**Status:** 2014

**Acquisition method:** N/A

**Data resolution:** Not mentioned

**Data available:** A map of the global distribution of seafloor geomorphic features

**Further information:** 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.

**Website:** [http://www.bluehabitats.org/?page\\_id=9](http://www.bluehabitats.org/?page_id=9)

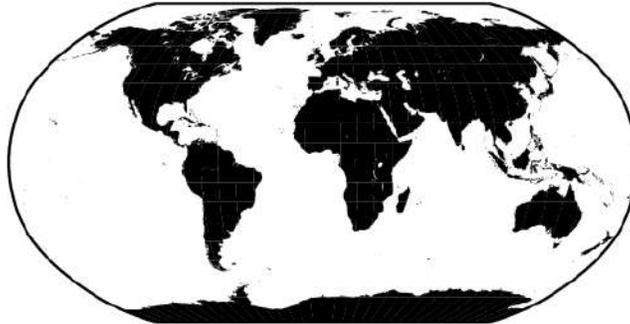
**Introduction document:**

**ID:** OE-006  
**Name:** A Global Self-consistent, Hierarchical, High-resolution Geography Database (GSHHG)

## GSHHG

A Global Self-consistent, Hierarchical, High-resolution Geography Database

---



Version 2.3.7 Released June 15, 2017

GSHHG is developed and maintained by

Paul Wessel, SOEST, University of Hawai'i, Honolulu, HI.  
Walter H. F. Smith, NOAA Geosciences Lab, National Ocean Service, Silver Spring, MD.

**Component:** Ocean extent

**Data format:** NetCDF/ SHP/ Native binary files

**Status:** Ongoing (newest version: Version 2.3.7 Released June 15, 2017)

**Acquisition method:** Historical data

**Data resolution:**

- 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.

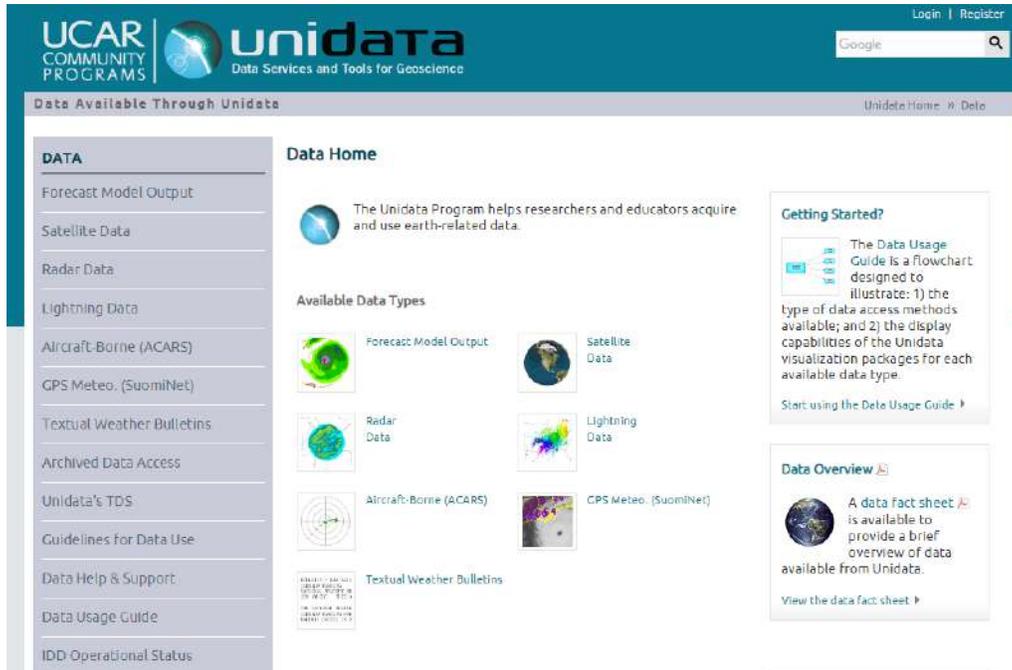
**Data available:** A high-resolution geography data set.

**Further information:** This dataset was amalgamated from three databases in the public domain:  
World Vector Shorelines (WVS).  
CIA World Data Bank II (WDBII).  
Atlas of the Cryosphere (AC).

**Website:** <https://www.soest.hawaii.edu/pwessel/gshhg/>

**Introduction document:**

**ID:** OE-007  
**Name:** Unidata



**Component:** Ocean extent  
**Data format:** NetCDF  
**Status:** Ongoing  
**Acquisition method:** Historical data  
**Data resolution:** See each dataset  
**Data available:** Geographical boundaries  
**Further information:**  
**Website:** <https://www.unidata.ucar.edu/data/>  
**Introduction document:** [https://www.unidata.ucar.edu/publications/factsheets/current/factsheet\\_data.pdf](https://www.unidata.ucar.edu/publications/factsheets/current/factsheet_data.pdf)

**ID:** OE-008  
**Name:** Island Directory



**Component:** Ocean extent  
**Data format:** Website  
**Status:** Uncertain  
**Acquisition method:** Information description  
**Data resolution:** N/A

**Data available:** 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.

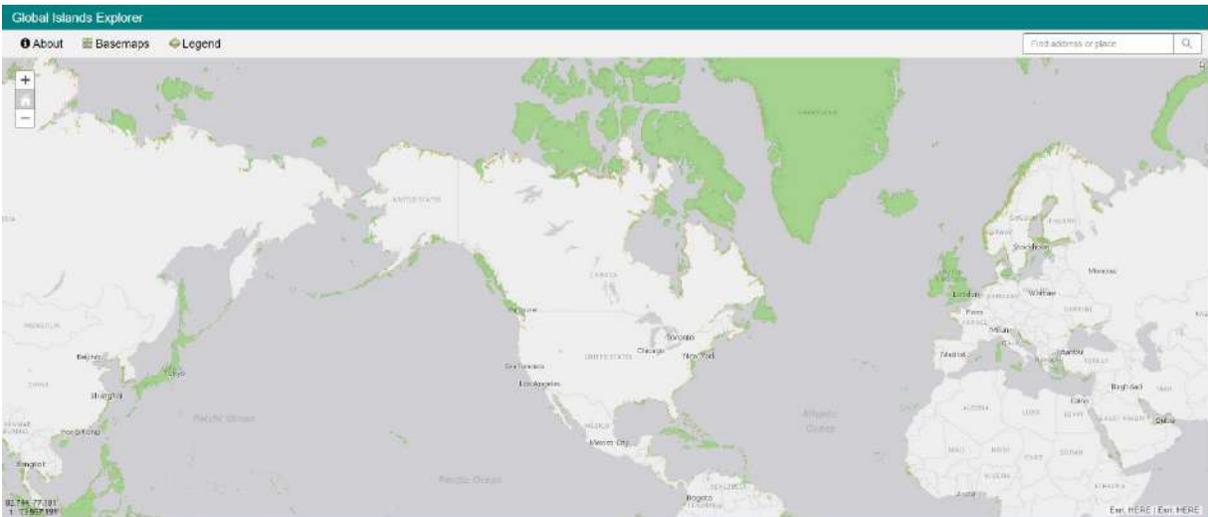
**Further information:**

**Website:** <http://islands.unep.ch/isldir.htm>

**Introduction document:**

**ID:** OE-009

**Name:** **Global Islands Explorer (GIE) Data: Global Shoreline Vector (GSV) and Global Ecological Coastal Units (ECUs)**



**Component:** Ocean extent

**Data format:** Online Viewer/ Map

**Status:** Ongoing

**Acquisition method:** Uncertain

**Data resolution:** N/A

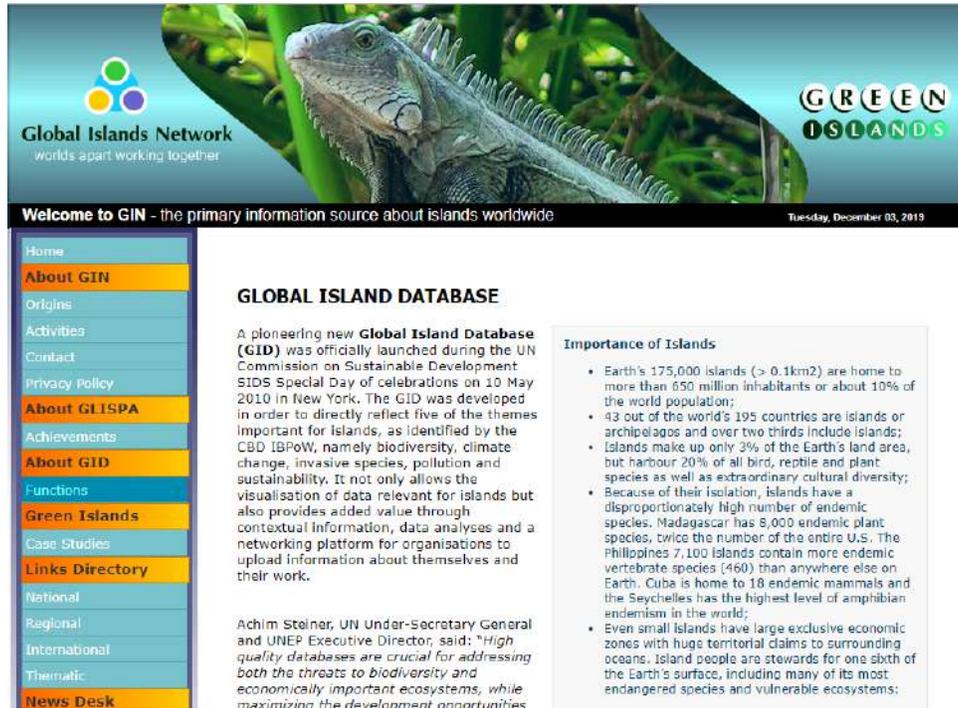
**Data available:** This database includes 340,691 islands, which can be displayed over a number of backdrops including satellite imagery, topographic base maps, light and dark background canvas, etc. A query of any island returns its name (in English and when available - over 60,000 islands currently 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.

**Further information:**

**Website:** 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/>

**Introduction document:**

**ID:** OE-010  
**Name:** Global Island Database (GID)



**Component:** Ocean extent

**Data format:** N/A

**Status:** Ongoing (since 2010)

**Acquisition method:** N/A

**Data resolution:** N/A

**Data available:** 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.

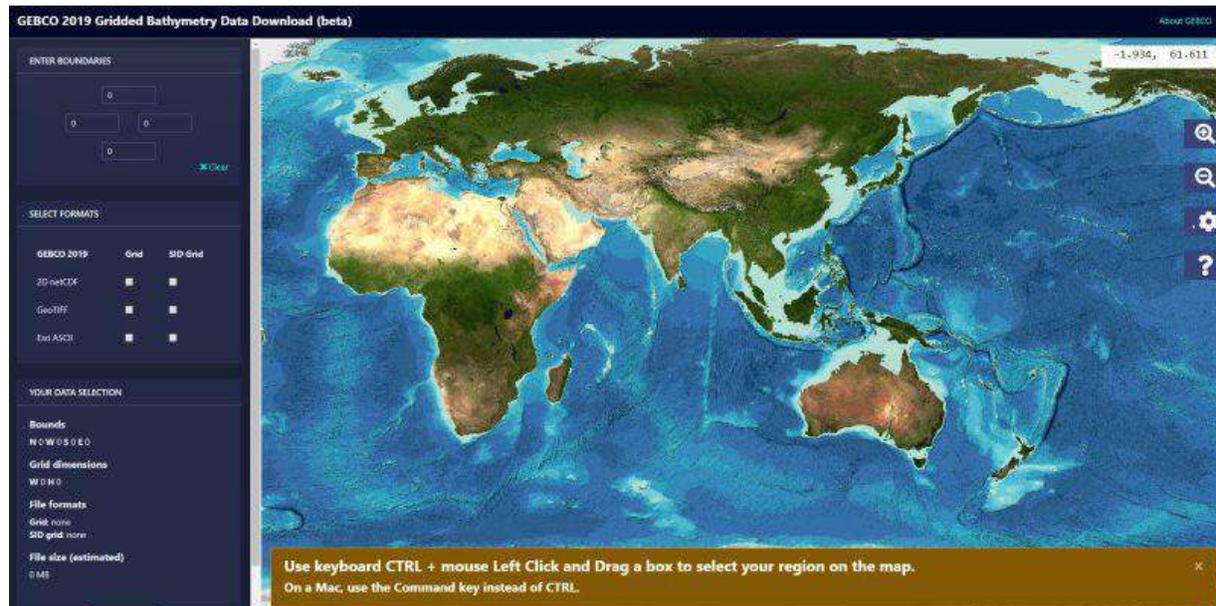
UNEP-WCMC added 37 other spatial datasets including one on invasive species in the Pacific Islands.

**Further information:**

**Website:** [http://www.globalislands.net/about/gid\\_functions.php](http://www.globalislands.net/about/gid_functions.php)

**Introduction document:**

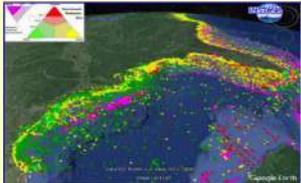
**ID:** OE-011  
**Name:** International Hydrographic Organization(IHO) & UNESCO/IPC - General Bathymetric Chart of the Oceans(GEBCO)



**Component:** Ocean extent  
**Data format:** SHP/ NetCDF /GeoTiff/ ASCII raster  
**Status:** Ongoing (since 1903)  
**Acquisition method:** Historical data, satellite data and modelled data  
**Data resolution:** GEBCO One Minute Grid (2008) : one arc-minute  
GEBCO\_2014 (2015): 30 arc-seconds  
GEBCO\_2019: 15 arc-second grid  
**Data available:** Bathymetry  
**Further information:** GEBCO aims to provide the most authoritative, publicly available bathymetry data sets for the world's oceans.  
**Website:** <https://www.gebco.net/>  
**Introduction document:**

**ID:** OE-012  
**Name:** dbSEABED

**dbSEABED: Information Integration System for Marine Substrates**

Publications and Reports	The Partners	Example Outputs	Ocean Drilling	Hospital
<p>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 latest 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.</p> <p>Many software tools can work on the rich integrated data: Geographic Information Systems (GIS), Relational Databases (RDB), modeling, visualisation, and stratigraphic.</p> <p>Huge data entry efficiencies come from programs that prepare the data for use in standard databases. As evidence of its efficiency, the US, Australian and global coverages together hold integrated data for over 3,000 datasets and 5 million described seafloor sites. The system is vendor-independent and code is shared, so the system will be a legacy well into the future.</p> <p>The scope of the project is large: global extent, shoalwaters to abyss, across all national jurisdictions, public and donated data, numerical and text data types.</p>		<p style="text-align: center;">Advancing with Substrates: Mapping for the Arctic</p>  <p style="font-size: small;">New, detailed Arctic coverage for seabed materials are available for the Barents, Chukchi and Bering Seas, prepared for the Univ. Tromsø, Norway, with applications in fisheries management, Sept 2019. The gathering of the mapped areas follows the EMOD Plan scheme. The projection here is WGS84 Polar and the resolution is 0.65 degrees. (Click to Enlarge)</p>		
<p style="text-align: center;">Seafloor Substrates mapping, Google Earth View</p> 				<p style="text-align: center;"><b>Notes</b></p> <p>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.</p> <p>Point-data based, so spatial resolution improves as more datasets are added. Gridded and vector mappings of the seafloor materials are computed from the point-data coverages. Accuracies are the same as for the original survey data; system precision is 1m; datum is WGS84.</p>

**Component:** Ocean extent

**Data format:** ASCII/ LYR/ QML/ AVL

**Status:** Ongoing

**Acquisition method:** Historical data and modelled data (integrated data for over 3,000 datasets and 5 million described seafloor sites)

**Data resolution:** See each dataset (system precision is 1m)

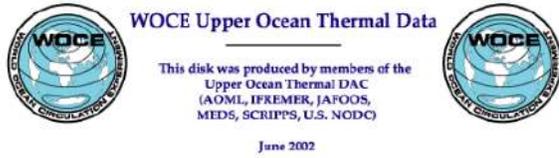
**Data available:** The scale of operation is local, national and global: shorelines, bays, seaways, national EEZ's, ocean basins, and worldwide. The database deals with coastal, estuarine, inshore, continental shelf, continental slope and very deep sea environments.

**Further information:** 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.

**Website:** <https://instaar.colorado.edu/~jenkinsc/dbseabed/>

**Introduction document:** [http://instaar.colorado.edu/~jenkinsc/dbseabed/db9\\_outputs.pdf](http://instaar.colorado.edu/~jenkinsc/dbseabed/db9_outputs.pdf)

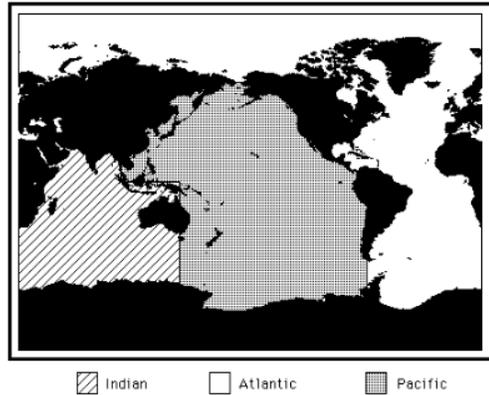
**ID:** OE-013  
**Name:** Marine Regions



You are here: [WOCE-UOT](#) > [summary](#) > bound.htm

### Ocean Boundary Definitions

The following map shows the definitions of ocean boundaries used to divide the data on the CD. Below the figure are tables giving the coordinates of the boundaries.



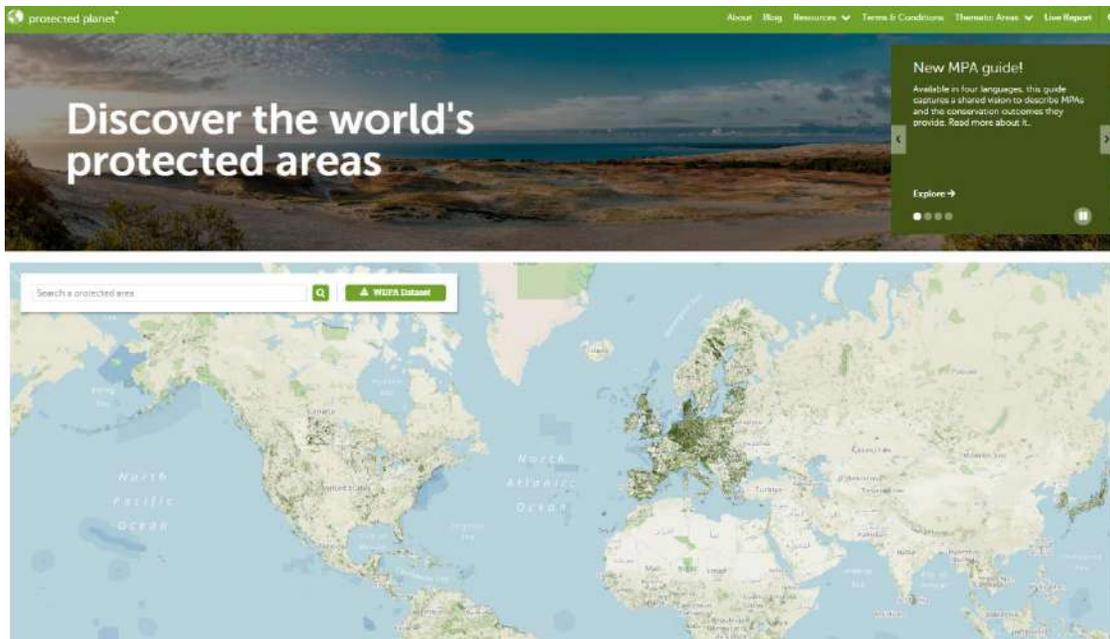
**Component:** Ocean extent  
**Data format:** Location/ Map  
**Status:** Finished (2002)  
**Acquisition method:** N/A  
**Data resolution:** N/A  
**Data available:** This dataset provides geographical definition for the boundaries of Pacific, Atlantic and Indian Ocean  
**Further information:**  
**Website:** [https://www.nodc.noaa.gov/woce/woce\\_v3/wocedata\\_1/woce-uot/summary/bound.htm](https://www.nodc.noaa.gov/woce/woce_v3/wocedata_1/woce-uot/summary/bound.htm)  
**Introduction document:**

## ***Section 3***

**Use (designated)**

**ID:** DU-001

**Name:** UNEP-WCMC & IUCN - Marine Protected Planet & MPAAtlas



**Component:** Use (designated)

**Data format:** CSV/ SHP/ PDF

**Status:** Ongoing (since 2010)

**Acquisition method:** Updated monthly with submissions from governments, non-governmental organizations, landowners and communities

**Data resolution:** N/A

**Data available:** Marine protected area

**Further information:** The most up to date and complete source of information on protected areas.  
Main projection: WGS84, Mollweide projection

**Website:** <https://www.protectedplanet.net/marine>  
<http://www.mpatlas.org/>

**Introduction document:** [http://pp-import-production.s3.amazonaws.com/WDPA\\_Manual\\_1\\_5.pdf](http://pp-import-production.s3.amazonaws.com/WDPA_Manual_1_5.pdf)

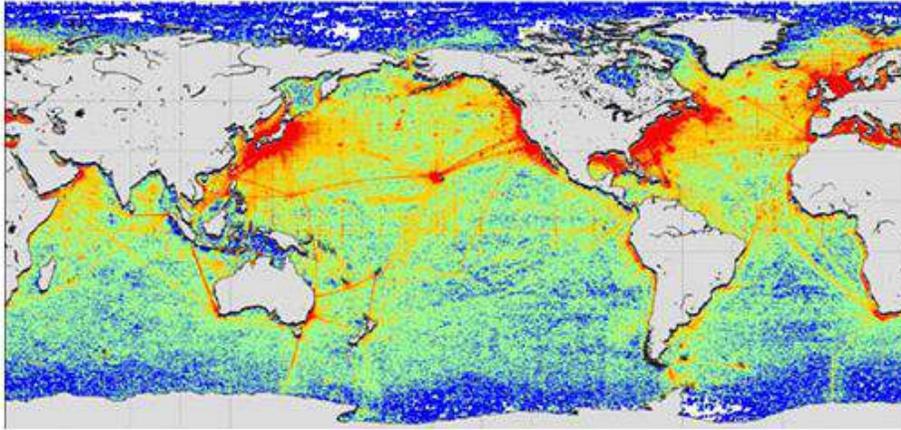
## *Section 4*

# **Ocean condition**

**ID:** OC-001  
**Name:** NOAA - World Ocean Database (WOD)

## WORLD OCEAN DATABASE

The World Ocean Database (WOD) is an NCEI product and an [IODE](#) (International Oceanographic Data and Information Exchange) project. This work is funded in partnership with the NOAA OAR [Ocean Observing and Monitoring Division](#).



**Component:** Ocean condition

**Data format:** NetCDF

**Status:** Ongoing (since 1773)  
Newest version: World Ocean Database 2018

**Acquisition method:** In situ data

**Data resolution:** See each dataset

**Data available:** 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<sub>2</sub>, TCO<sub>2</sub>, Tritium,  $\Delta^{13}\text{Carbon}$ ,  $\Delta^{14}\text{Carbon}$ ,  $\Delta^{18}\text{Oxygen}$ , Freon, Helium,  $\Delta^3\text{Helium}$ , Neon, and plankton.

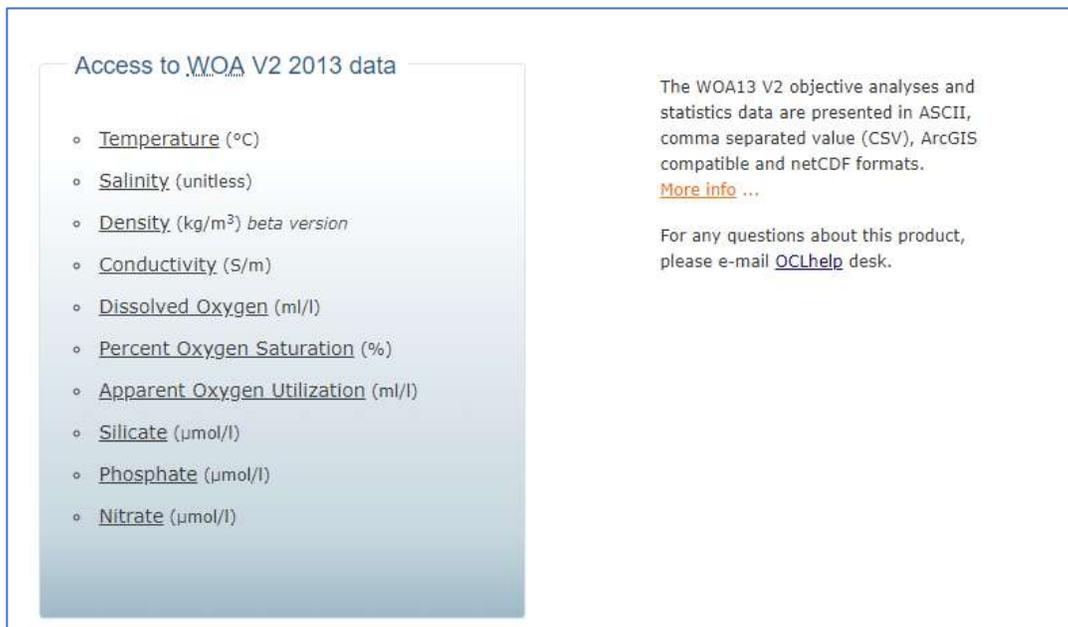
**Further information:** It is the most comprehensive and common ocean database, including over 11 datasets.

**Website:** [https://www.nodc.noaa.gov/OC5/WOD/pr\\_wod.html](https://www.nodc.noaa.gov/OC5/WOD/pr_wod.html)

**Introduction document:** [https://data.nodc.noaa.gov/woa/WOD/DOC/wod\\_intro.pdf](https://data.nodc.noaa.gov/woa/WOD/DOC/wod_intro.pdf)

**ID:** OC-002

**Name:** NOAA - World Ocean Atlas 2013 Version 2



Access to WOA V2 2013 data

- [Temperature](#) (°C)
- [Salinity](#) (unitless)
- [Density](#) (kg/m<sup>3</sup>) *beta version*
- [Conductivity](#) (S/m)
- [Dissolved Oxygen](#) (ml/l)
- [Percent Oxygen Saturation](#) (%)
- [Apparent Oxygen Utilization](#) (ml/l)
- [Silicate](#) (μmol/l)
- [Phosphate](#) (μmol/l)
- [Nitrate](#) (μmol/l)

The WOA13 V2 objective analyses and statistics data are presented in ASCII, comma separated value (CSV), ArcGIS compatible and netCDF formats.  
[More info ...](#)

For any questions about this product, please e-mail [OCLhelp](#) desk.

**Component:** Ocean condition

**Data format:** ASCII/ CSV/ SHP/ NetCDF

**Status:** Ongoing (since 1995)

**Acquisition method:** In situ data

**Data resolution:** 1/4°, 1° (objectively analyzed), and 5° (quality control)

**Data available:** This dataset includes 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.

**Further information:** The most comprehensive and common ocean atlas dataset

**Website:** <https://www.nodc.noaa.gov/OC5/woa13/>

**Introduction document:** <https://www.nodc.noaa.gov/OC5/woa13/readwoa13.html>

ID:

OC-003

Name:

NOAA - Global Ocean Heat and Salt Content

### Global Ocean Heat and Salt Content

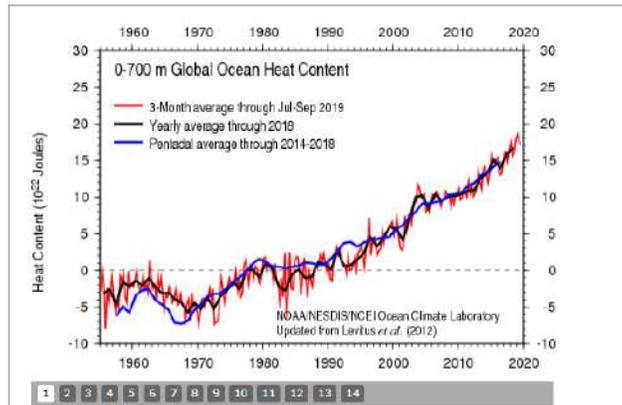
Subscribe to RSS Feed

Data distribution figures for temperature and salinity observations, temperature and salinity anomaly fields for depths 0-2000m, heat content and steric sea level (thermometric, halosteric, total). Temperature anomalies and heat content fields are detailed in *World Ocean Heat Content and Thermometric Sea Level change (0-2000 m), 1955-2010*, pdf (5.1 MB). The same calculations have been extended to keep the fields current and include fields of salinity anomalies, and steric sea level components. Explanation of differences in heat content between published work and online values is outlined in the [note](#) (pdf, 4.2 MB).

*Note: Between 0600 GMT and 1800 GMT Feb 14 2019, data and figures for all ocean heat, salt, and steric sea level variables had erroneous values for year 2019, all four quarters of 2018, and pentad 2014-2015. This was due to a test run of the system without Argo floats - the results of which were meant to be internal only.*

*Note: Between 1100 GMT May 10 2019 and 2100 GMT July 18 2019, data and figures for all salt, halosteric and total steric sea level variables had extreme anomalous values for the first quarter (Jan - Mar) of 2019. The extreme anomalous values were a result of an area of deep (50m-2000m) and extreme freshening (<-3 salinity anomaly) in the Arctic Ocean and were a product of limited in situ drifting buoy float data in the area. After careful consideration, we determined to flag these data. Due to the scarcity of data in the area, the objective analysis of the limited drifting buoy float observations created a very large and fresh area in the Arctic Ocean, which is not representative of actual conditions.*

- Temperature**
  - [Data distribution figures \(0-2000 m\)](#)
  - [Anomaly figures](#)
  - [Climatological fields ASCII files](#)
  - [Anomaly fields ASCII and netCDF files](#)
- Vertically Averaged Temperature Anomaly**
  - [Figures \(0-100 meters\)](#)
  - [Figures \(0-700 meters\)](#)
  - [Figures \(0-2000 meters\)](#)
  - [Global analyzed fields ASCII and netCDF files](#)
  - [Basin time series fields ASCII files](#)
- Heat Content**
  - [Figures \(0-700 meters\)](#)
  - [Figures \(0-2000 meters\)](#)
  - [Global analyzed fields ASCII and netCDF files](#)
  - [Basin time series fields ASCII files](#)
- Thermometric Sea Level**



Component:

Ocean condition

Data format:

Figures/ ASCII/ NetCDF

Status:

Ongoing (since 1955)

Acquisition method:

Historical data, modelled data, in situ corrected bathythermograph data, and Argo data

Data resolution:

N/A

Data available:

Data distribution figures for temperature and salinity observations, temperature and salinity anomaly fields for depths 0-2000m, heat content and steric sea level (thermometric, halosteric, total).

Further information:

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.

Website:

[https://www.nodc.noaa.gov/OC5/3M\\_HEAT\\_CONTENT/](https://www.nodc.noaa.gov/OC5/3M_HEAT_CONTENT/)

Introduction document:

ID:

OC-004

Name:

NOAA - NCEI Ocean Surface Topography Mission (OSTM) /Jason-2 and Jason-3 Satellite Products Archive

**NCEI OSTM/Jason-2 and Jason-3 Satellite Products Archive**

After more than 11 years in orbit and well beyond its three- to five-year mission baseline, the Ocean Surface Topography Mission (OSTM) on Jason-2 will permanently cease acquisition of scientific data at 06:48 UTC on 1 October 2019 due to aging-related issues onboard the spacecraft. Approximately three hours later, the final pass 147 for science cycle 644 will be produced as an OGDG product and disseminated to operational users. IGDR production will cease about 2.5 days later, GDR production approximately 2 months later. Additional information regarding the OSTM/Jason-2 mission will follow in the coming days in the form of a joint press release from CNES, NASA/JPL, NOAA, and EUMETSAT.

The operation of the Jason-3 reference mission remains nominal and its continued data production will not be affected in any way.

**Latest Updates**

- [Jason-2/3 Data News](#)
- [Live Jason-2/3 Data Quality Monitoring](#)
- [Level-2 X-GDR Operations Messages](#)

**Introduction**

This site contains an overview of the NOAA services being provided by the Satellite Oceanography Group of National Centers for Environmental Information (NCEI) for the Ocean Surface Topography Mission (OSTM)/Jason-2 and Jason-3 satellite altimetry missions.

**Background**

The OSTM/Jason-2 satellite launched 20 June 2008 and is the latest in a series of ocean altimeter missions designed to observe ocean circulation, sea level rise, and wave heights. Earlier altimeter missions include *Geosat* and *Geosat Follow-On* satellites, which flew in 1985-1989 and 1990-2000, respectively, and the *TOPEX/Poseidon* (1992-2005) and *JASON-1* (2001-present) missions, which were launched into the same orbit now occupied by OSTM/Jason-2. Jason-3 is a follow-on mission to OSTM/Jason-2, which was launched on January 17, 2016. Jason-3 will secure the continuity of high quality ocean altimetry measurements in support of climate monitoring, operational oceanography and seasonal forecasting.

**Jason-3 Level-2 X-GDR Data Access**

- **HTTP:** <http://data.nodc.noaa.gov/jason3/>
- **FTP:** <ftp://ftp.nodc.noaa.gov/pub/data.nodc/jason3/>
- **THREDDS:** <http://data.nodc.noaa.gov/thredds/catalog/jason3/catalog.html>
- **Jason-3 Products Handbook** [is](#)

**Jason-2/3 Archive Quality Monitoring**

Subscribe to RSS feed [\[ What is RSS? \]](#)

**Jason-2/3 X-GDR Operations Messages**

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**Archive Details**

1. [Requirements](#)
2. [Strategy](#)
3. [Submission Agreement](#)
4. [Services](#)

**Related altimeter datasets and products**

These links will take you out of NCEI and we have no control over the content or whether these sites are kept up-to-date. Note that many of these sites require you to create a username and password in order to access the data.

- [NASA and NOAA Altimetric and Ocean Surface Topography Data Information](#)
- [RAIDS \(Radar Altimeter Database System\) -](#)
- [CTOH: high-frequency along-track data and coastal products](#)
- [PISCO: experimental coastal products for Jason-2](#)
- [AVIS Data Center](#) a sister site with the official Jason-2 XGDRs, auxiliary and ancillary data as well as similar records for TOPEX/Poseidon, Jason-1, Envisat, and Cryosat. Hosted by AVISO.
- [AVIS2 \(gridded products and improved delayed-mode products\)](#)

Component:

Ocean condition

Data format:

NetCDF

Status:

Ongoing (since 1985)

Acquisition method:

Satellite data (near Real time data)

Data resolution:

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 minutes

Data available:

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

Further information:

Website:

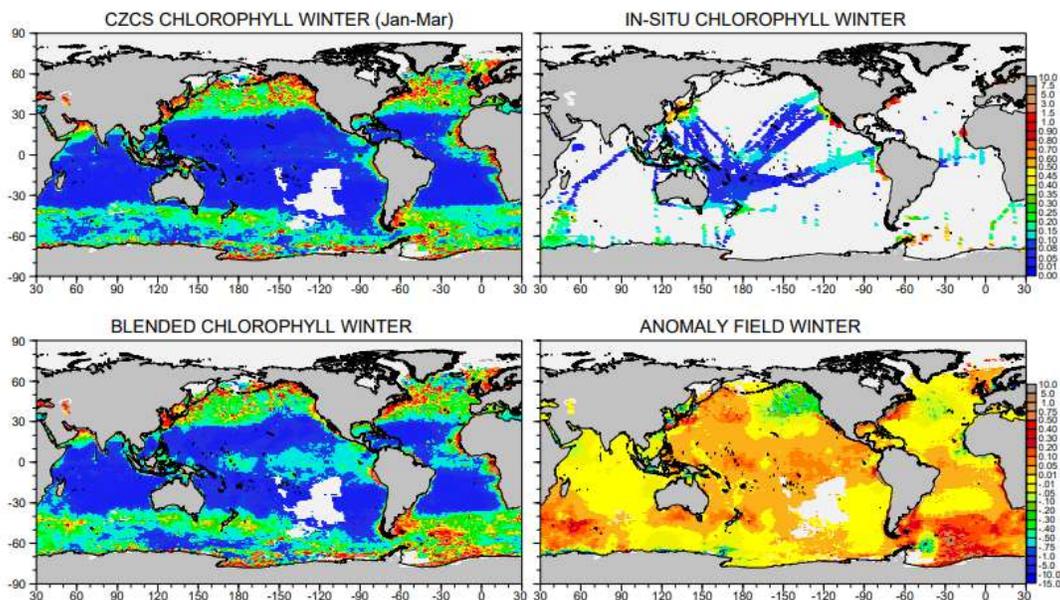
<https://www.nodc.noaa.gov/SatelliteData/jason/>

Introduction document:

[https://www.nodc.noaa.gov/media/pdf/jason2/j3\\_user\\_handbook.pdf](https://www.nodc.noaa.gov/media/pdf/jason2/j3_user_handbook.pdf)

[https://www.nodc.noaa.gov/media/pdf/jason2/j2\\_user\\_handbook.pdf](https://www.nodc.noaa.gov/media/pdf/jason2/j2_user_handbook.pdf)

**ID:** OC-005  
**Name:** NOAA - Blended In Situ-CZCS Chlorophyll Data Set



**Component:** Ocean condition

**Data format:** ASCII

**Status:** Finished (data from 1978 to 1986)

**Acquisition method:** In situ data and satellite data

**Data resolution:** Spatial resolution: 1° x 1°

**Data available:** Chlorophyll

**Further information:** 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.

**Website:** [https://www.nodc.noaa.gov/OC5/WOA98/pr\\_chlr.html](https://www.nodc.noaa.gov/OC5/WOA98/pr_chlr.html)

**Introduction document:** <https://data.nodc.noaa.gov/woa/PUBLICATIONS/blend.pdf>

**ID:** OC-006  
**Name:** NOAA - NCEI Ocean Color Archive

**NCEI Ocean Color Archive**

**Introduction**

This site contains an overview of the NOAA archive services being provided for Level 2 (L2) and Level 3 (L3) ocean color (OC) products generated by the NOAA [CoastWatch/OceanWatch Program](#) (a.k.a. CoastWatch). CoastWatch is an operational NOAA program that processes near real-time satellite data and makes it available to a variety of users in order to manage U.S. coastal resources and understand climate variability. CoastWatch currently produces near real-time ocean color products from multiple platforms. These include 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.

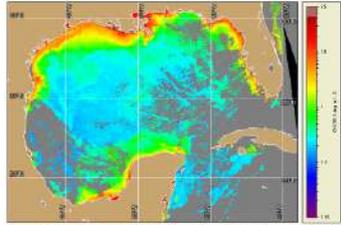
**Archive Strategy**

Archive of these Ocean color products have been implemented by NCEI using NOAA's Comprehensive Large Array-data Stewardship System (CLASS). Under the new NOAA Data Center-CLASS relationship, CLASS will focus on information technology in support of the archive (ingest, archival storage and access) while NCEI is responsible for the overall archive services, including preservation planning, scientific stewardship, documentation and metadata management. An archive team consisting of representatives from CoastWatch, NCEI and CLASS is currently working to fulfill the archive requirements for these products.

**Ocean Color Product Information**

The OC Science Quality L2 and L3 Environmental Data Records (EDR) and L1B products are retrieved from the Visible Infrared Imaging Radiometer Suite (VIIRS) onboard the Suomi-National Polar-orbiting Partnership (SNPP) satellite from January 2, 2012. The data are produced by NESDIS Center for Satellite Applications and Research (STAR) OC team using the Multi-Sensor Level-1 to Level-2 (MSL12) ocean color data processing system. Science quality OC EDR are produced using the significantly improved VIIRS Sensor Data Records (SDR or Level-1B data), which are generated by the OC team (named OC-SDR) using both the solar and lunar approaches, and assimilated ancillary input data (as opposed to model predicted data used in near-real time data production). MSL12 and the OC-SDR calibration improvements were developed by the STAR OC team.

The L2 ocean color products generated by CoastWatch from SeaWiFS, MODIS, and MERIS data consist primarily of spatial information on chlorophyll-a concentration, as well as turbidity (reflectance), covering 13 CoastWatch regions globally. Products derived from all three sensors have approximately 1 km-per-pixel resolution, and are delivered as both daily and 61-day composites. All files are in CoastWatch Hierarchical Data Format (HDF). The SeaWiFS instrument was launched by Orbital Sciences Corporation on the OrbView-2 (a.k.a. SeaStar) satellite in August 1997, and collected data from September 1997 until the end of mission in December 2010. The MERIS is a medium-spectral resolution imaging spectrometer operating in the solar reflective spectral range and its data covers the time period from April 29, 2002 to April 6, 2012.



*CoastWatch ocean color for Gulf of Mexico from MODIS Aqua, 2009/1/20/2*

**Component:** Ocean condition

**Data format:** Hierarchical Data Format (HDF)

**Status:** Ongoing(since 1997)

**Acquisition method:** Near-Real time data and satellite data

**Data resolution:** Spatial resolution: 1 km-per-pixel resolution

**Data available:** Chlorophyll-a concentration, turbidity (reflectance)

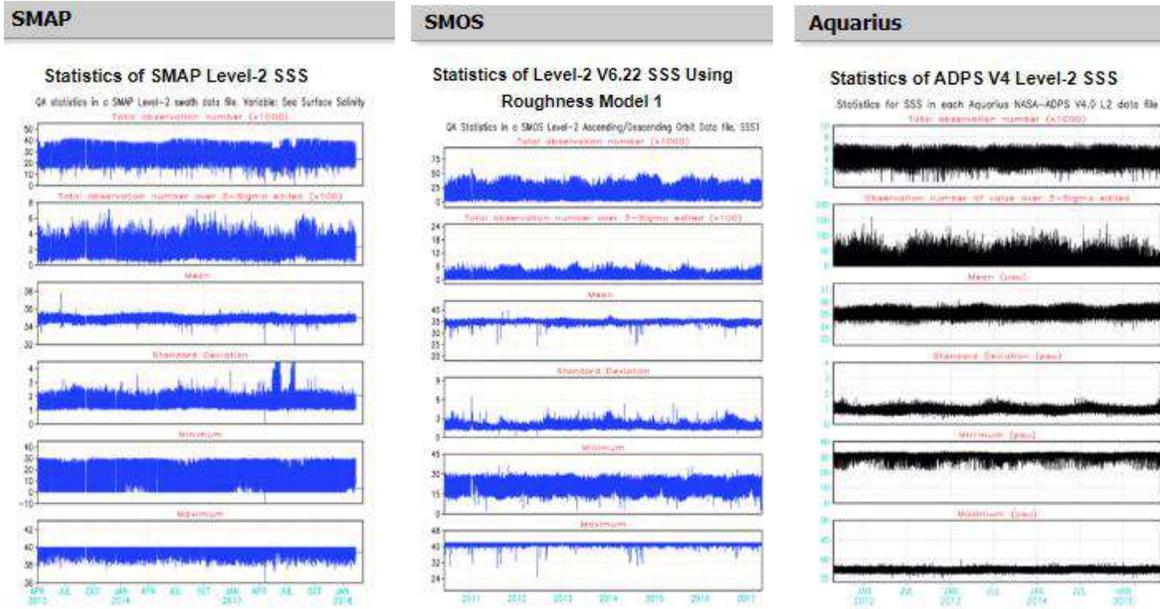
**Further information:** This study included the Science Quality Environmental Data Records (L2 and L3) and L1B products from the Visible Infrared Imaging Radiometer Suite (VIIRS) onboard the Suomi-National Polar-orbiting Partnership (SNPP) satellite, Level 1A (L1A) data from the Sea-viewing Wide Field-of-view 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.

**Website:** <https://www.nodc.noaa.gov/SatelliteData/OceanColor/>

**Introduction document:**

**ID:** OC-007

**Name:** NOAA - Quality Monitoring on Level-2 Sea Surface Salinity (SSS) Products from SMAP, SMOS and Aquarius Missions



**Component:** Ocean condition

**Data format:** NetCDF

**Status:** Ongoing

**Acquisition method:** Satellite data

**Data resolution:** Spatial resolution: 1°  
Temporal resolution:  
SMOS data: monthly and 3-day  
Aquarius data: monthly and 7-day

**Data available:** Sea surface salinity (SST)

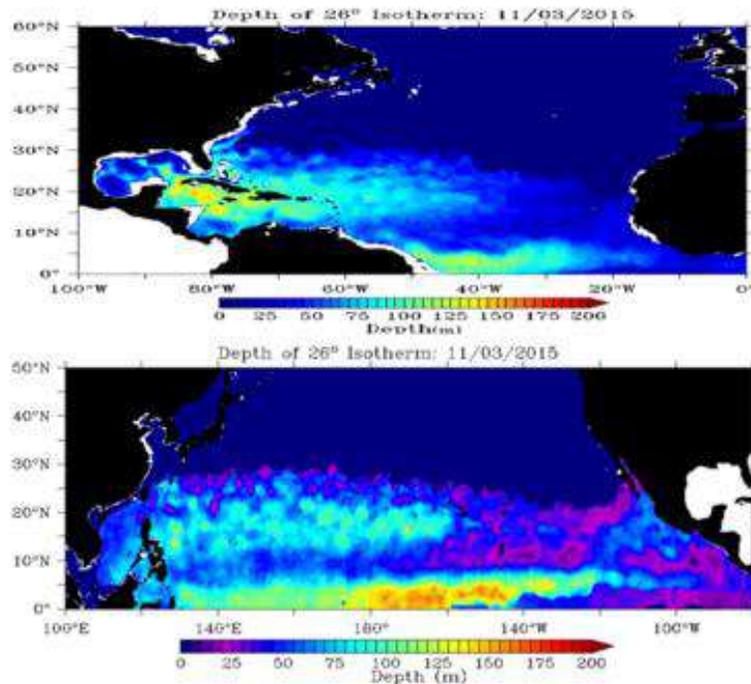
**Further information:** The data quality monitoring systems (DQMS) for NASA's Soil Moisture Active Passive (SMAP), ESA's Soil Moisture Ocean Salinity (SMOS) and NASA's Aquarius satellites Level-2 products have been developed by the National Centers for Environmental Information (NCEI) Satellite Oceanography team.

**Website:** <https://www.nodc.noaa.gov/SatelliteData/sss/>

**Introduction document:**

**ID:** OC-008

**Name:** NOAA - Satellite Ocean Heat Content Suite (SOHCS)



**Component:** Ocean condition

**Data format:** NetCDF/ ASCII/ GIF

**Status:** Ongoing (since 2012)

**Acquisition method:** Satellite data, real-time data

**Data resolution:** Spatial resolution: 0.25°

**Data available:** Ocean heat

**Further information:** The SOHCS product measures the integrated vertical temperature from the sea surface to the depth of the 26°C isotherm.

**Website:** <https://data.nodc.noaa.gov/cgi-bin/iso?id=gov.noaa.nodc:NESDIS-OHC>

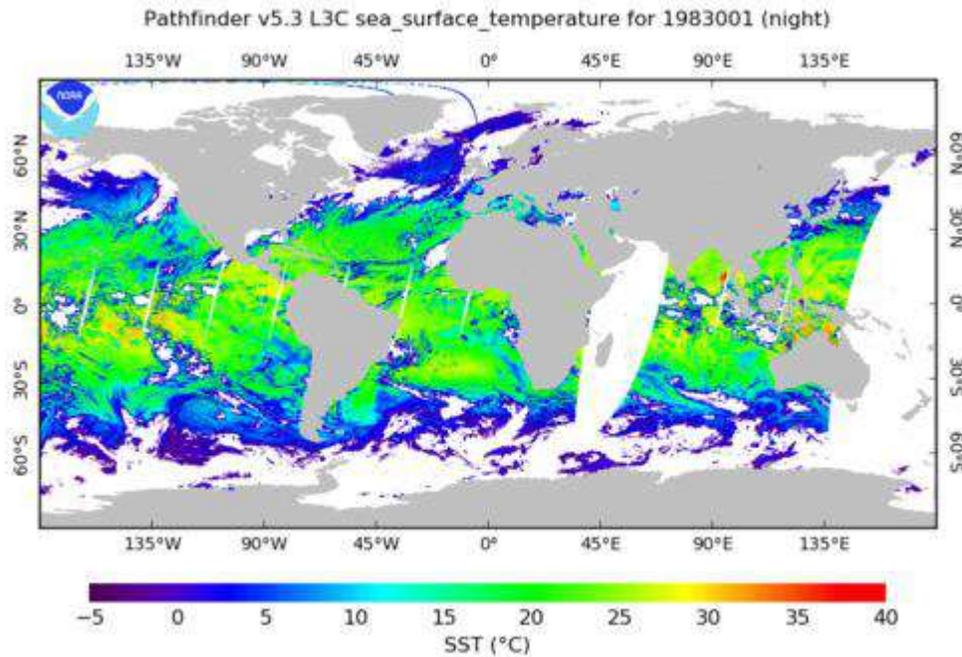
**Introduction document:** <https://journals.ametsoc.org/doi/full/10.1175/2007WAF2006111.1>

<https://journals.ametsoc.org/doi/full/10.1175/2010MWR3189.1>

<http://www.rsmas.miami.edu/groups/upper-ocean-dynamics/research/ocean-heat-content/>

[https://www.ospo.noaa.gov/Products/ocean/ocean\\_heat.html](https://www.ospo.noaa.gov/Products/ocean/ocean_heat.html)

**ID:** OC-009  
**Name:** NOAA - AVHRR Pathfinder version 5.0 and 5.1  
4km global sea surface temperature (SST) monthly harmonic climatologies for 1982-2008



**Component:** Ocean condition

**Data format:** Figures(PNG)/ NetCDF

**Status:** Ongoing (1981)

**Acquisition method:** Satellite data

**Data resolution:** Spatial resolution: 1km - 28km

**Data available:** 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.

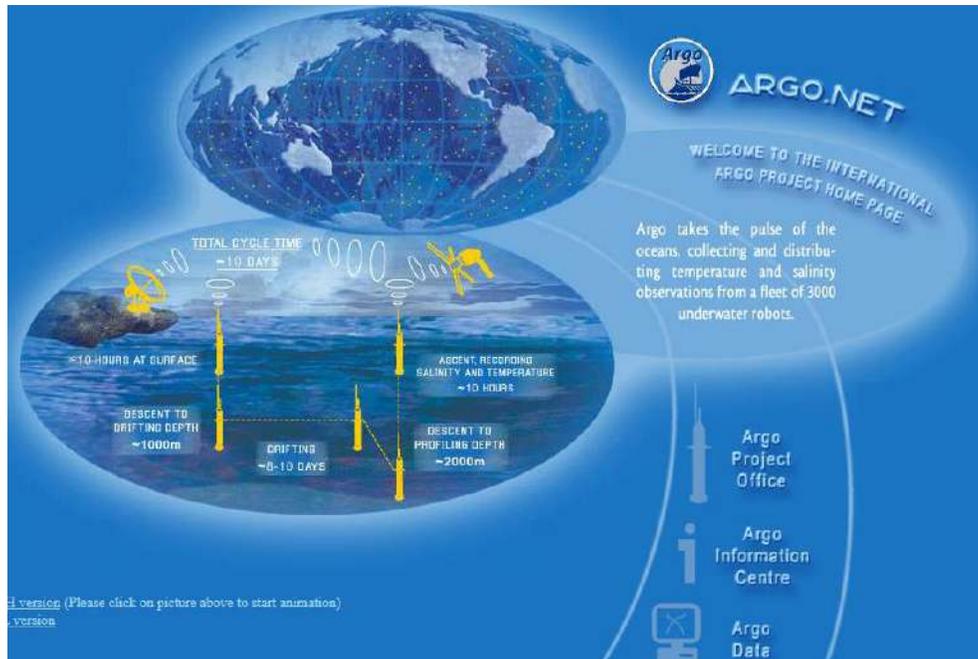
This accession also includes a 'classic,' or mean, monthly sea surface temperature climatology derived from the same Pathfinder time series data.

**Further information:** Data from AVHRR Pathfinder satellite.

**Website:** [https://data.nodc.noaa.gov/cgi-bin/iso?id=gov.noaa.nodc:AVHRR\\_Pathfinder-NCEI-L3C-v5.3](https://data.nodc.noaa.gov/cgi-bin/iso?id=gov.noaa.nodc:AVHRR_Pathfinder-NCEI-L3C-v5.3)

**Introduction document:**

**ID:** OC-010  
**Name:** Argo



**Component:** Ocean condition

**Data format:** NetCDF/ TESAC/ BUFR/ ASIIC

**Status:** Ongoing(since 2000)

**Acquisition method:** In situ data and real-time data

**Data resolution:** Salinity/ temperature profiles: average 3° x 3° spacing

**Data available:** Temperature, salinity, oxygen, chlorophyll, conductivity, nitrate, PH, surface and subsurface currents in the upper 2000 m of the ocean

**Further information:** 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

**Website:** <http://www.argo.net/>  
<http://www.argo.ucsd.edu/>  
<http://www.jcommops.org/board?t=argo>  
<https://www.nodc.noaa.gov/argo/>

**Introduction document:**

**ID:** OC-011

**Name:** NOAA - Oxygen / Apparent Oxygen Utilization (AOU) Content

**Oxygen/AOU pentadal anomaly fields (ASCII files)**

Oxygen/AOU pentadal anomalies are mean differences for the given time period from WOA01 monthly mean climatologies.  
To download the oxygen/AOU anomaly files, you may download an individual file or a tar file of all years for a particular type of a parameter (i.e., all years of the temperature analyzed anomalies in one tar file).

Temperature anomaly fields can be downloaded from [Heat Content](#) page.  
Information how to download and read the data is available from [Instructions](#).

oxygen (ml/l)    AOU (ml/l)

**Pentadal anomalies from 1955-59 to 1994-98**  
Depth range from surface to 3000 m (28 levels)

Analyzed anomalies  
Grid point files  
Data distributions  
Standard deviations  
Get pentadal data

File naming conventions:  
[p][ft][by][ey].dat  
|   |   |   |   |  
|   |   |   |   |   last two digits of ending year  
|   |   |   |   |   last two digits of beginning year  
|   |   |   |   |   file type (an,dd,sd,gp)(see [WOA01](#) documentation)  
|   |   |   |   |   parameter (t=temperature, s=salinity, o=oxygen, A=AOU)

**Pentadal data file links**

pentads.tar	
<a href="#">oxvan5559.dat.gz</a>	<a href="#">oxvan7579.dat.gz</a>
<a href="#">oxvan5660.dat.gz</a>	<a href="#">oxvan7680.dat.gz</a>
<a href="#">oxvan5761.dat.gz</a>	<a href="#">oxvan7781.dat.gz</a>
<a href="#">oxvan5862.dat.gz</a>	<a href="#">oxvan7882.dat.gz</a>
<a href="#">oxvan5963.dat.gz</a>	<a href="#">oxvan7983.dat.gz</a>
<a href="#">oxvan6064.dat.gz</a>	<a href="#">oxvan8084.dat.gz</a>
<a href="#">oxvan6165.dat.gz</a>	<a href="#">oxvan8185.dat.gz</a>
<a href="#">oxvan6266.dat.gz</a>	<a href="#">oxvan8286.dat.gz</a>
<a href="#">oxvan6367.dat.gz</a>	<a href="#">oxvan8387.dat.gz</a>
<a href="#">oxvan6468.dat.gz</a>	<a href="#">oxvan8488.dat.gz</a>
<a href="#">oxvan6569.dat.gz</a>	<a href="#">oxvan8589.dat.gz</a>
<a href="#">oxvan6670.dat.gz</a>	<a href="#">oxvan8690.dat.gz</a>
<a href="#">oxvan6771.dat.gz</a>	<a href="#">oxvan8791.dat.gz</a>
<a href="#">oxvan6872.dat.gz</a>	<a href="#">oxvan8892.dat.gz</a>
<a href="#">oxvan6973.dat.gz</a>	<a href="#">oxvan8993.dat.gz</a>
<a href="#">oxvan7074.dat.gz</a>	<a href="#">oxvan9094.dat.gz</a>
<a href="#">oxvan7175.dat.gz</a>	<a href="#">oxvan9195.dat.gz</a>
<a href="#">oxvan7276.dat.gz</a>	<a href="#">oxvan9296.dat.gz</a>
<a href="#">oxvan7377.dat.gz</a>	<a href="#">oxvan9397.dat.gz</a>
<a href="#">oxvan7478.dat.gz</a>	<a href="#">oxvan9498.dat.gz</a>

**Component:** Ocean condition

**Data format:** ASCII

**Status:** 1955-1998

**Acquisition method:** Observational data

**Data resolution:** Spatial resolution: 1° grid box

**Data available:** O2, AOU, and heat content in the top 100 m of the world ocean (70° S–70° N) between 1955 and 1998 are included in this dataset.

**Further information:** Data from WOA

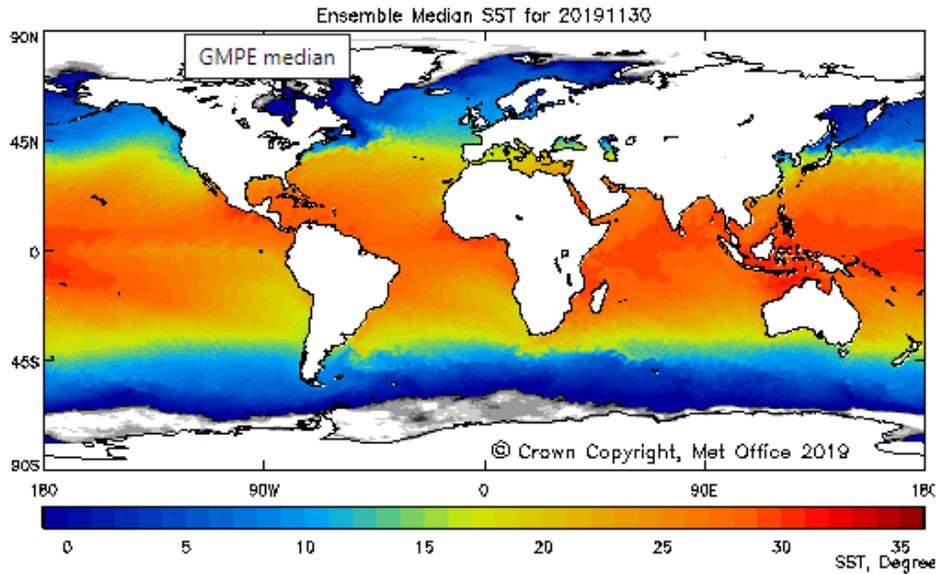
**Website:** <https://www.nodc.noaa.gov/cgi-bin/OC5/PENTAS/anomalydata.pl?parameter=oxy>

**Introduction document:** <https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2004GL022286>

**ID:** OC-012

**Name:** Group For High Resolution Sea Surface Temperature (GHRSSST)

Latest Multi-Product Ensemble (GMPE) median:



**Component:** Ocean condition

**Data format:** Figures/ NetCDF

**Status:** Ongoing (since 2008)

**Acquisition method:** Real-time data (30 days or less) and historical SST (older than 30 days)

**Data resolution:** High resolution

**Data available:** This dataset provides Sea Surface Temperature (SST) data in satellite swath coordinates (L2P), gridded data (L3), and gap-free gridded products (L4).

**Further information:** Gives a detailed definition and classification for SST.

**Website:** <https://www.ghrsst.org/>

**Introduction document:** <https://www.ghrsst.org/ghrsst-data-services/services/>

ID: OC-013

Name: Global Temperature and Salinity Profile Programme (GTSP)

The screenshot shows the NOAA Satellite and Information Service website for the Global Temperature and Salinity Profile Programme (GTSP). The page has a blue header with navigation tabs: Home, Access Data, Submit Data, Public Outreach, and About. Below the header, there is a search bar and a breadcrumb trail: You are here: Home > GTSP. The main content area is divided into a left sidebar and a main content area. The sidebar contains a list of links: About GTSP, Access GTSP Data, User-Defined Data Sets, Real-Time Data Sets, Best-Copy Data Sets, GTSP Code Tables, Data Quality Codes, Data Type Codes, Surface Code PEQ\$, Surface Code PRT\$, Surface Code RCT\$, Platform/Ship Codes, Data Format Description, Documents, Ocean Boundaries, and Software. The main content area features the GTSP logo, a title 'The Global Temperature and Salinity Profile Programme (GTSP)', and a note: 'NOTE: GTSP's Connection with Global Climate Observing System (GCOS): The Global Climate Observing System (GCOS) recognizes the GTSP as one of the international operational activities that provide essential, sub-surface climate variables of temperature and salinity profile data. GTSP 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.' Below the note is a section titled 'IMPORTANT NOTICES:' with a list of bullet points: '26-28 June 2019: The Fifth Session of the Joint JCOMM-IODE Steering Group for the Global Temperature-Salinity Profile Programme will be held in Santiago de Compostela, Spain.', '29 October 2018: The Japan Meteorological Agency operates the GTSP Data Product Centre (GDPC). The GDPC's Monthly Report for August 2018 is available. Next issue will be launched on or about 26 November 2018.', '09 October 2018: Argo platforms now transmit data on the GTS in BUFR format only. We can't ingest this data in the GTSP database at the moment. The Argo data, both historic and real-time, can be accessed in several ways: http://www.argo.ucsd.edu/Argo\_data\_and.html or https://www.nodc.noaa.gov/argo.', '19 September 2018: NCEI-MD is no longer running an OPeNDAP Hyrax server. Thus, that the following URL: http://data.nodc.noaa.gov/opepdap/gtsp/ no longer functions.', and '11 June 2018: The Report and presentation slides of the Fourth Session of the Joint IODE-JCOMM Steering Group for the GTSP is now available.'

Component: Ocean condition

Data format: ASCII/ NetCDF

Status: Ongoing (since 1989)

Acquisition method: 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

Data resolution: Full resolution/ low resolution

Data available: Temperature and salinity

Further information: GTSP 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 datasets are accessible:

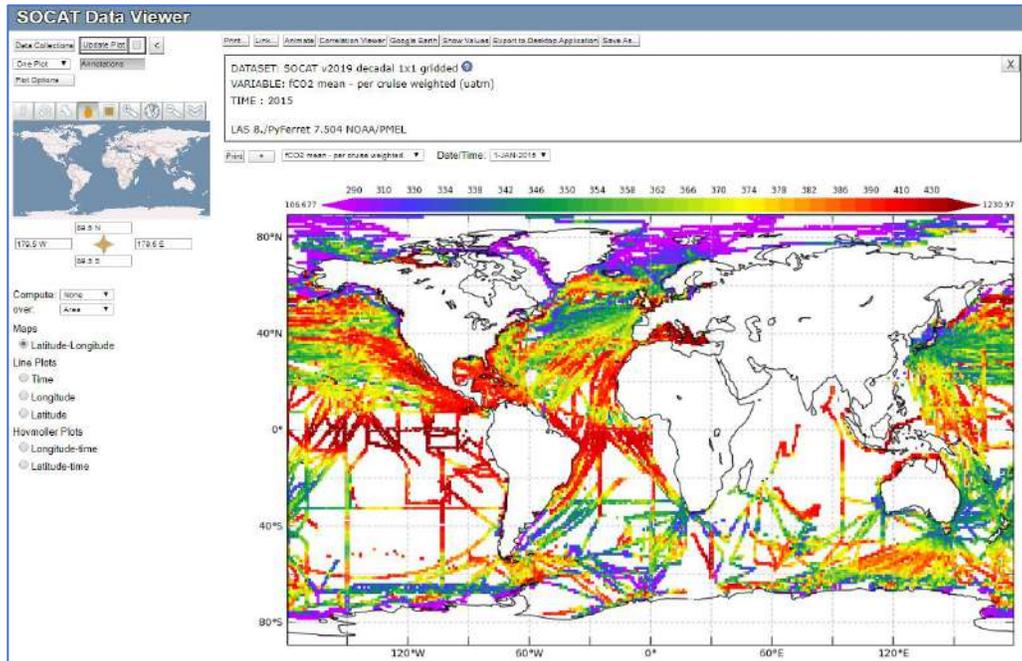
- User-Defined Data Sets (GTSP Web Interface (GWI))
- Real-Time Data Sets
- Best Copy Data Sets

Website: <https://www.nodc.noaa.gov/GTSP/>

Introduction document: <https://www.nodc.noaa.gov/GTSP/document/index.html>

**ID:** OC-014

**Name:** GOOS - Surface Ocean CO<sub>2</sub> Atlas (SOCAT)



**Component:** Ocean condition

**Data format:** NetCDF/ ASCII/ CSV/ ArcGrid

**Status:** Ongoing (since 2007)

**Acquisition method:** Data from observations (V2019 includes 25.7 million observations)

**Data resolution:** SOCAT v2019: decadal 1x1 gridded

**Data available:** Surface ocean fCO<sub>2</sub> (fugacity of carbon dioxide), SST, Salinity  
SOCAT v2019 (1957 to 2019)

**Further information:** All publicly available fCO<sub>2</sub> 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.

**Website:** <https://www.socat.info/index.php/data-access/>

**Introduction document:**

**ID:** OC-015

**Name:** Copernicus Marine Environment Monitoring Service



**Component:** Ocean condition

**Data format:** See each dataset (NetCDF included)

**Status:** Ongoing

**Acquisition method:** Historical and forecast data, satellites, in situ (direct ocean sampling), and numerical models that cover the global ocean

**Data resolution:** See Copernicus Marine Service Catalogue April 2019

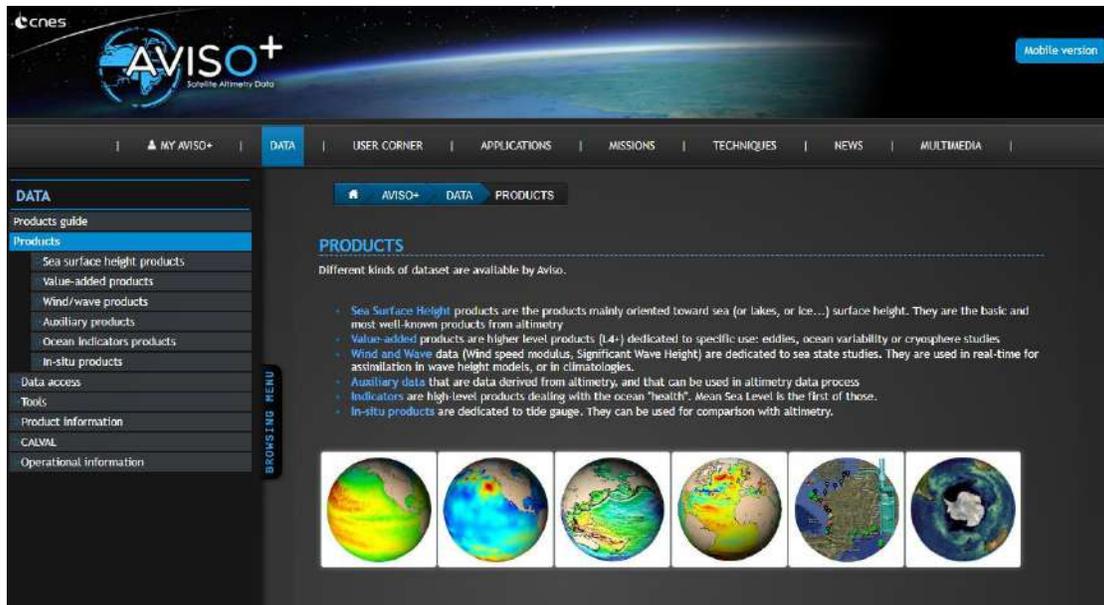
**Data available:** Temperature, salinity, sea surface height, current velocity, mixed-layer thickness, sea ice, wind, wave, plankton, oxygen, nutrients, primary production, reflectance, turbidity, transparency, phytoplankton, Ocean Monitoring Indicators (OMIs)

**Further information:** This database includes many datasets from several satellites.

**Website:** <http://marine.copernicus.eu/>

**Introduction document:** Copernicus Marine Service Catalogue April 2019:  
<http://marine.copernicus.eu/wp-content/uploads/catalogue-cmems.pdf>

**ID:** OC-016  
**Name:** CNES - AVISO+ Satellite Altimetry Data



**Component:** Ocean condition

**Data format:** See each dataset (at least includes NetCDF)

**Status:** Ongoing (since 1992)

**Acquisition method:** Satellite data

**Data resolution:** See each dataset

**Data available:** Altimetry-based data products including sea surface height, sea ice thickness, wave height and wind velocity, tide elevations

**Further information:** 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.

**Website:** <https://www.aviso.altimetry.fr/en/data.html>

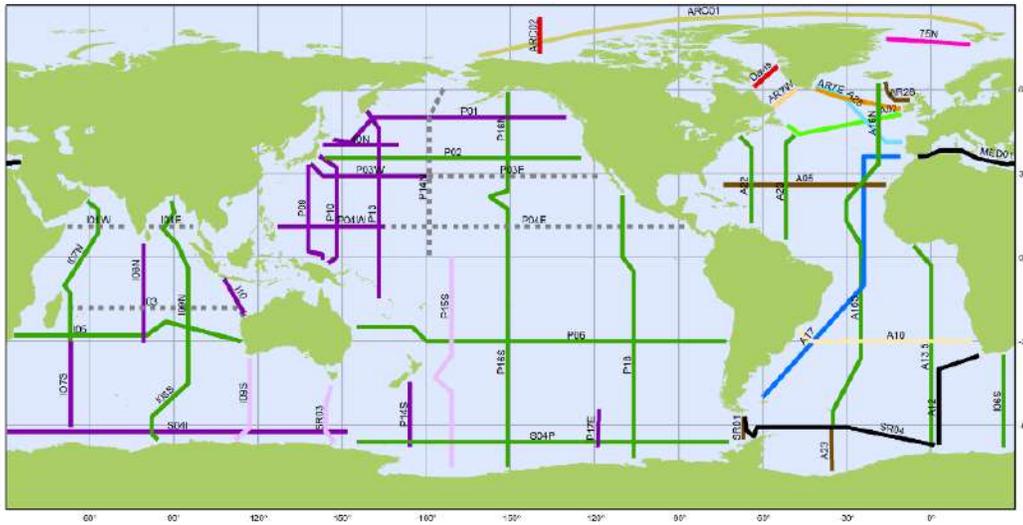
**Introduction document:** [https://www.aviso.altimetry.fr/fileadmin/documents/data/tools/Aviso\\_EGU\\_201904.pdf](https://www.aviso.altimetry.fr/fileadmin/documents/data/tools/Aviso_EGU_201904.pdf)

ID:

OC-017

Name:

Global Ocean Ship-based Hydrographic Investigations Program (GO-SHIP)



GO-SHIP

2012-2023 Survey (55 Core Lines): Lines by Nation

August 2019



Generated by [www.comseps.org](http://www.comseps.org), 11/09/2019

Component:

Ocean condition

Data format:

WHP-Exchange /WOCE/ and NetCDF/ TGM-3M

Status:

Ongoing (since 2007)

Acquisition method:

Observational data (from cruises)

Data resolution:

High-quality, high spatial and vertical resolution  
Approximately decadal resolution

Data available:

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.

Further information:

Data are from ship measurement and seawater sample.

Website:

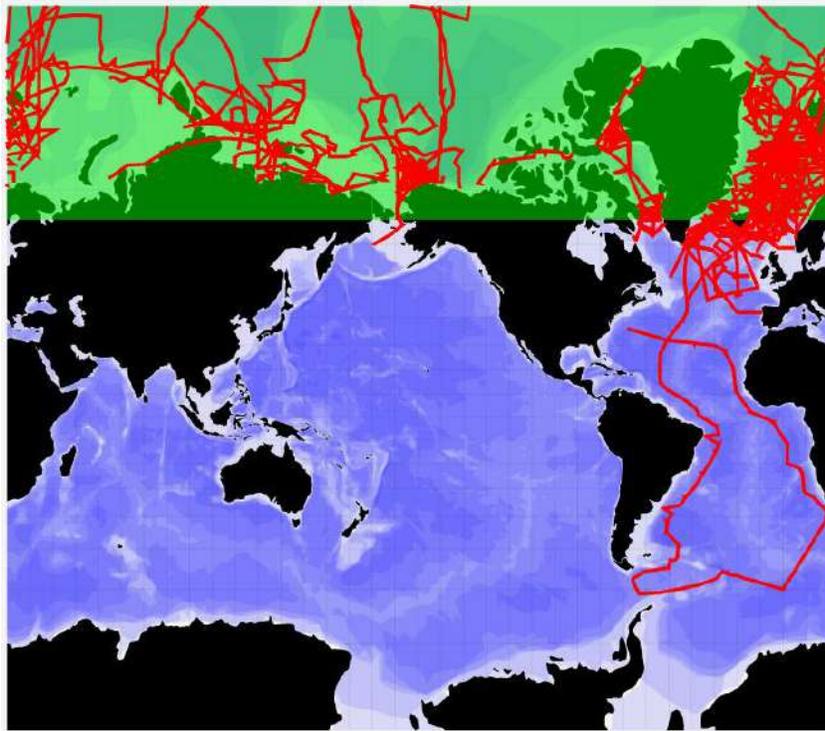
<http://www.go-ship.org/DataDirect.html>

Introduction document:

<http://www.go-ship.org/CMCST-3.pdf>

**ID:** OC-018

**Name:** CLIVAR and Carbon Hydrographic Data Office (CCHDO)



**Component:** Ocean condition

**Data format:** WHP-Exchange /WOCE/ NetCDF

**Status:** Ongoing

**Acquisition method:** Observational data

**Data resolution:** See each dataset

**Data available:** The highest possible quality global CTD and hydrographic data.

**Further information:** 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.

**Website:** <https://cchdo.ucsd.edu/>

**Introduction document:**

ID:

OC-019

Name:

NOAA - Ocean Carbon Data System (OCADS) (formerly CDIAC-Oceans)

**Ocean Carbon Data System (OCADS)**  
(formerly CDIAC-Oceans)

The Ocean Carbon Data System (OCADS) is a data management project located within the NOAA National Centers for Environmental Information (NCEI) in Silver Spring, Maryland. It contains all the CDIAC-Oceans data and serves all functions of the former CDIAC-oceans including dissemination of all newly acquired ocean carbon data... [More...](#)



**Ocean Carbon and Acidification Data Portal**  
Search for individual collection level data sets in the NCEI Ocean Archives, by cruise information (EXPCODE, cruise name, platform name), observation dates and locations, observation categories, or by matching variables or parameters.



**Subsurface/Bottle Data**  
Data from World Ocean Circulation Experiment (WOCE), CLIVAR/GO-SHIP Repeat Hydrography Program, SOCOM Cruises, and Discrete Data Synthesis Products: GLODAPv2.2016, GLODAPv2, GLODAP, CARINA, and PACIFICA.



**Surface / Underway Data**  
Data from Ships of Opportunity Program (SOOP), Surface / Underway Data Syntheses: LDEO Database and SOCAT v5.



**Time-series and Autonomous Platform Data**  
Data from Global Time-Series and Moorings Project  
Data from Autonomous Surface Vehicles (ASV)  
US Moorings Data Viewer



**Coastal Carbon Data**  
Data from U.S. East Coast, U.S. West Coast, and coastal Europe

**Ocean Carbon Dioxide**

Rising atmospheric CO<sub>2</sub> and climate change are increasing ocean temperatures and affecting ocean chemistry (for example, ocean acidification). Monitoring these important changes using ships and other platforms generates large amounts of data from heterogeneous sources. Since its inception in 1993 as the Carbon Dioxide Information Analysis Center (CDIAC) Ocean Carbon Data Management Project, OCADS has been organizing, quality assuring, documenting, archiving and disseminating ocean carbon-related data collected via a number of U.S. and international ocean observing programs.

The OCADS ocean carbon data collection includes discrete and underway measurements from a variety of platforms (including research ships, commercial ships, and buoys). The measurements come from deep and shallow waters from all oceans. Technological advances make it possible to deliver ocean carbon data real-time but questions about instrument reliability and data quality limit this practice at this moment. All ocean carbon data OCADS receives is provided by individual investigators and groups, following initial data review.



Component:

Ocean condition

Data format:

OME/ NetCDF

Status:

Ongoing

Acquisition method:

CDIAC-Oceans data sets, including bottle, underway, coastal, time series and moorings.

Data resolution:

See each dataset

Data available:

- 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 pCO<sub>2</sub> (LDEO) Database V2015, SOCATv5 Database)
- Global CO<sub>2</sub> Time-Series and Moorings Project
- Coastal Carbon Data

Further information:

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).

Website:

<https://www.nodc.noaa.gov/ocads/>

Introduction document:

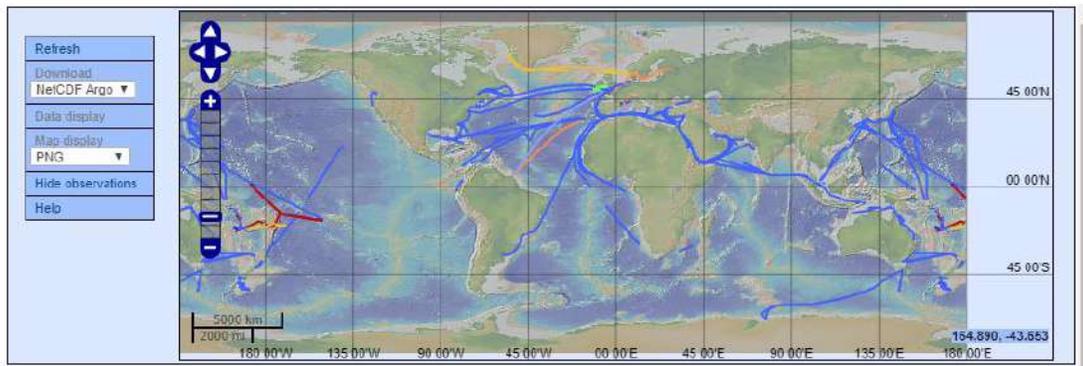
**ID:** OC-020

**Name:** UNESCO/IOC - Global Ocean Surface Underway Data (GOSUD)



### Web access

The web access allows to select and extract data from the GOSUD database. The data collected by GOSUD in real time and near real time are included in the data base as soon as they become available. When a new delayed mode dataset is made available by a PI, the DM-data from the corresponding ships within the period processed replaces all data previously in the database. The data extracted from the web interface thus include the last update of the data base with delayed mode data, complemented by real time data. Note that the files produced by the Web selection tool are in ARGO NetCDF format.



**Component:** Ocean condition

**Data format:** NetCDF/ CVS/ Map

**Status:** Ongoing (since 2001)

**Acquisition method:** In-situ observations (vessels), real-time (monthly) and near real-time (annual), and delayed mode data

**Data resolution:** N/A

**Data available:** Temperature and salinity (underway from the ocean surface down to the mixed layer)

**Further information:** 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.

**Website:** <http://www.gosud.org/>

**Introduction document:** <http://www.gosud.org/Documents>

**ID:** OC-021

**Name:** Global Ocean Data Assimilation Experiment (GODAE)

The screenshot shows the GODAE OceanView website. At the top left is a globe icon. The main header reads "GODAE OceanView". To the right is a search bar. Below the header is a navigation menu with links: Home, About, Organisation, Science, Outreach, Projects, Publications, Documents, News, Calendar, and Contacts. The page content is titled "Ocean forecasting systems" and includes a "Task Teams" sidebar with links like "System descriptions", "Ocean models", "Assimilation characteristics", "System set-up", "System website links", and "National reports". The main text describes the project's goals and lists several key areas: System descriptions, Ocean models, Assimilation characteristics, Routine set-up, System website links, and National Reports.

**Component:** Ocean condition

**Data format:** See each dataset

**Status:** Ongoing (since 1997)

**Acquisition method:** Near-real-time, global ocean data assimilation, and historical oceanographic observations

**Data resolution:** See each dataset

**Data available:** GODAE provides global & regional ocean analysis and forecasting systems on an international level. Temperature, salinity and velocity structures etc. are included.

**Further information:** GODAE is the predecessor of GODAE OceanView and was proposed by Smith & Lefebvre in 1997 to support the development of national ocean prediction systems. GODAE was conceived as a 10-year demonstration of both the feasibility and the utility of high-resolution global-scale ocean predictions and led by an International GODAE Science Team (IGST) incorporating the key players in the teams developing the ocean prediction systems at the national level.

**Website:** <https://www.usgoda.org/index.html>

<https://www.godaie-oceanview.org/science/ocean-forecasting-systems/>

**Introduction document:** See each dataset

**ID:** OC-022  
**Name:** Tropical Ocean Global Atmosphere (TOGA) Coupled Ocean Atmosphere Response Experiment (COARE) TOGA/COARE



**COARE-Met Data Catalogs**

Our Quality Control [Handbook](#).

A list of our current, publically available, data [holdings](#).

Unix compressed file of Time-sorted [ASCII data](#), Level 1 QC'd [18 mb in size!]. See the [README](#) file.

Gzip compressed tar file of the complete [data](#) holdings (ASCII files), Level 1 QC [14 mb in size!]. See the [README](#) file.

Gzip compressed tar file of the complete [data](#) holdings (NetCDF files), Level 1 QC [11 mb in size!]. See the [README](#) file.

[COARE-Met Buoys](#)

[COARE-Met Research Vessels](#)

[COARE-Met Volunteer Observing Ships](#)

[COARE-Met ERS-1 Scatterometer Winds](#)

[COARE-Met NOAA Aeronomy Lab's reprocessed ISS winds \(AL-ISS\)](#)

[COARE-Met LSA-only Surface Stations](#)

[COARE-Met non-LSA Surface Stations](#)

**Component:** Ocean condition

**Data format:** NetCDF/ ASCII

**Status:** Ongoing

**Acquisition method:** Observational data (including standard ship bridge observations, advanced automated buoy, shipboard, and land systems)

**Data resolution:** Spatial resolution: 1-minute (some)

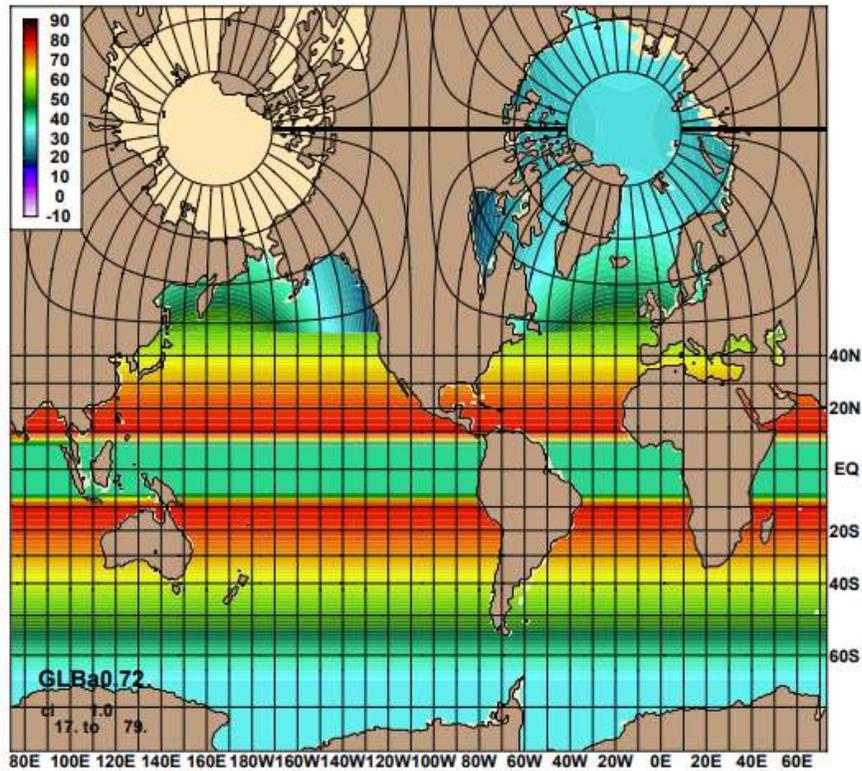
**Data available:** Wind direction and speed, sea temperature

**Further information:**

**Website:** <https://www.coaps.fsu.edu/COARE/coaremet.html>

**Introduction document:** <https://www.coaps.fsu.edu/COARE/qc-handbook/#intro>

**ID:** OC-023  
**Name:** NOAA - Naval Oceanographic Office Global Hybrid Coordinate Ocean Model (HYCOM)



**Component:** Ocean condition

**Data format:** NetCDF

**Status:** Ongoing

**Acquisition method:** Near Real time (prediction)

**Data resolution:** Fine resolution  
Daily data is typically accessible within 48-hrs of the initial runtime

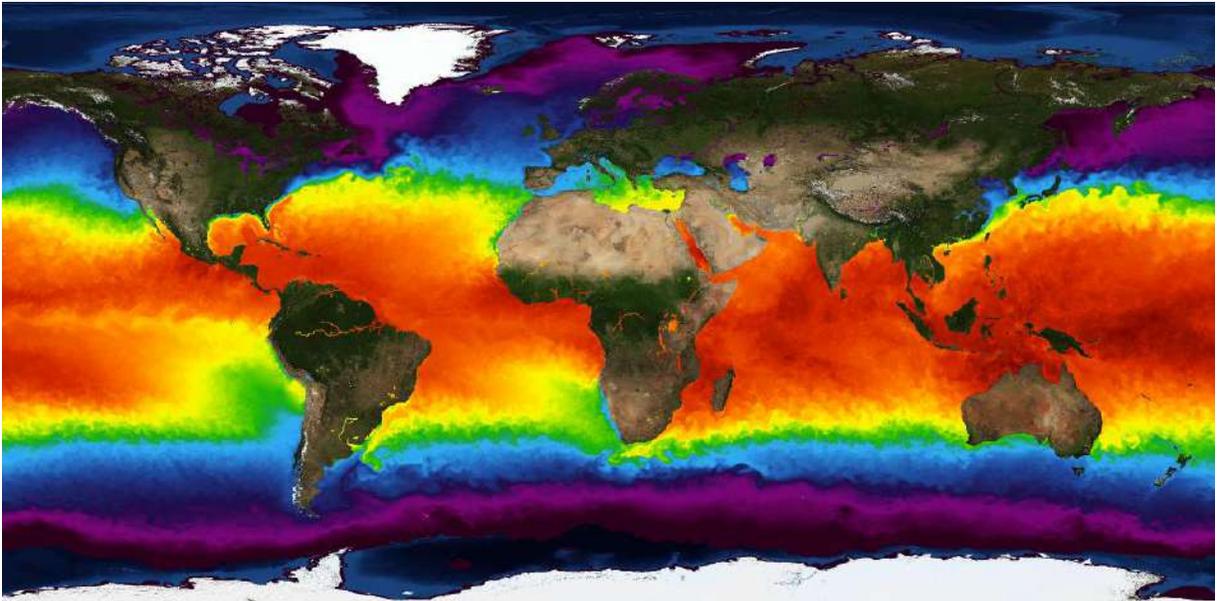
**Data available:** The NetCDF files contain ocean temperature, salinity, eastward and northward currents, sea surface elevation, and water velocity

**Further information:** 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

**Website:** <https://hycom.org/dataserver>

**Introduction document:** <https://www.hycom.org/hycom/documentation>

**ID:** OC-024  
**Name:** NASA - State of the Ocean (SOTO) Version 4.2.1



**Component:** Ocean condition

**Data format:** Online viewer

**Status:** Ongoing

**Acquisition method:** Satellite data

**Data resolution:** See each dataset

**Data available:** Ocean color, ocean surface current, ocean surface wind, sea ice, sea surface height, sea surface salinity, and sea surface temperature

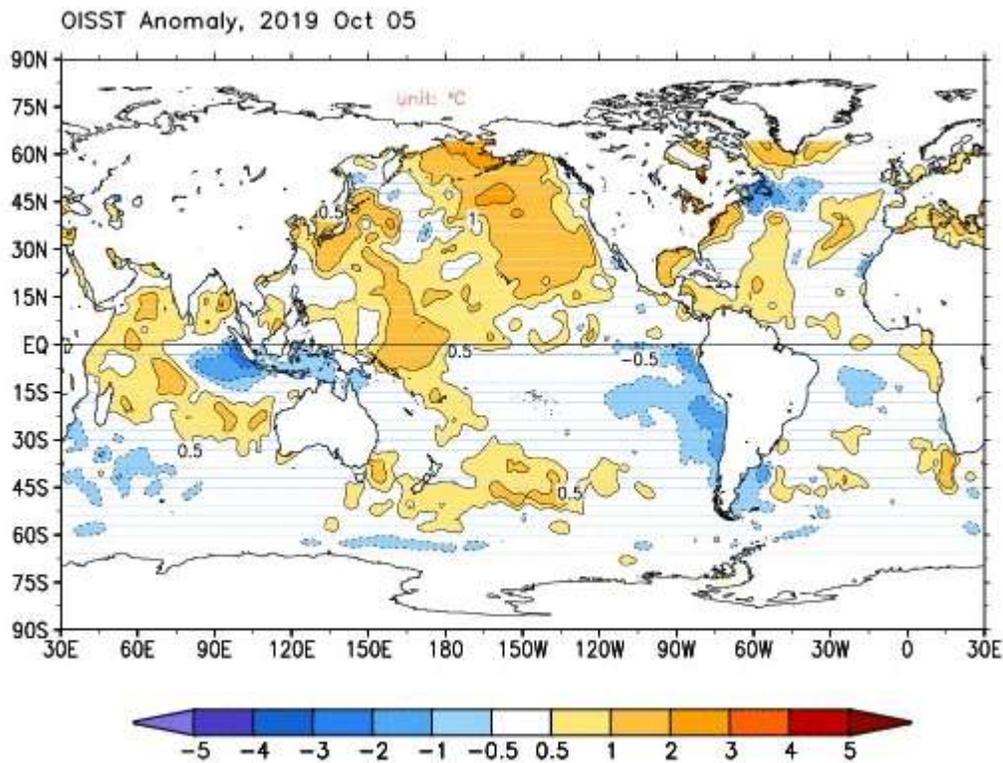
**Further information:** SOTO is a suite of tools presented through an interactive, web-based visualization front end. It provides access to a broad range of satellite-derived products and key parameters of interest to the oceanographic community.

**Website:** <https://podaac-tools.jpl.nasa.gov/soto/>

**Introduction document:**

**ID:** OC-025

**Name:** NOAA - NCEP Global Ocean Data Assimilation System (GODAS)



**Component:** Ocean condition

**Data format:** Online Maps/ NetCDF (monthly)

**Status:** Ongoing

**Acquisition method:** Real-time ocean reanalyzed and reanalyzed data

**Data resolution:** 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.

**Data available:** Sea surface temperature anomaly, isotherm, sea level anomaly, heat content anomaly, tropical cyclone heat potential, surface wind stress, surface currents and ENSO data

**Further information:** A global ocean climate monitoring activity

**Website:** <http://www.cpc.ncep.noaa.gov/products/GODAS/>

**Introduction document:** [https://www.cpc.ncep.noaa.gov/products/GODAS/pl/introduction\\_godas\\_web.pdf](https://www.cpc.ncep.noaa.gov/products/GODAS/pl/introduction_godas_web.pdf)

ID:

OC-026

Name:

Coriolis - Operational Oceanography

Tip: click "Download" to ... download data, click "Refresh" if "Download" is not active, click "Hide observations" to save some time.

Start date	End date	Vertical profiles	Stations (180741)	Platforms (4950)	Time series	Platforms (8475)
00/11/2019	06/12/2019	<input checked="" type="checkbox"/> Argo profiles	21473	3803	<input checked="" type="checkbox"/> Argo trajectories	3395
		<input checked="" type="checkbox"/> XBT profiles	307	31	<input checked="" type="checkbox"/> Drifting buoy	1876
		<input checked="" type="checkbox"/> CTD profiles	67	1	<input checked="" type="checkbox"/> TSG	63
		<input checked="" type="checkbox"/> Glider profiles	2547	10	<input checked="" type="checkbox"/> Bubbles	0
		<input checked="" type="checkbox"/> Sea mammal or Animal profiles	2256	38	<input checked="" type="checkbox"/> Fixed buoys & Mooring time series	1138
		<input checked="" type="checkbox"/> Fixed buoys and mooring profiles	152596	135	<input checked="" type="checkbox"/> Other time series & trajectories	2
		<input checked="" type="checkbox"/> Other profiles	893	32		

**Component:**

Ocean condition

**Data format:**

NetCDF/ CSV

**Status:**

Ongoing (since 2001)

**Acquisition method:**

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.

**Data resolution:**

See each dataset

**Data available:**

Temperature, salinity, oxygen, chlorophyll, ocean heat content

**Further information:**

Products:

- CORA (see details in this inventory)
- Gridded Fields (Online maps)
- ANDRO (see details in this inventory)
- Global Ocean Indicators (not accessible now)

**Website:**

<http://www.coriolis.eu.org/Data-Products/Data-Delivery/Data-selection>

**Introduction document:**

**ID:** OC-027

**Name:** Coriolis - Coriolis Ocean Dataset for Reanalysis(CORA)

**CORA: Coriolis Ocean database for ReAnalysis**

The CORA dataset (Coriolis Ocean Dataset for ReAnalysis) aims to diffuse 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...). The current version of the CORA dataset (CORA5.0) stands out from the previous version by the intake of millions profiles from the historical period (1950-1990) and the intake of year 2015 profiles from Coriolis. A very careful validation process is performed on the CORA measurements since the probably erroneous profiles are individually checked by an oceanographer which changes the data quality flags if necessary. This work flow reduces the amount of unnecessary flags leading to a better estimation of the ocean variability. Last, a correction is applied on the XBT measurement depth following the method by Hamon et al. 2012. The CORA dataset is distributed by the Copernicus Marine and Environment Service [online catalogue](#): [Product User Manual](#) and [Documentation](#) are also distributed by Copernicus.

Ifremer

**Component:** Ocean condition

**Data format:** NetCDF

**Status:** Ongoing

**Acquisition method:** in situ data (Argo DACS, research vessels, moored buoys, moored buoys)

**Data resolution:** Full/ high resolution

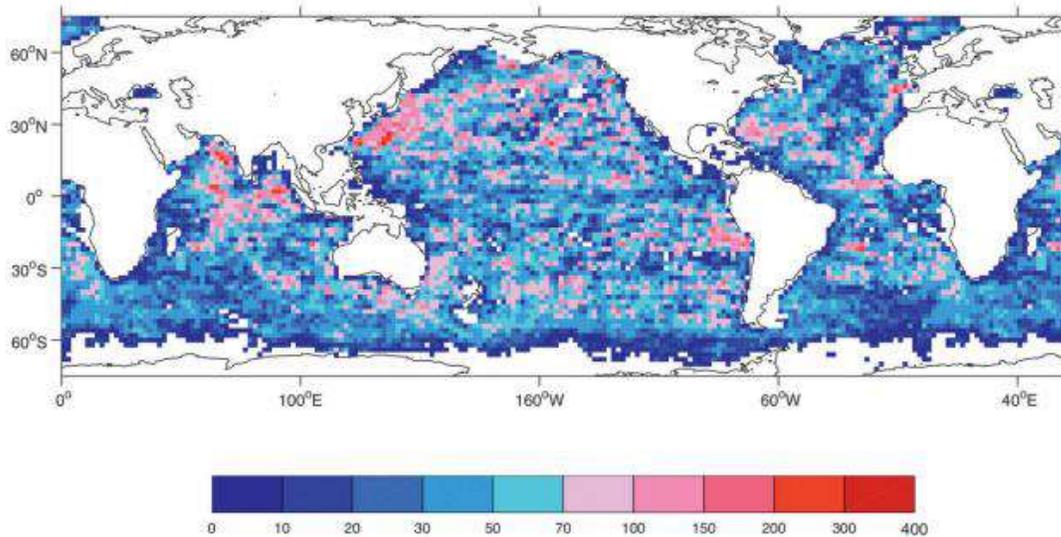
**Data available:** This dataset diffuses all types of in-situ temperature and salinity measurements with a maximal sampling, including high frequency profilers (ARGO, CTD, etc...) surface and sub-surface timeseries (surface drifters and thermosalinographs, etc...)

**Further information:**

**Website:** <http://www.coriolis.eu.org/Data-Products/Products/CORA>

**Introduction document:** <http://cmems-resources.cls.fr/documents/QUID/CMEMS-INS-QUID-013-001b.pdf>

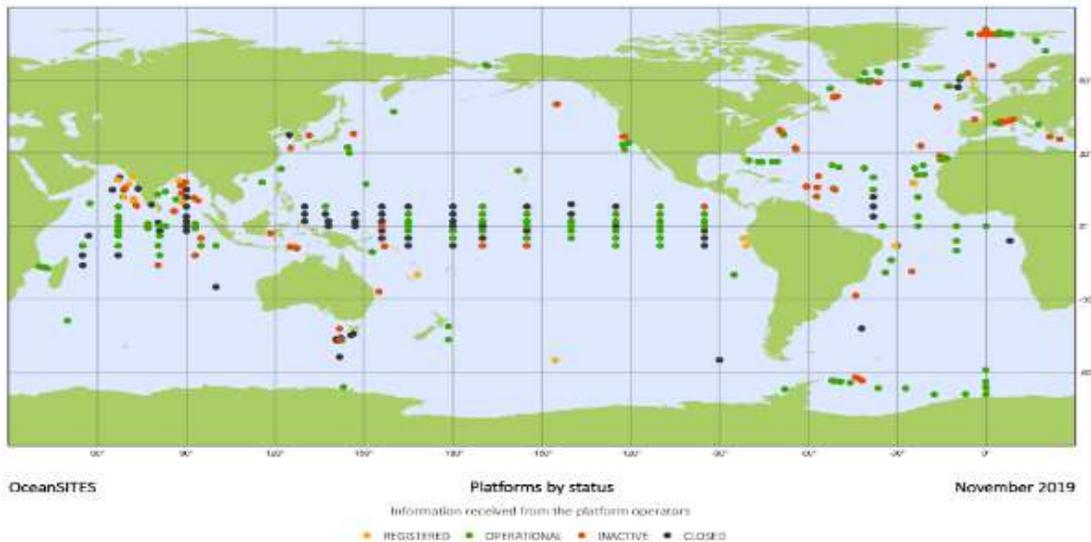
**ID:** OC-028  
**Name:** Coriolis - Argo New Displacements Rannou and Ollitrault (ANDRO) An Argo-based deep displacement atlas



**Component:** Ocean condition  
**Data format:** ASCII DEP file/ NetCDF  
**Status:** Uncertain (2012 - 2017)  
**Acquisition method:** Argo data, Real time data  
**Data resolution:** N/A  
**Data available:** Float parking pressure (RPP) and temperature, deep and surface displacements, and associated times, deep and surface associated velocities with their estimated errors  
**Further information:** 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.  
**Website:** <https://www.seanoe.org/data/00360/47077/>  
**Introduction document:** <https://archimer.ifremer.fr/doc/00360/47126/47066.pdf>

**ID:** OC-029  
**Name:** OceanSITES

## OceanSITES Network



**Component:** Ocean condition

**Data format:** NetCDF/ MAP (PNG/PDF)

**Status:** Ongoing (since 1999)

**Acquisition method:** Observational data

**Data resolution:** High time resolution, often in real-time

**Data available:** Observations cover meteorology, physical oceanography, transport of water, biogeochemistry, and parameters relevant to the carbon cycle, ocean acidification, the ecosystem, and geophysics.

**Further information:** 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.

**Website:** <http://www.oceansites.org/index.html>

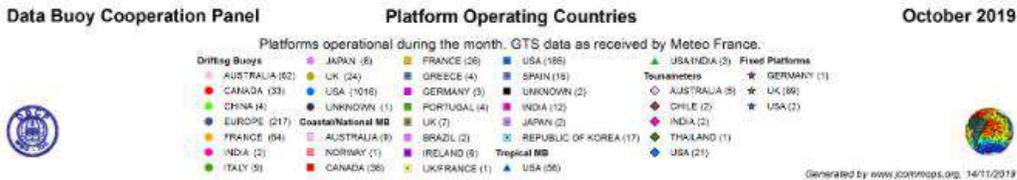
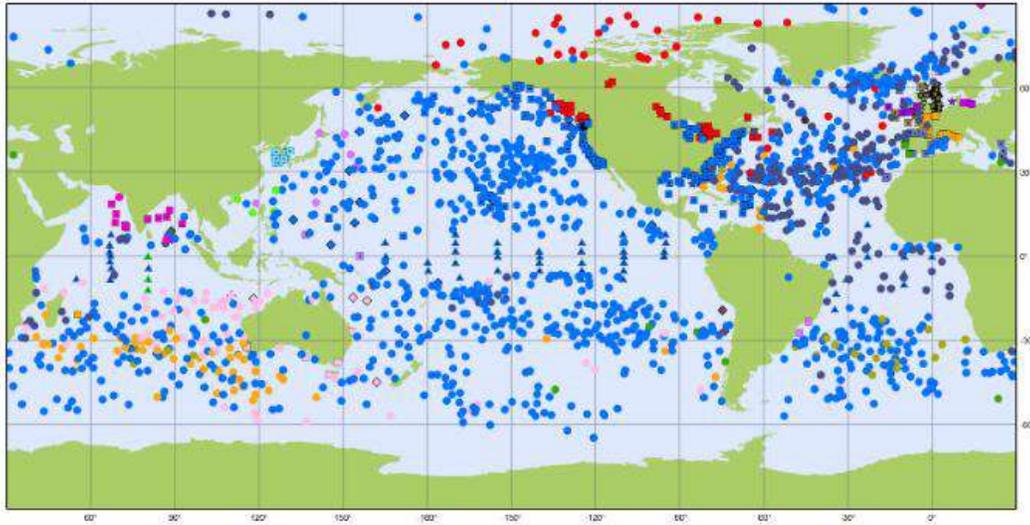
**Introduction document:**

ID:

OC-030

Name:

WMO-IOC - Data Buoy Cooperation Panel (DBCP)



Component:

Ocean condition

Data format:

MAP/ CSV

Status:

Ongoing

Acquisition method:

Buoy data, real-time ocean, near real-time and archived data

Data resolution:

See each dataset

Data available:

Sea surface temperature, ocean current velocity, air temperature, humidity, wave characteristics and wind velocity across all oceans.

Further information:

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

Website:

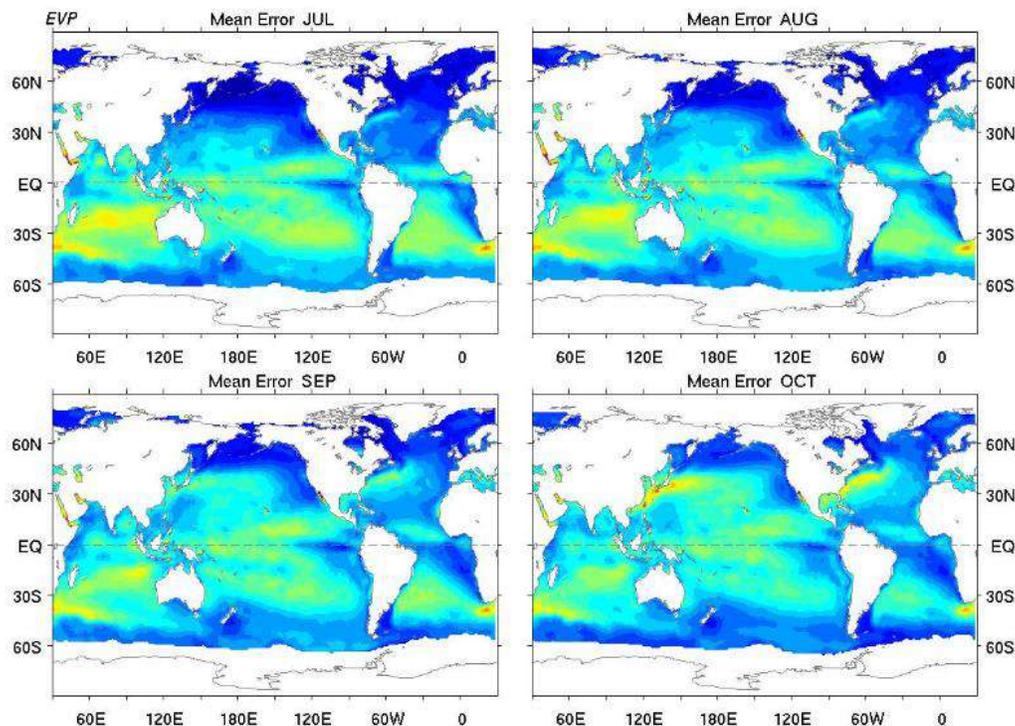
<http://www.jcommops.org/dbcp/data/access.html>

Metadata ara available in JCOMMOPS: <http://www.jcommops.org/board?t=dbcp>

Introduction document:

**ID:** OC-031

**Name:** Woods Hole Oceanographic Institution - Objective Analyzed air-sea Fluxes (OAFlux) for the Global Oceans



**Component:** Ocean condition

**Data format:** NetCDF/ Figures

**Status:** Ongoing (since 1958, twice-per-year update)

**Acquisition method:** Satellite data

**Data resolution:**

- 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

**Data available:** Heat flux, evaporation, wind and sea surface temperature

**Further information:** 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.

**Website:** <http://oaflux.whoi.edu/dataproducts.html>

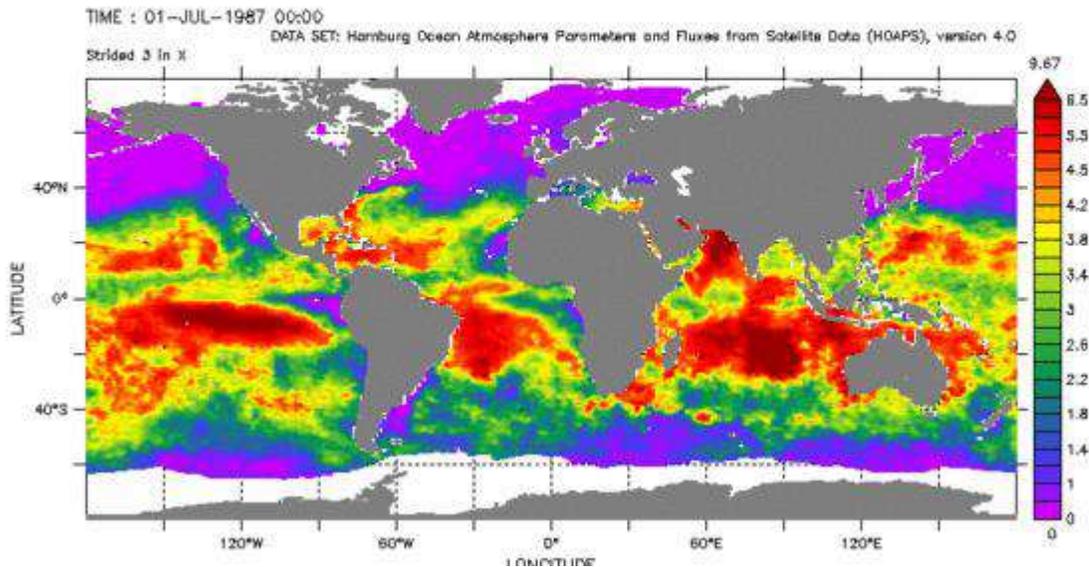
**Introduction document:** <http://oaflux.whoi.edu/documents.html>

**ID:** OC-032

**Name:** Hamburg Ocean Atmosphere Parameters and Fluxes from Satellite Data (HOAPS)

## HOAPS 4.0 - Hamburg Ocean Atmosphere Parameters and Fluxes Climatology

LAS 7+, icdc.cen.uni-hamburg.de, 26-Jul-18



**Component:** Ocean condition

**Data format:** MAP/ NetCDF

**Status:** Ongoing

**Acquisition method:** Satellite data

**Data resolution:** Monthly averages and 6-hourly composites on a regular latitude/longitude grid with a spatial resolution of  $0.5^\circ \times 0.5^\circ$  degrees.

**Data available:** Wind speed at 10m, near surface humidity, precipitation, water vapor, total water, sea surface temperature, heat flux, evaporation, and freshwater flux

**Further information:** 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.

**Website:** 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/>

**Introduction document:** <http://hoaps.cen.uni-hamburg.de/index.php?id=docu>

ID:

OC-033

Name:

Ocean Data Viewer



- Atmosphere
- Ocean**
- eWoce
- BATS Bottle Data
- CARINA Bottle Data
- Coriolis CORA-3 Dataset
- Global Alkalinity & TCO2
- GEOSECS
- Global Transmissometer Database
- GLODAP v2.2019 Bottle Data
- GLODAP Gridded Data
- HOT Bottle Data
- Jenkins et al. Tritium-Helium Data Compilation
- LDEO Carbon Data
- Martiny et al. 2014. CNP Data
- MedatlasII
- MEOP-CTD Marine Mammals Database
- Mixed Layer Depths
- Reid & Mantyla
- PACIFICA
- PHC 3.0
- SeaDataNet TS Data
- SOCAT fCO2 Data
- Southern Ocean Atlas
- World Ocean Atlas 2001
- World Ocean Atlas 2005
- World Ocean Atlas 2009
- World Ocean Atlas 2013
- WOCE Global Hydrographic Climatology
- Miscellaneous

Home > Data > Ocean

## Oceanographic Datasets in ODV Format

Name	Description
eWOCE	Electronic Atlas of WOCE Data
BATS Bottle Data	Bermuda Atlantic Time-Series Study Bottle Data
CARINA Bottle Data	Hydrographic, nutrient and internally consistent data of carbon system parameters (CARINA Group, 2009)
Coriolis CORA-3.4	Coriolis Ocean Database for ReAnalysis - CORA-3.4 (8.2 Mio temperature and salinity profiles; 1990 - 2012)
GEOSECS	GEOSECS Hydrographic and Tracer Data; 1972 - 1978
Global Alkalinity & TCO2	Estimated alkalinity and total dissolved inorganic carbon (Goyet et al., 2000)
Global Transmissometer Database	Transmissometer and hydrographic data for the global ocean (W. D. Gardner, et al., 2003)
GLODAP v2.2019 Bottle Data	Hydrographic and carbon data for the global ocean (Olsen et al., 2019)
GLODAP Gridded Data	Hydrographic and carbon climatology for the global ocean (Key, R.M., et al., 2004)
HOT Bottle Data	Hawaii Ocean Time-series Bottle Data
Jenkins et al. Tritium-Helium Data Compilation	Global oceanic database of tritium and helium isotope measurements (1952-2016)
LDEO Carbon Data	Global pCO2 dataset containing more than 13.5 million stations (1957-2018) and Takahashi et al 2018 dataset of water column carbon parameters.
Martiny et al. 2014. CNP Data	Particulate organic carbon, nitrogen, and phosphorus data in the global ocean (Martiny et al., 2014)
MedatlasII	Hydrographic data for the Mediterranean and Black Sea (Medar Group, 2002)
MEOP-CTD	Marine Mammals Temperature and Salinity Data 2004 - 2017 (MEOP Consortium, 2017)
Mixed Layer Depths	Monthly global mixed layer depths on 1°x1° grid (Monterey and Levitus, 1997)
PACIFICA	PACIFIC ocean Interior CArbon dataset containing >10,000 stations (1985 - 2010)
PHC 3.0	Polar science center Hydrographic Climatology (PHC3.0, Steele et al., 2005)
Reid & Mantyla	Global collection of historical hydrographic and nutrient data (Reid & Mantyla)
SeaDataNet TS Data	SeaDataNet regional temperature and salinity datasets.
SOCAT fCO2 Data	Global fCO2 dataset containing 23.37 million surface water measurements (1958-2018).
Southern Ocean Atlas	Standard depth profiles and gridded version of the Hydrographic Atlas of the Southern Ocean (Obers et al., 1992)
World Ocean Atlas 2001	Monthly, seasonal and annual hydrographic data from the U.S. NODC World Ocean Atlas 2001
World Ocean Atlas 2005	Monthly, seasonal and annual hydrographic data from the U.S. NODC World Ocean Atlas 2005
World Ocean Atlas 2009	Monthly, seasonal and annual hydrographic data from the U.S. NODC World Ocean Atlas 2009
World Ocean Atlas 2013	Monthly, seasonal and annual 1°x1 degree hydrographic data from the U.S. NODC World Ocean Atlas 2013
WOCE Global Hydrographic Climatology	Global 0.5 x 0.5 degree gridded climatology of Gouretski and Koltermann (2004)

**Component:**

Ocean condition

**Data format:**

MAP/NetCDF/ ODV Format

**Status:**

Ongoing

**Acquisition method:**

See each dataset

**Data resolution:**

See each dataset

**Data available:**

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

**Further information:**

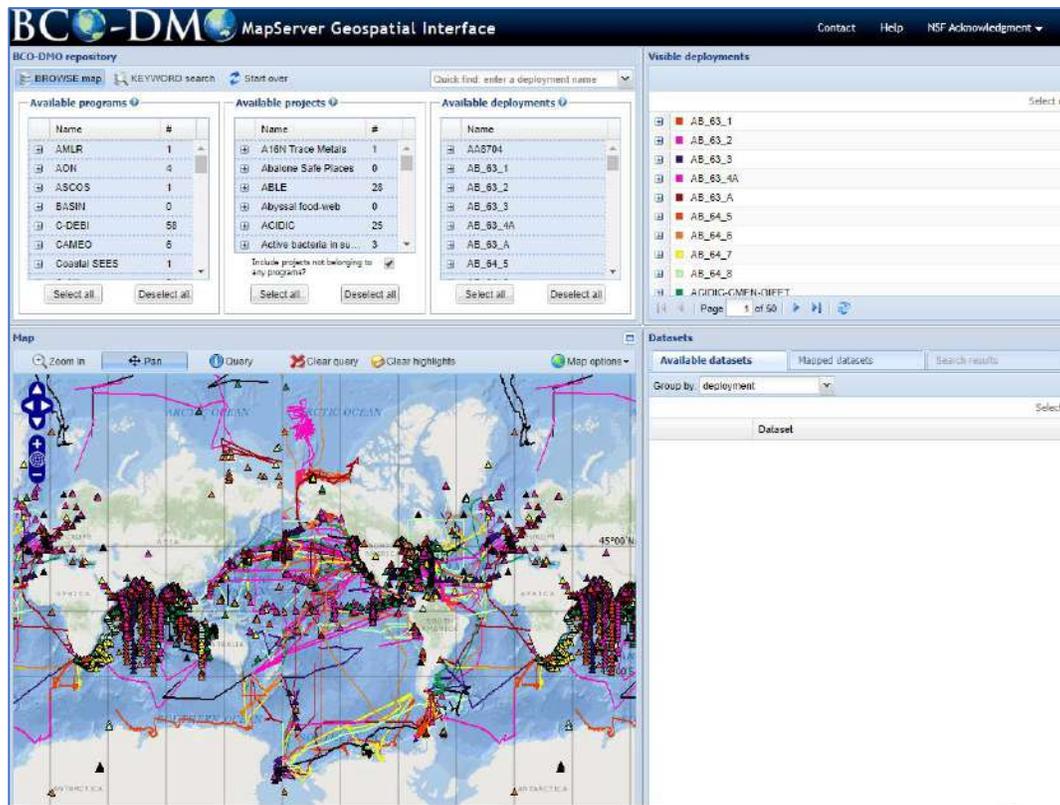
**Website:**

<https://odv.awi.de/data/ocean/>

**Introduction document:**

**ID:** OC-034

**Name:** Biological and Chemical Oceanography Data Management Office (BCO-DMO)



**Component:** Ocean condition

**Data format:** Flat (ASCII) text (comma, space or tab separated)/ Matlab binary file/  
Ocean Data View (ODV) compatible file/ NetCDF

**Status:** Ongoing

**Acquisition method:** See each dataset

**Data resolution:** Observational data (cruises and moorings)

**Data available:** Biological, chemical, geological, and physical oceanographic  
measurements

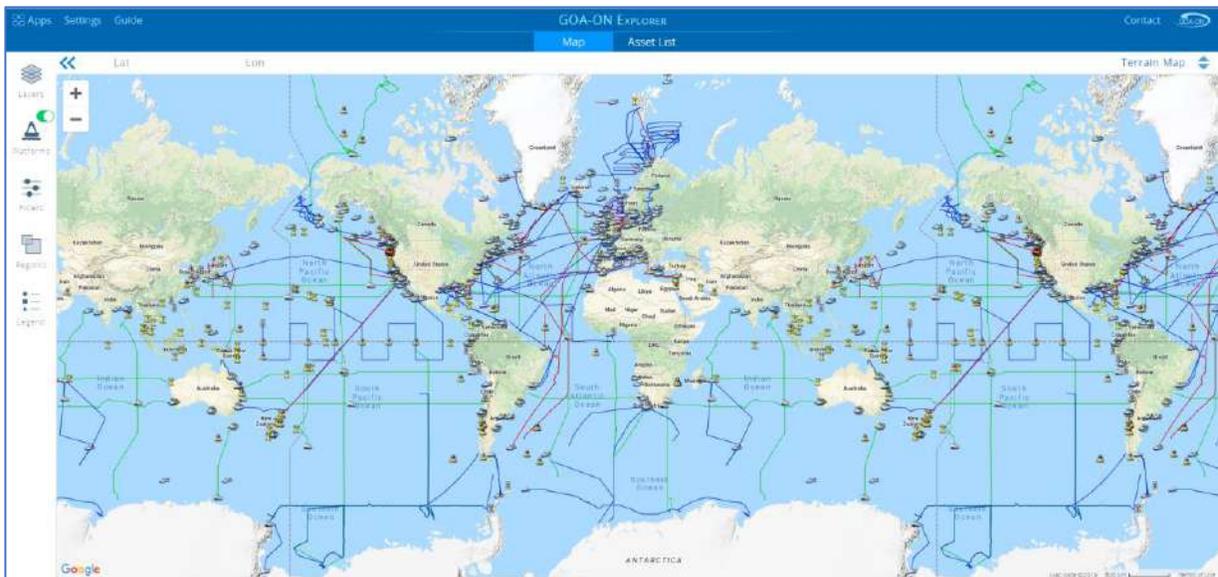
**Further information:** A data management platform of many ocean scientific research data.  
This platform belongs to the Woods Hole Oceanographic Institution.  
This platform includes 44 programs and 9435 datasets(by 1 Jul 2019).

**Website:** <https://www.bco-dmo.org/data>

**Introduction document:** [https://www.bco-dmo.org/sites/default/files/BCO-DMO\\_Introduction\\_v3.pdf](https://www.bco-dmo.org/sites/default/files/BCO-DMO_Introduction_v3.pdf)

**ID:** OC-035

**Name:** Global Ocean Acidification Observing Network(GOA - ON) Data Portal



**Component:** Ocean condition

**Data format:** Online Map application

**Status:** Ongoing

**Acquisition method:** Observational data (mooring, ship-based time series, volunteer observing ship, fixed time series stations)

**Data resolution:** See each dataset

**Data available:** This database includes 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> )

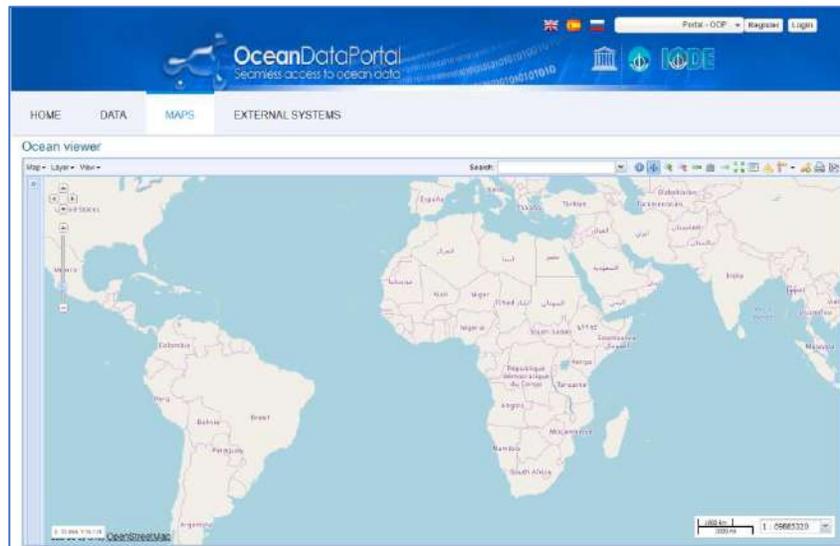
**Further information:** A platform of ocean acidification research data, linked with CCHDO

**Website:** <http://portal.goa-on.org/Home>

**Introduction document:** see the list <http://portal.goa-on.org/Explorer>

**ID:** OC-036

**Name:** UNESCO/IOC - Ocean Data Portal



**Component:** Ocean condition

**Data format:** MAP/ NetCDF/ CSV /ASCII/ XML  
alphabetic-numeric data, images and documents, spatial data

**Status:** Ongoing

**Acquisition method:** 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

**Data resolution:** See each dataset

**Data available:** Oceanography, marine meteorology Temperature, Salinity, Wave Height, Wind Speed, SAR Imagery

- 1) JCOMM Ship Observations Team (SOT):
  - Volunteer Observing Ships (VOS)
  - Ship of Opportunity Programme (SOOP)
  - Surface underway data
- 2) JCOMM Data Buoy Cooperation Panel (DBCP):
  - drifting buoys, moored tropical and high seas buoys and OceanSITES
- 3) GLOSS 4) Argo 5)GO-SHIP 6) IOCCP

**Further information:** 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.

**Website:** <http://www.oceandataportal.org/>

**Introduction document:** [http://www.oceandataportal.org/wp-content/uploads/2018/07/1-ODP\\_Enabling\\_science-1.pdf](http://www.oceandataportal.org/wp-content/uploads/2018/07/1-ODP_Enabling_science-1.pdf)

**ID:** OC-037

**Name:** NASA Earth Observations



**Component:** Ocean condition

**Data format:** GeoTIF/CSV/ Figures

**Status:** Ongoing

**Acquisition method:** See each dataset

**Data resolution:** See each dataset

**Data available:** 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)

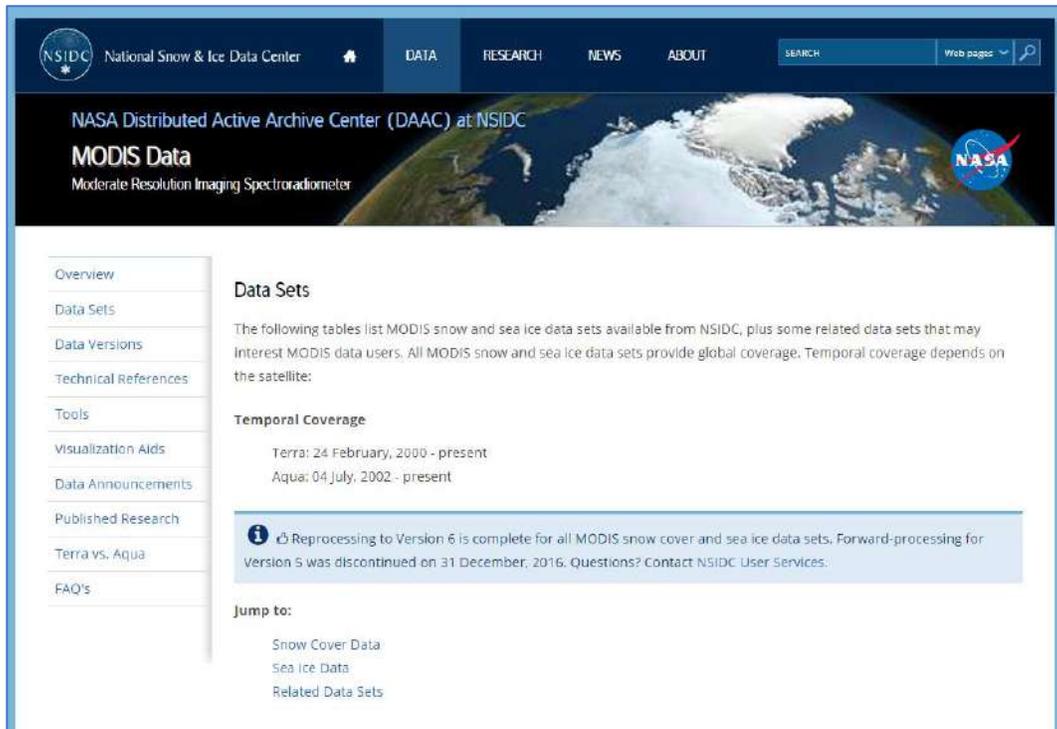
**Further information:** Including many well documented SHP map based on different satellite data and ocean survey research

**Website:** <https://neo.sci.gsfc.nasa.gov/>

**Introduction document:**

**ID:** OC-038

**Name:** NASA National Snow & Ice Data Center



**Component:** Ocean condition

**Data format:** HDF-EOS

**Status:** Ongoing

**Acquisition method:** Satellite data

**Data resolution:** See each dataset

**Data available:** Sea Ice

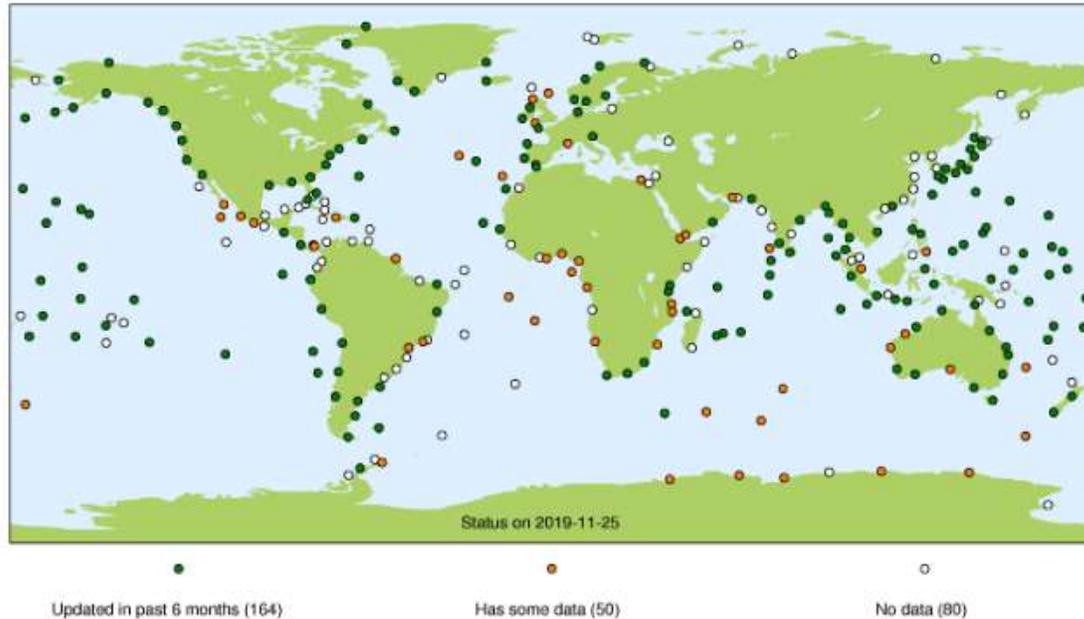
**Further information:** HDF-EOS (Hierarchical Data Format - Earth Observing System) is a self-describing file format based on HDF that was developed specifically for distributing and archiving data collected by NASA EOS satellites. For more information, visit the HDF-EOS Tools and Information Center.

**Website:** [http://nsidc.org/data/modis/data\\_summaries#sea-ice](http://nsidc.org/data/modis/data_summaries#sea-ice)

**Introduction document:**

**ID:** OC-039

**Name:** Sea Level Station Monitoring Facility



**Component:** Ocean condition

**Data format:** CSV/ NetCDF

**Status:** Ongoing

**Acquisition method:** Observational data

**Data resolution:** Hourly/ daily/ monthly resolution

**Data available:**

- 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).

**Further information:** Source of GLOSS.

**Website:** <https://uhslc.soest.hawaii.edu/datainfo/>

**Introduction document:**

ID: OC-040

Name: Permanent Service for Mean Sea Level (PSMSL)

**PSMSL** Permanent Service for Mean Sea Level

About Us Data Products GLOSS Training Links

You are here: home > data >

**Data**

- Obtaining
- Supplying
- High-Frequency
- Bottom Pressure Records
- Other Long Records
- GLOSS/ODINAFRICA Calibration Data

**Other Links**

- Explore data sets via Google Earth
- Associated data sets (CIA, GPS, atmospheric pressure)
- All products from PSMSL
- Report Ancillary Time Series of Mean Sea Level Measurements

### Data

#### Obtaining Tide Gauge Data:

Obtain files and plots of individual stations via a map-based explorer or a table, or download the entire dataset

#### Supplying Tide Gauge Data:

Learn more about contributing data to PSMSL

#### High Frequency Data:

Learn more about obtaining fast and delayed mode high frequency data

#### Bottom Pressure Records:

Obtain files and plots of bottom pressure data via a map-based explorer or a table, or download the entire dataset

#### Long Records:

Use this page to obtain long time series that are not in PSMSL main data set

#### GLOSS/ODINAFRICA Calibration Data:

Obtain calibration data for the ODINAFRICA sites

**Component:** Ocean condition

**Data format:** CSV/ NetCDF

**Status:** Ongoing (since 1993)

**Acquisition method:** Observational data

**Data resolution:** See each dataset

**Data available:** Tide gauge data

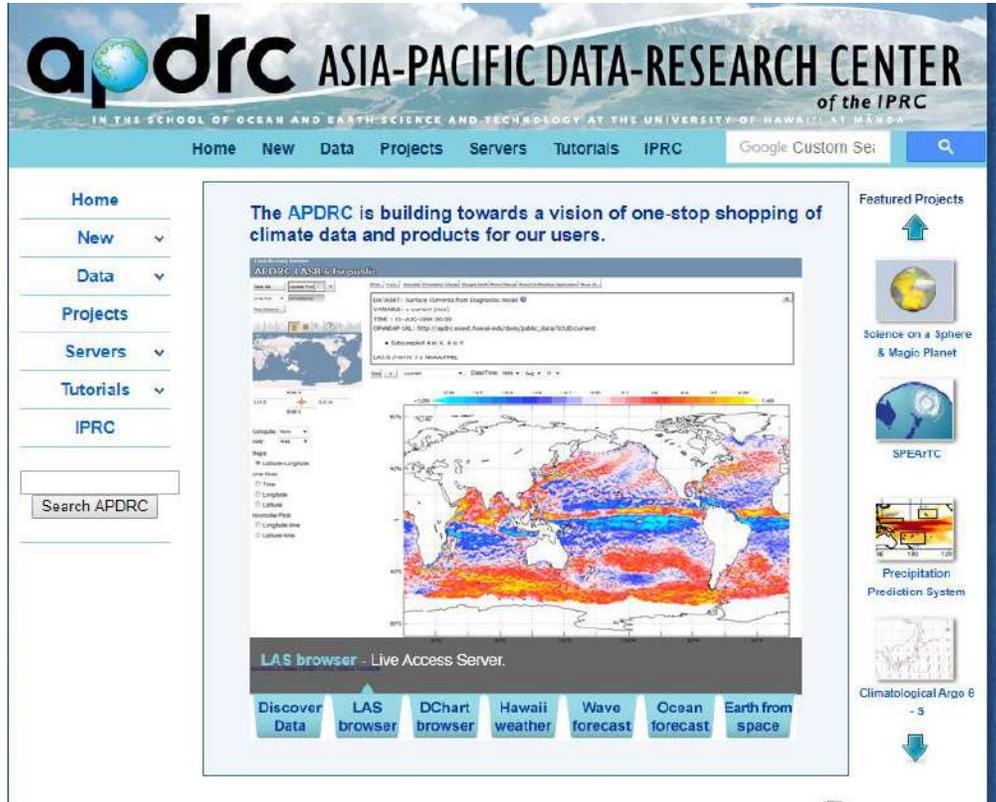
**Further information:** Collection, publication, analysis and interpretation of sea level data from the global network of tide gauges

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).

**Website:** <http://www.psmsl.org/data/>

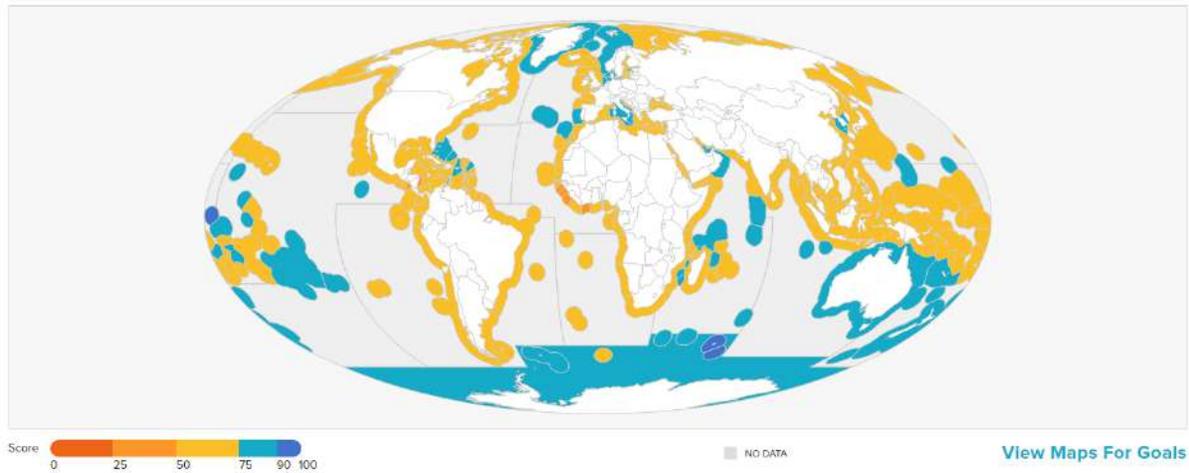
**Introduction document:**

**ID:** OC-041  
**Name:** Asia-Pacific Data-Research Centre (APDRC)



**Component:** Ocean condition  
**Data format:** NetCDF/ Figures  
**Status:** Ongoing (since 2007)  
**Acquisition method:** In situ data, satellite data, model data, reanalysis data  
**Data resolution:** See each dataset  
**Data available:** Ocean temperature, salinity, nutrients, bathymetry, SST, sea level, surface pressure, surface winds, ocean currents, sensible heat flux, latent heat flux, net heat flux  
**Further information:**  
**Website:** <http://apdrc.soest.hawaii.edu/index.php>  
**Introduction document:**

**ID:** OC-042  
**Name:** Ocean Health Index(OHI)



**Component:** Ocean condition

**Data format:** Maps

**Status:** Ongoing

**Acquisition method:** N/A

**Data resolution:** N/A

**Data available:** Scores for status, trend and resilience, and likely future status

**Further information:** 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.

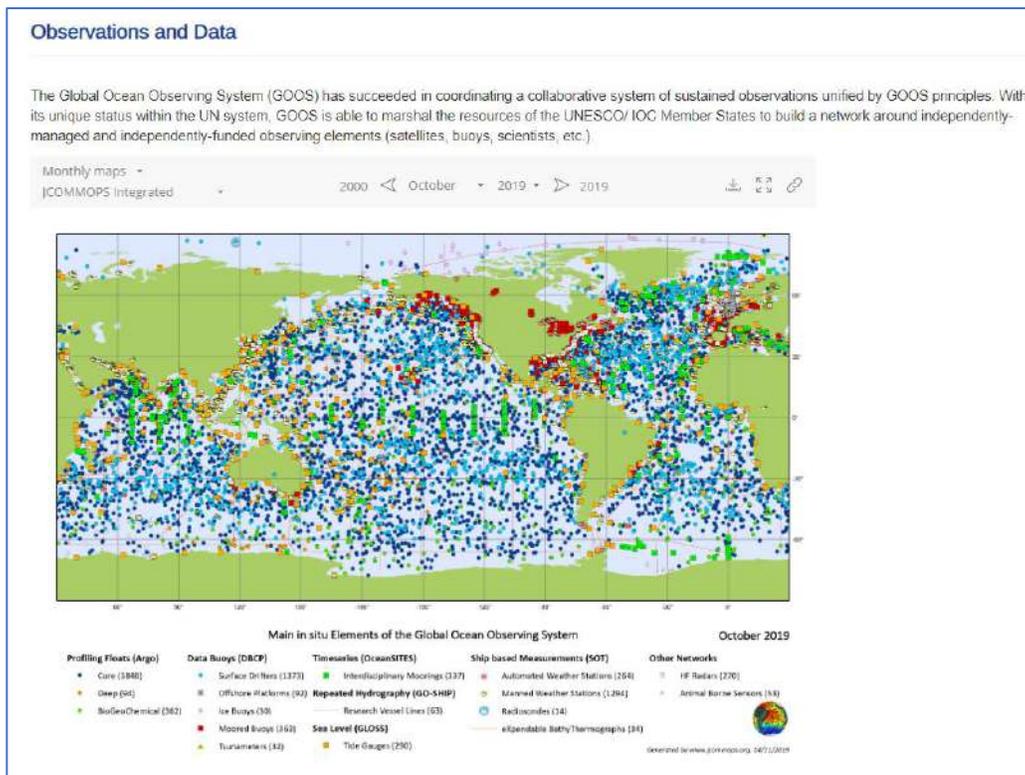
Global databases are used for the annual assessment of goals in 221 regions, including all coastal countries, territories and the Antarctic, inland to 1 km from the shore and seaward to either 200 nautical miles (Exclusive Economic Zone, EEZ) or 3 nm. Areas beyond national jurisdiction ('High Seas') are assessed less frequently.

**Website:** <http://www.oceanhealthindex.org/>

**Introduction document:**

**ID:** OC-043

**Name:** UNESCO/IOC - The Global Ocean Observation System



**Component:** Ocean condition

**Data format:** See each dataset (including CSV/ NetCDF)

**Status:** Ongoing

**Acquisition method:** Satellite data, in situ data (buoys), real-time data

**Data resolution:** See each dataset

**Data available:**

- 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.

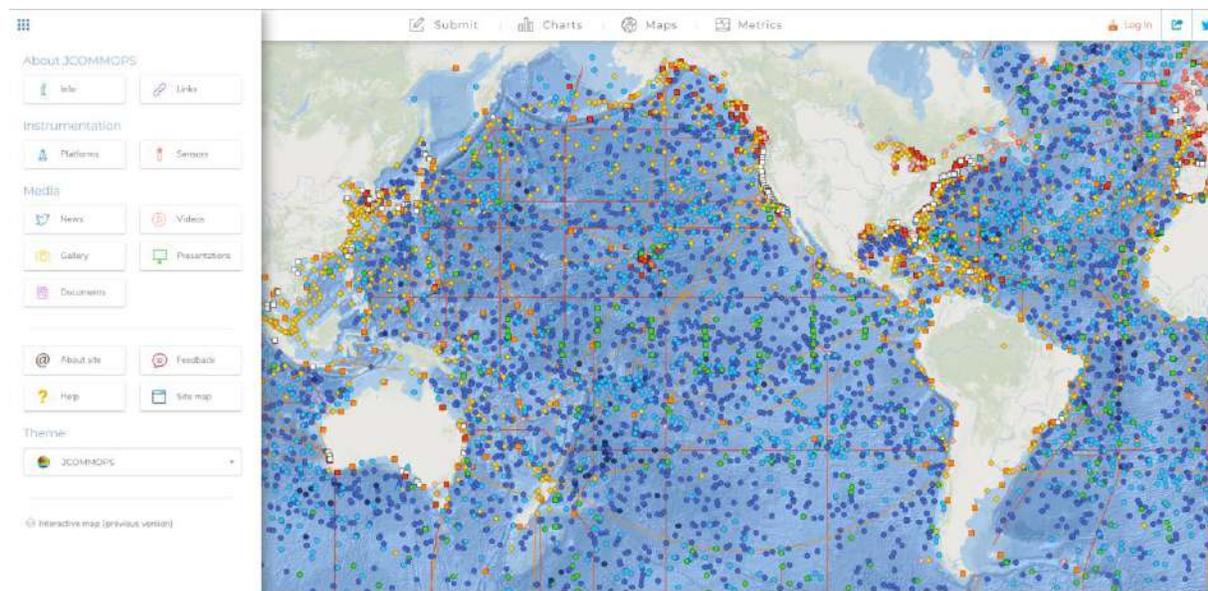
**Further information:** data are available in JCOMMOPS: <http://www.jcommops.org/board>

**Website:** <http://www.goosocean.org/>

**Introduction document:**

**ID:** OC-044

**Name:** JCOMM in situ Observations Programme Support Centre (JCOMMOPS)



**Component:** Ocean condition

**Data format:** See each dataset (including CSV/ NetCDF)

**Status:** Ongoing

**Acquisition method:** Satellite data, in situ data (buoys) and real-time data

**Data resolution:** See each dataset

**Data available:** Data from DBCP, OceanSITes, SOT, GO-SHIP, and Argo

**Further information:** 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).

**Website:** <http://www.jcommops.org/board>

**Introduction document:**

**ID:** OC-045

**Name:** ESSO - Indian National Centre for Ocean Information Services (INCOIS)

Sl.No	Service/Product	Forecast duration (days)	Frequency (hours)
<b>Regular Daily Services</b>			
1	Location Specific forecast	2-3 days**	3-6 hourly**
2	Forecast for the Islands	7 days	3 hourly
3	Coastal forecast	7 days	3 hourly
4	Deep Sea forecast	7 days	3 hourly
5	Indian Ocean forecast	5 days	6 hourly
6	Global forecast	5 days	6 hourly
7	Forecast along ship tracks	3 days	6 hourly
8	Webmap services	7 days	6 hourly
9	Port and Harbour forecast	2 days	3 hourly
10	Forecast for Maldives	3 days	3-6 hourly
<b>Emergency Services</b>			
11	Oil spill advisories	3 days	3-6 hourly
12	High Wave Alert Services	1-2 days **	3 hourly
13	Search and Rescue Operations	As per user team requirements	
<b>Value added services</b>			
14	Inland Vessel Limits	1 day	3 hourly

**Note:** \* as per user's need \*\* depending on the persistence of the extreme weather feature

**Component:** Ocean condition

**Data format:** See each dataset (including CSV/ NetCDF)

**Status:** Ongoing

**Acquisition method:** Model data, satellite data, in-situ data (nearshore wave rider buoys, deep sea buoys, ship borne wave height meters and other deep sea met-ocean buoys as well as Automatic Weather Stations)

**Data resolution:** See each dataset

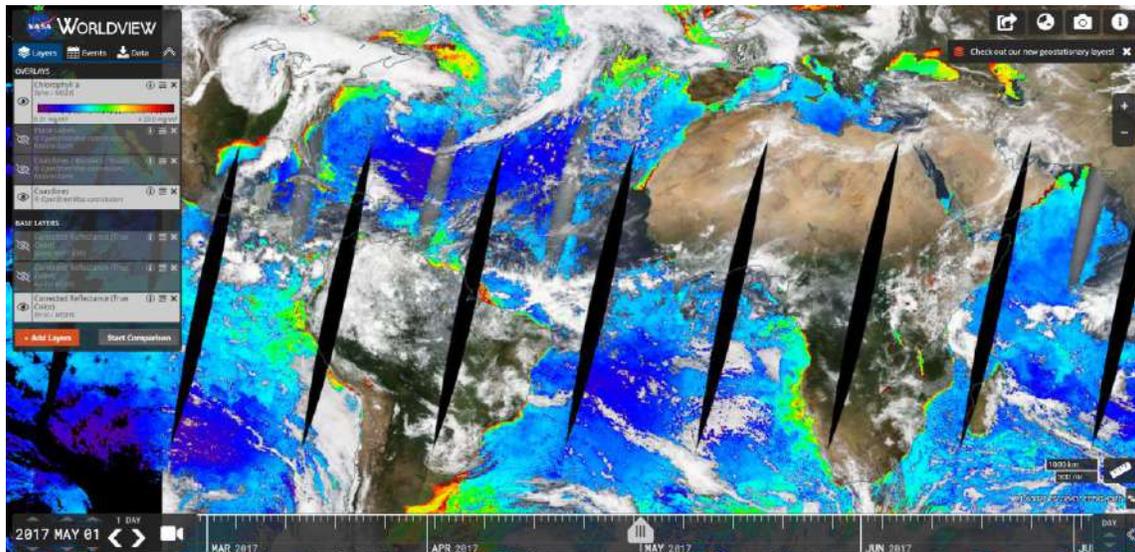
**Data available:** INCOIS provides information about wave height, direction and period (of both wind waves and swell waves), sea surface currents, sea surface temperature, mixed layer depth (the well mixed upper layer of the sea), depth of the 20 degree isotherm (a measure of the depth of the thermocline), astronomical tides, wind speed and direction, and oil-spill trajectory.

**Further information:**

**Website:** <https://www.incois.gov.in/portal/osf/osf.jsp>

**Introduction document:**

**ID:** OC-046  
**Name:** NASA - Ocean color



**Component:** Ocean condition

**Data format:** NetCDF/ HDF

**Status:** Ongoing

**Acquisition method:** Satellite data

**Data resolution:** See each dataset

**Data available:** 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),  $\tau$ , in one NIR or (for CZCS) red band; angstrom coefficient; the diffuse attenuation coefficient at 490 nm,  $K_{490}$ ; 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.

**Further information:**

**Website:** <https://oceancolor.gsfc.nasa.gov/about/>  
data: <https://worldview.earthdata.nasa.gov/>

**Introduction document:** [https://oceancolor.gsfc.nasa.gov/docs/odps\\_opdsmp.may2018.pdf](https://oceancolor.gsfc.nasa.gov/docs/odps_opdsmp.may2018.pdf)

ID: OC-047

Name: Laboratoire d'Etudes en Géophysique et Océanographie Spatiales(LEGOS)



## Observation and Archiving Service Products

Webmaster : Philippe Téchiné

Sea level Tide	Temperature Salinity	Hydrology Radiométrie	Altimetry Meteo	Bathymétrie Topographie	Cravimétrie	Climatologie Courantométrie
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All the data listed in the pages are available at LEGOS. They can be completed according to needs.

The **extranet** type menus have documentation accessible from outside of LEGOS. The corresponding data are available :

- Either on the web site or on the LEGOS anonymous ftp site.
- Or on the Observation and Archiving Services (under the directory /data/soa).
- Or by contacting the people directly, as indicated in the pages.

**For any use of these data, please quote the sources or the authors.**

The **intranet** type menus have documentation only accessible internally. The corresponding data are available :

- Either on the Observation and Archiving Services.
- Or by contacting the people directly, as indicated in the pages.

**These data are reserved for an internal use and must not be diffused outside of LEGOS.**

The menus allow to present your ongoing research work and products. Do not hesitate to come to see me for an on-line publication of your work.

### Links towards the LEGOS Observation Services



CTOH



ROSAME



SSS



DORIS



PIRATA

**Component:** Ocean condition

**Data format:** See each dataset

**Status:** Ongoing

**Acquisition method:** In-situ observations, satellite measurements, modelling and data assimilation

**Data resolution:** See each dataset

**Data available:**

- 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.

**Further information:**

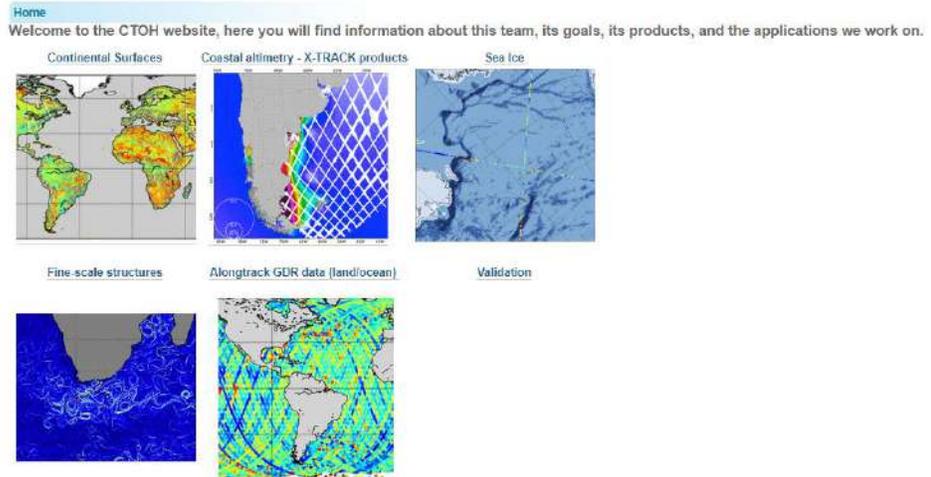
**Website:**

<http://www.legos.obs-mip.fr/legos/Presentation>

**Introduction document:**

**ID:** OC-048

**Name:** LEGOS - Center for Topographic studies of the Ocean and Hydrosphere (CTOH)



**Component:** Ocean condition

**Data format:** NetCDF/ Binary

**Status:** Ongoing

**Acquisition method:** Satellite data (altimetric measurements)

**Data resolution:** See each dataset

**Data available:** sea surface height, ocean currents, lake and river levels, the cryosphere, planet climate, continental surfaces, sea ice

**Further information:** 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

**Website:** <http://ctoh.legos.obs-mip.fr/>

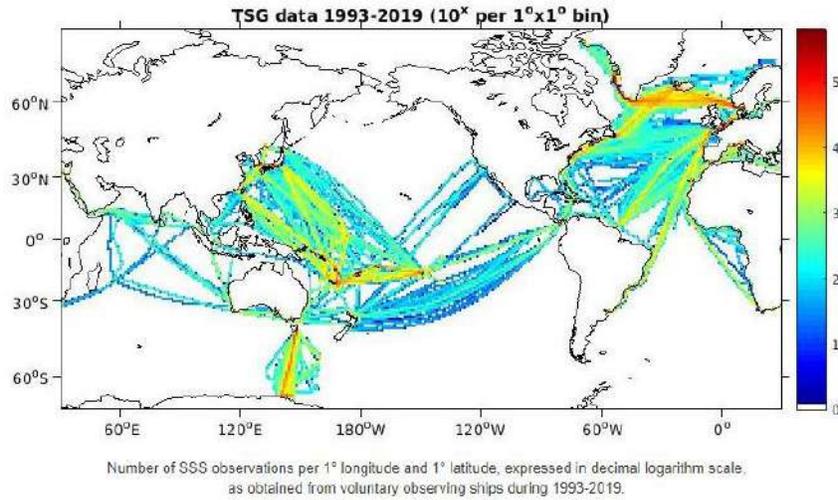
**Introduction document:**

**ID:** OC-049

**Name:** LEGOS - Sea Surface Salinity Observation Service



Welcome to the SSS data base access web page.



**Component:** Ocean condition

**Data format:** ASCII/ NetCDF

**Status:** Ongoing

**Acquisition method:** Real-time monitoring and Delayed Time Processing

**Data resolution:** 5 mn resolution data

**Data available:** Sea Surface Salinity, thermosalinograph (TSG)

**Further information:** It aims at collecting, validating, archiving and distributing in situ SSS measurements derived from Voluntary Observing Ship programs.

**Website:** <http://www.legos.obs-mip.fr/observations/sss>

**Introduction document:**

**ID:** OC-050

**Name:** Global Sea Level Observing System (GLOSS)



**Component:** Ocean condition

**Data format:** Berkeley DB format  
dat

**Status:** Ongoing (SINCE 1997)

**Acquisition method:** in situ data (Tide gauge analysis)

**Data resolution:** See each dataset

**Data available:** Sea level

**Further information:** 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.

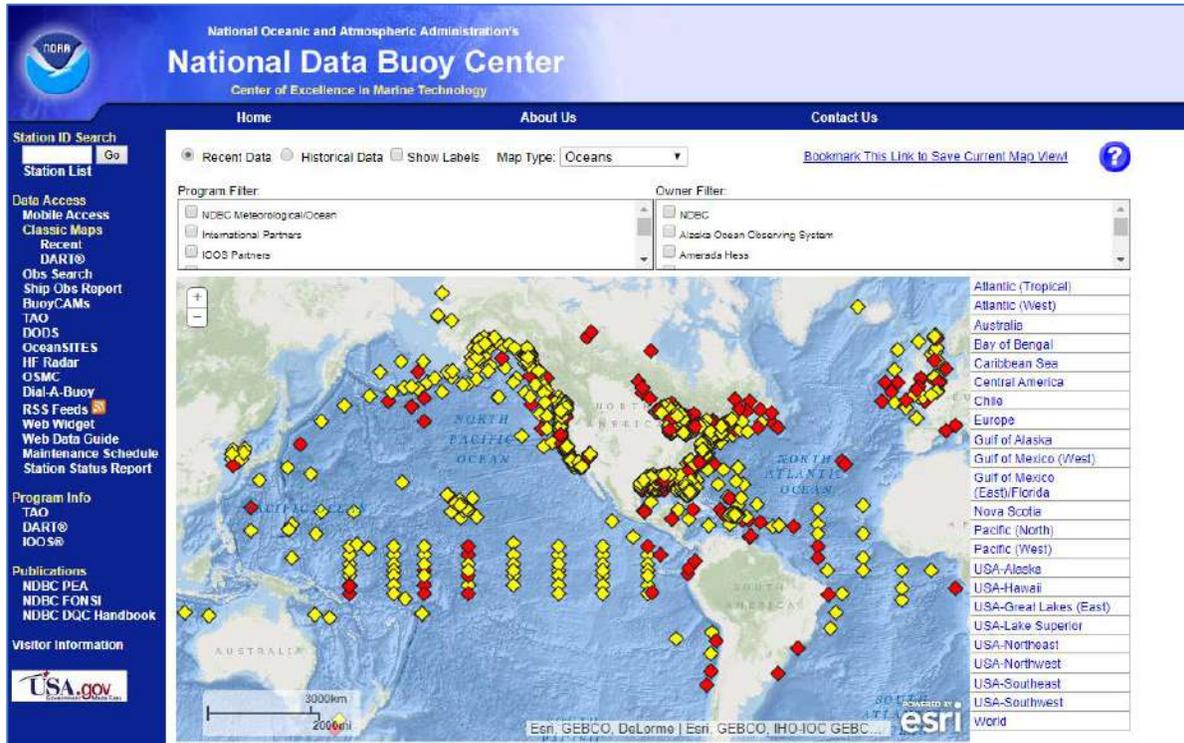
**Website:** <https://www.gloss-sealevel.org/>

Data: <https://www.psmsl.org/products/gloss/glossmap.html>

**Introduction document:**

ID: OC-051

Name: NOAA - National Data Buoy Center (NDBC)



Component: Ocean condition

Data format: NetCDF

Status: Ongoing

Acquisition method: Real-time data

Data resolution: See each dataset (in the Handbook)

Data available: Water Temperature, Ocean Wave Estimates, and Ocean Current Profiles

Further information: A network of data collecting buoys and coastal stations

Website: <https://www.ndbc.noaa.gov/>

Introduction document: Handbook:  
<https://www.ndbc.noaa.gov/NDBCHandbookofAutomatedDataQualityControl2009.pdf>

**ID:** OC-052

**Name:** NOAA - Gridded Climate Datasets

Datasets	Areal Coverage	Grid Size	Time Step	Time Coverage	Levels
CMAP Precipitation	Global	2.5°x2.5°	Monthly,Pentad	1979-	None
COBE-SST	Global	1.0°x1.0°	Monthly	1891-present	None
COBE-SST2 Sea Surface Temperature	Global	1.0°x1.0°	Monthly	1850-2012	None
CPC .25x.25 Daily US Unified Precipitation	U.S.	.25°x.25°	Daily	1949-2006	None
CPC Hourly Precipitation	U.S.	2.0°x2.5°	Hourly	1948-2002	None
CPC Soil Moisture	Global	2.5°x2.5°	Monthly	1948-present	None
CRU Air Temperature and Combined Air Temperature/Marine Anomalies V3	Global	5.0°x5.0°	Monthly	1850-present	None
CRU Air Temperature and Combined Air Temperature/Marine Anomalies V4	Global	5.0°x5.0°	Monthly	1850-2013	None
ECMWF Reanalysis-40	Global	2.5°x2.5°	4X Daily, Daily, Monthly	1957-2002	17 Pressure
ERA-Interim Reanalysis	Global	0.7°x0.7°	4-times daily	1979-near present	None

**Component:** Ocean condition

**Data format:** NetCDF

**Status:** Ongoing

**Acquisition method:** See each dataset  
(at least includes satellite data, gauge data, model data)

**Data resolution:** See each dataset  
from 8 times daily to monthly  
from 0.04°x0.04° to 5.0°x5.0°

**Data available:** This a collection of climate datasets, which includes temperature, SST, precipitation, radiation, arctic, reanalysis, and climate indices data.

**Further information:** NOAA Earth System Research Laboratory

**Website:** <https://www.esrl.noaa.gov/psd/data/gridded/>

**Introduction document:**

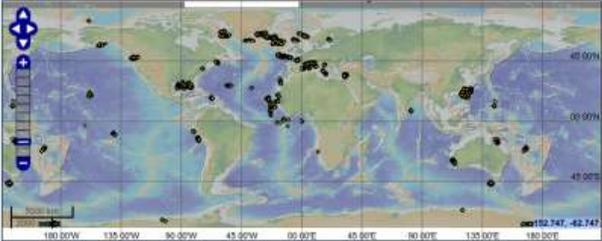
**ID:** OC-053

**Name:** Everyone's Gliding Observatories (EGO)

### EGO data management

EGO gliders are identified as a component of the Global Ocean Observing System (GOOS). It relies on a PI/operator/DAC/GDAC architecture ensuring the real time data flow to the global data bases (GTS, Copernicus, EMODNET...).

The EGO data management system has been discussed and accepted by the EGO community in particular during EGO-COST Action ES0904 and EU FP7 GROOM project.



"Official" documentation and tools are available in the following section.

- [Reference documents](#)

Procedures to process your data into EGO format and advertise your glider activity at European and international level (OceanGliders, EMODNET, Coriolis).

- [Upload your data](#)

Procedures to access and download EGO data are described in the following section :

- [Data access and download](#)

If you are not ready yet to share your data, you can simply register your glider activity in the following section.

- [How to register a glider](#)

**Component:** Ocean condition

**Data format:** NetCDF

**Status:** Ongoing (since 2005)

**Acquisition method:**

- 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 controlled in delayed mode.

**Data resolution:** Full resolution

**Data available:** 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, and acoustic sea water data are included.

**Further information:** A component of the Global Ocean Observing System (GOOS)

**Website:** <https://www.ego-network.org/dokuwiki/doku.php>

**Introduction document:** <https://www.ego-network.org/dokuwiki/doku.php?id=public:datamanagement>

**ID:** OC-054

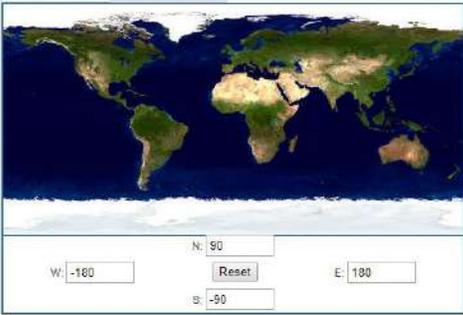
**Name:** NASA - SeaWiFS Bio-optical Archive and Storage System (SeaBASS)

**General Search Parameters:**

Measured between the dates of  and

Archived between the dates of  and

Within the coordinates:<sup>?</sup>



W:  N:  E:  S:

**Keyword Search Filters:**  
Limit search results by affiliation, investigator, experiment, or cruise name. Use the plus button to add multiple queries.

Search String:

Any  All

**Validation Search Parameters:**

Sensor Selection:  
 MODIS-Aqua | 2018.0 | vs. In situ  
 MODIS-Aqua | 2018.0 | vs. MODIS-Aqua | 2018.0

Water Depth:  
 Minimum (in meters)  Maximum

Exclusion Criteria:

	MODIS-Aqua	
Minimum valid satellite pixels:	<input type="text" value="50"/>	%
Maximum solar zenith angle:	<input type="text" value="75"/>	degrees
Maximum satellite zenith angle:	<input type="text" value="60"/>	degrees
Maximum time difference between satellite and in situ:	<input type="text" value="3"/>	hours
Maximum coefficient of variation of satellite pixels:	<input type="text" value="0.15"/>	
Maximum irradiance difference between measured and modeled:	<input type="text" value="20"/>	%
Maximum windspeed:	<input type="text" value="35"/>	m/s

Products:  
 a  a<sub>ap</sub>  angstrom  AOT  R<sub>rs</sub>  
 b<sub>bp</sub>  chl  K<sub>s</sub>\_490  PAR  FIC  
 POC  R<sub>w</sub>

Data Sources:  
 SeaBASS Only  SeaBASS + AERONET-OC\*  AERONET-OC Only\*  MOBY Only\*  
\*MOBY and AERONET results are preliminary.

**Component:** Ocean condition

**Data format:** ASCII/ Map

**Status:** Ongoing

**Acquisition method:** In situ data and satellite data

**Data resolution:** See each dataset

**Data available:** 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.

**Further information:**

**Website:** [https://seabass.gsfc.nasa.gov/wiki/System\\_Description](https://seabass.gsfc.nasa.gov/wiki/System_Description)

Data directory: <https://seabass.gsfc.nasa.gov/archive/>

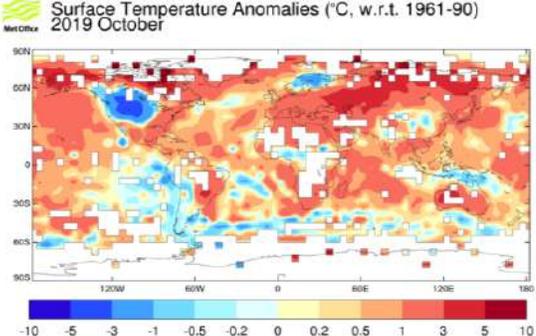
**Introduction document:**

ID: OC-055

Name: Hadley Centre Observation Datasets

### Met Office Hadley Centre observations datasets

<b>IMPORTANT CLIMATE INDICATORS</b> <a href="#">Global Average Temperatures</a> <a href="#">How do we know the world has warmed?</a> <a href="#">UK climate and weather statistics</a> <a href="#">Quarterly Monitoring Reports</a>	Researchers at the Met Office Hadley Centre produce and maintain a range of gridded datasets of meteorological variables for use in climate monitoring and climate modelling. This site provides access to these datasets for <b>bona fide scientific research and personal usage only</b> . Please note that this is not an operational service. This site is run by research staff with the primary aim of improving collaboration with fellow researchers. Everyone is welcome to use the site, and we aim to make it reliable, but it does not have the same level of support as the official Met Office web site. Hadley Centre climate model data is distributed through the <a href="#">British Atmospheric Data Centre</a> . Some climate model runs are also available on the <a href="#">WCRP CMIP3 Multi-model data archive</a> . Please consider the use of these data resources in your work, if appropriate. The Hadley Centre collaborates with <a href="#">UKCIP</a> on modelled and observed datasets.
<b>MARINE DATASETS</b> <a href="#">HadISST</a> - Globally complete sea-ice and sea-surface temperature <a href="#">HadSST3</a> - Uninterpolated sea-surface temperature <a href="#">HadIMAT2</a> - Uninterpolated night marine air temperature <a href="#">EN4</a> - In situ ocean temperature and salinity profiles and objective analyses <a href="#">HadSOA</a> - Global subsurface ocean analysis of temperature <a href="#">HadDTR</a> - A climatology of the diurnal temperature range of the Sea Surface	<b>Commercial and media enquiries</b> You can access the Met Office Customer Centre, any time of the day or night by phone, fax or e-mail. Trained staff will help you find the information or products that are right for you. <a href="#">Contact the Met Office Customer Centre</a>
<b>PRESSURE DATA</b> <a href="#">HadSLP2</a> - Monthly gridded sea-level pressures <a href="#">EMSLP</a> - Daily gridded sea-level pressures	
<b>UPPER AIR DATA</b> <a href="#">HadAT</a> - Gridded free-atmosphere temperatures from radiosondes <a href="#">QUASC</a> - Quantifying Uncertainty in Adjusted Radiosonde Climate records <a href="#">HadIH</a> - Analysis of humidity trends from radiosondes	
<b>DAILY &amp; HOURLY DATA/EXTREME INDICES</b> <a href="#">HadGHCND</a> - Gridded land daily temperatures <a href="#">HadEX</a> - Indices of climate extremes <a href="#">HadEX2</a> - Indices of climate extremes <a href="#">HadISD</a> - Sub-daily station data for climate extremes	



Component: Ocean condition

Data format: ASCII/ NetCDF

Status: Ongoing (since 1990)

Acquisition method: In situ data and satellite data

Data resolution: See each dataset

Data available: 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.

Further information: Researchers at the Met Office Hadley Centre produce and maintain a range of gridded datasets of meteorological variables for use in climate monitoring and climate modelling. This site provides access to these datasets for bona fide scientific research and personal usage only.

Observed subsurface ocean temperature and salinity profiles with data quality information, and, objective analyses formed from the profile data with uncertainty estimates are included.

Data are available from 1900 to the present.

Website: <https://www.metoffice.gov.uk/hadobs/>

Introduction document:

ID:

OC-056

Name:

The International Comprehensive Ocean-Atmosphere Data Set (ICOADS)

The screenshot shows the ICOADS website interface. On the left is a navigation menu with links for 'Data and Documentation', 'Chronology and News', 'Program Status', 'Publications', 'Related Data and Resources', 'Contact Points', 'Collaborations', and 'Events'. The main content area features a 'DATA ALERT' about drifting buoy reports, a brief description of the dataset, and a grid of six plots: (a) time-series of platform mixture, (b) map of platform mixture, (c) sea level pressure map, (d) sea surface temperature departures map, and two time-series plots for sea level pressure and sea surface temperature.

Component:

Ocean condition

Data format:

IMMA format/ CSV/ ASCII/ NetCDF

Status:

Ongoing (since1662)

Acquisition method:

Real-time data and delayed mode data

Data resolution:

See each dataset.

Spatial resolution: 2° latitude x 2° longitude boxes back to 1800 (and 1°x1° boxes since 1960)

Temperal resolution: monthly/ yearly

Data available:

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.

Further information:

ICOADS is probably the most complete and heterogeneous collection of surface marine data in existence.

Website:

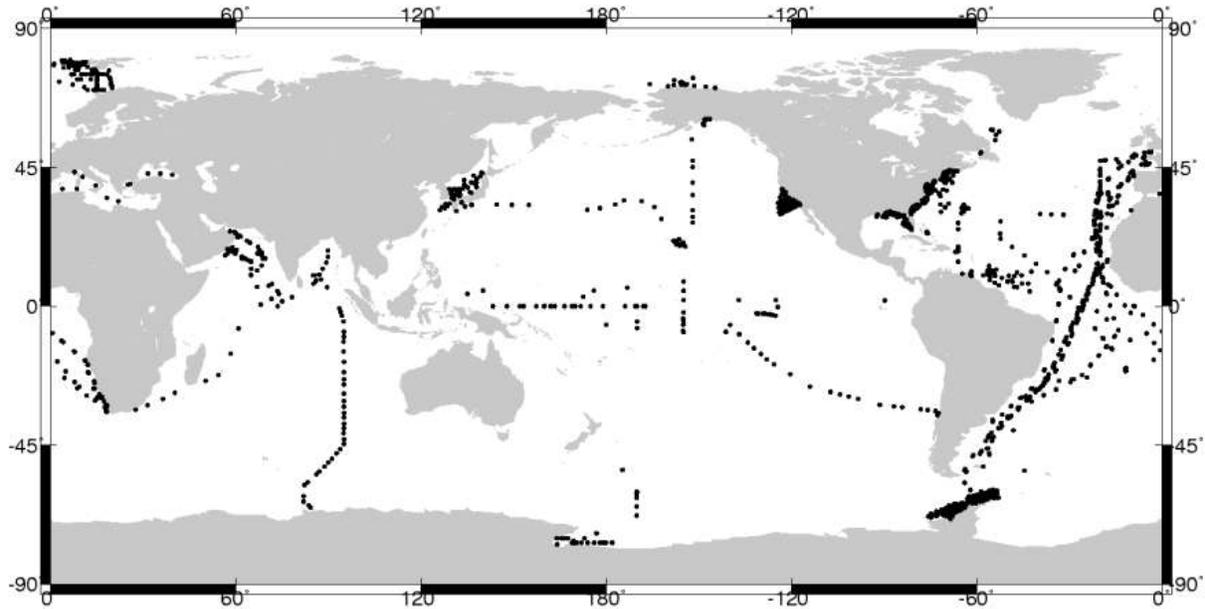
<https://icoads.noaa.gov/>

Introduction document:

<https://rda.ucar.edu/datasets/ds548.1/>

**ID:** OC-057

**Name:** NASA bio-Optical Marine Algorithm Dataset (NOMAD)



**Component:** Ocean condition

**Data format:** ASCII

**Status:** uncertain (newest version in 2008)

**Acquisition method:** In situ data (cruise) and satellite data

**Data resolution:** N/A

**Data available:** 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.

**Further information:**

**Website:** <https://seabass.gsfc.nasa.gov/wiki/NOMAD>

**Introduction document:**

**ID:** OC-058

**Name:** Ocean Observatories Initiative (OOI)

### OOI Data

The OOI CI provides a common operating infrastructure, the OOI system software (OOI Net), to connect and enable the coordination of operations of the OOI marine components (Global, Coastal, and Cabled Arrays) with the scientific and educational pursuits of oceanographic research communities. OOI Net permits 24/7 connectivity to bring sustained ocean observing data to a user any time, any place. Anyone with an internet connection can create a login on OOI Net and access OOI data.



DATA PORTAL

The primary source for all OOI datasets and metadata



EXPLORE OOI DATA PRODUCTS

Browse the list of all major data products sampled by the OOI



OOI CRUISE DATA

Access data from all OOI Cruises

#### Additional Data Tools

ERDDAP SERVER

Uncabled, telemetered data from moorings and gliders

RAW DATA SERVER

Data as they are received, in instrument-specific format

LIVE VIDEO FEED

Live video from an Axial Seamount hydrothermal vent

OOI M2M INTERFACE

Programmatic access to OOI data via an API

CORE INSTRUMENT ANALYTICAL RESULTS

Processed analytical data from samples brought back to shore and analyzed in a laboratory.

OOI DOWNLOAD POLICY

Policies to handle asynchronous data download and raw data archive storage.

**Component:** Ocean condition

**Data format:** NetCDF/ CSV/ JSON

**Status:** Ongoing

**Acquisition method:** Near-real time,model data, in situ data(cruises)

**Data resolution:** See each dataset

**Data available:** 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/>

**Further information:** OOI deploys sensors in arrays of moorings, mobile assets, and cabled sensors to measure oceanographic variables.

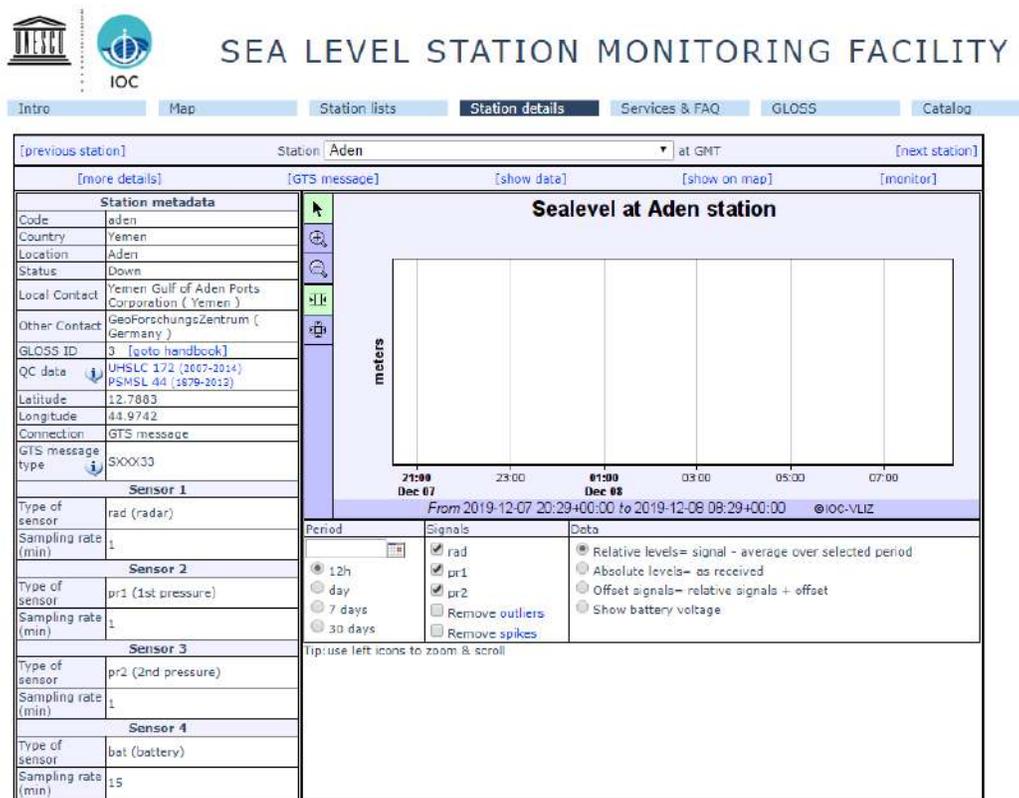
OOI provides data products for a 25-year-plus time period within an expandable architecture.

WHOI is the leader, owner, and operator.

**Website:** <http://oceanobservatories.org/data/>

**Introduction document:**

**ID:** OC-059  
**Name:** UNESCO/ IOC - Sea Level Facility



- Component:** Ocean condition
- Data format:** Map/ ASCII
- Status:** Ongoing
- Acquisition method:** Real time data and delayed data
- Data resolution:** See each dataset  
12h/ day/ 7 days/ 30 days
- Data available:** Sea Level
- Further information:** 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.
- Website:** <http://www.ioc-sealevelmonitoring.org/>
- Introduction document:**

ID:

OC-060

Name:

University of Hawaii - Sea Level Center

LHW#	GLOSS#	Location	Country	Latitude	Longitude	Start	End	Data	CSV	NetCDF	OldNetCDF
001	115	Polynia	Micronesia (Federated States of)	6.97000	155.18700	2001-12-17	2018-11-30	daily hourly	daily hourly	daily hourly	daily hourly
002	113	Tarawa Basiki	Kiribati	1.33200	173.01500	1962-12-04	2019-11-30	daily hourly	daily hourly	daily hourly	daily hourly
003	199	Balba	Ecuador	-0.43790	-80.28500	1985-05-28	2015-11-30	daily hourly	daily hourly	daily hourly	daily hourly
004	114	Nizuru	Nizuru	-0.52300	166.90900	1992-07-08	2019-10-31	daily hourly	daily hourly	daily hourly	daily hourly
006	112	Majuro	Marshall Islands (the)	7.10000	171.37200	1993-05-14	2019-11-30	daily hourly	daily hourly	daily hourly	daily hourly
007	120	Malasca	Papua	7.33000	134.48300	1989-05-10	2019-11-30	daily hourly	daily hourly	daily hourly	daily hourly
008	119	Yap	Micronesia (Federated States of)	9.51700	158.13500	1985-05-11	2019-11-30	daily hourly	daily hourly	daily hourly	daily hourly
009	096	Honiaz	Solomon Islands	-8.42200	158.95500	1984-07-26	2018-10-31	daily hourly	daily hourly	daily hourly	daily hourly
011	145	Christmas	Kiribati	1.98500	-157.47700	1974-02-07	2019-10-31	daily hourly	daily hourly	daily hourly	daily hourly
013	145	Karaiti	Kiribati	-2.81600	-171.17800	1975-05-02	2019-11-30	daily hourly	daily hourly	daily hourly	daily hourly
014	197	French Frigate	United States of America (the)	23.96800	-166.20800	2007-06-27	2019-10-31	daily hourly	daily hourly	daily hourly	daily hourly
015	140	Papeete	France	-17.53200	-149.58700	1975-06-00	2019-10-31	daily hourly	daily hourly	daily hourly	daily hourly
016	138	Rikoa	France	-23.12500	-134.95300	1989-10-08	2019-10-31	daily hourly	daily hourly	daily hourly	daily hourly
017		Hiva Oa	France	-9.81800	-155.02700	2010-05-05	2019-10-31	daily hourly	daily hourly	daily hourly	daily hourly
018	122	Suva	Fiji	-18.13200	175.42700	1986-01-27	2018-10-31	daily hourly	daily hourly	daily hourly	daily hourly
019	123	Noumea	France	-22.24200	168.41700	1967-02-25	2019-10-31	daily hourly	daily hourly	daily hourly	daily hourly
021	175	Juan Fernandez	Chile	-33.62200	-78.82300	1985-06-05	2019-10-31	daily hourly	daily hourly	daily hourly	daily hourly
022	137	Easter	Chile	-27.15300	-109.44000	1970-04-03	2019-10-31	daily hourly	daily hourly	daily hourly	daily hourly
023	139	Hanroga	Cook Islands (the)	-21.29700	-159.77500	1995-02-20	2019-11-30	daily hourly	daily hourly	daily hourly	daily hourly
024	143	Punalu'u	Cook Islands (the)	-8.97700	-155.65300	1977-04-17	2019-10-31	daily hourly	daily hourly	daily hourly	daily hourly
025	121	Fuaifua	Tuvalu	-8.52500	179.19500	1993-03-24	2019-10-31	daily hourly	daily hourly	daily hourly	daily hourly
026	116	Saipan	United States of America (the)	15.22700	145.74200	1870-06-18	2018-10-31	daily hourly	daily hourly	daily hourly	daily hourly
028	117	Kiangnamangi	Micronesia (Federated States of)	1.00000	154.77700	1978-06-00	2019-11-30	daily hourly	daily hourly	daily hourly	daily hourly

Component:

Ocean condition

Data format:

CSV/ NetCDF

Status:

Ongoing

Acquisition method:

Real-time data

Data resolution:

Daily/ hourly

Data available:

Global sea level rise

Further information:

Tide gauges data around the world from GLOSS (Global Sea Level Observing System).

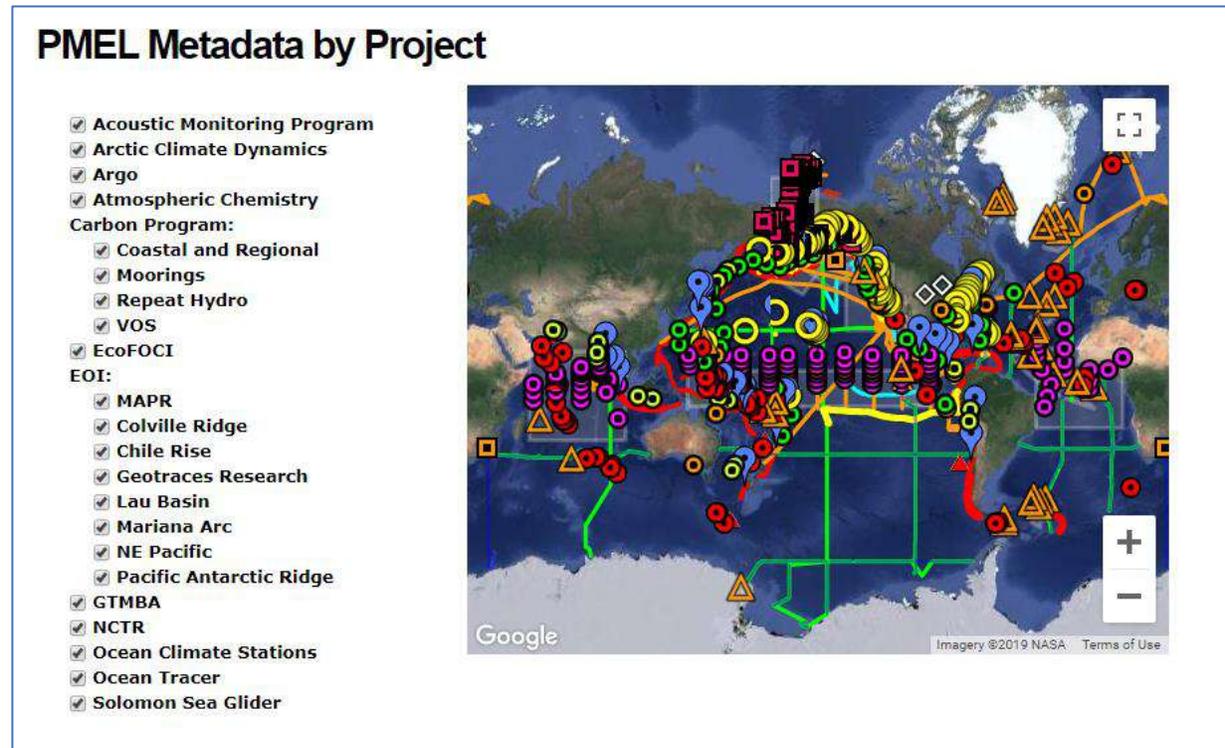
Website:

<http://uhslc.soest.hawaii.edu/datainfo/>

Introduction document:

**ID:** OC-061

**Name:** NOAA - Pacific Marine Environmental Laboratory (PMEL)



**Component:** Ocean condition

**Data format:** See each dataset (at least includes ASCII)

**Status:** Ongoing

**Acquisition method:** See each dataset

**Data resolution:** See each dataset

**Data available:** 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>

**Further information:**

**Website:** <https://www.pmel.noaa.gov/public/pmel/globe/>

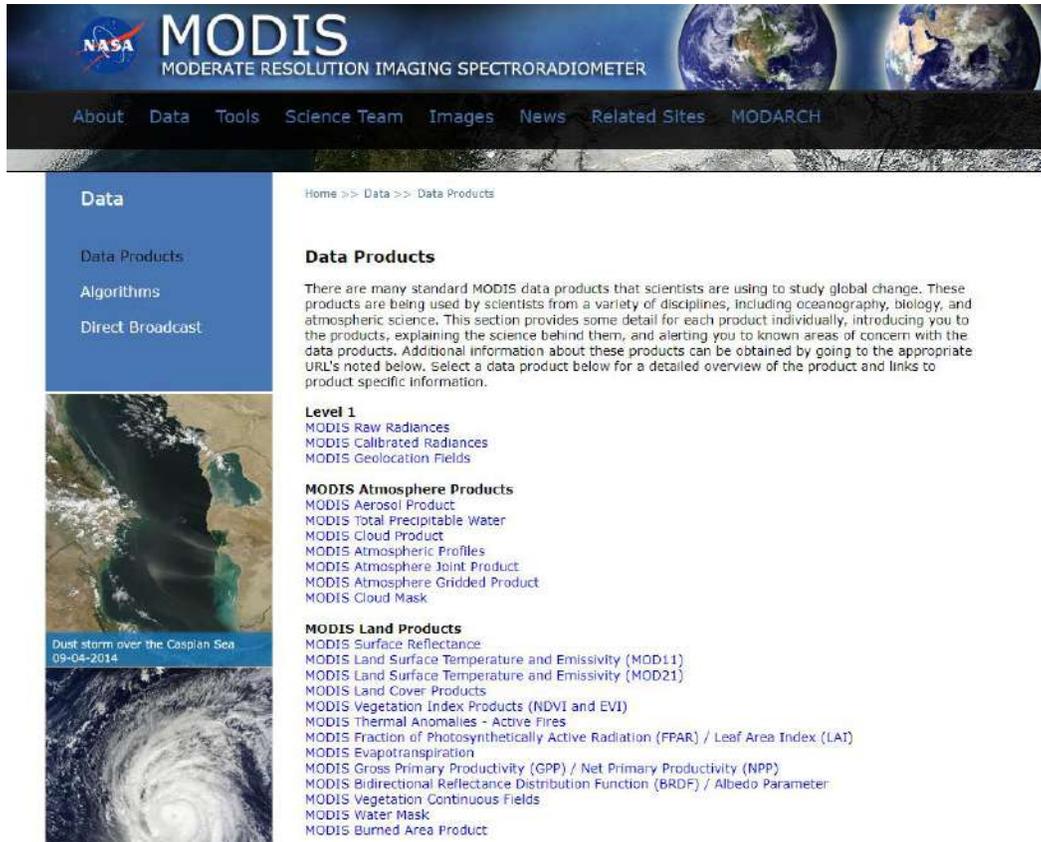
**Introduction document:**

ID:

OC-062

Name:

Moderate Resolution Imaging Spectroradiometer (MODIS)



The screenshot shows the NASA MODIS website. At the top, there is a banner with the NASA logo, the text 'MODIS MODERATE RESOLUTION IMAGING SPECTRORADIOMETER', and two images of Earth from space. Below the banner is a navigation menu with links: About, Data, Tools, Science Team, Images, News, Related Sites, and MODARCH. The main content area is titled 'Data Products' and includes a sidebar with links to 'Data Products', 'Algorithms', and 'Direct Broadcast'. The main text explains that there are many standard MODIS data products used by scientists to study global change. It lists several product categories: Level 1 (Raw Radiances, Calibrated Radiances, Geolocation Fields), MODIS Atmosphere Products (Aerosol Product, Total Precipitable Water, Cloud Product, Atmospheric Profiles, Atmosphere Joint Product, Atmosphere Gridded Product, Cloud Mask), and MODIS Land Products (Surface Reflectance, Land Surface Temperature and Emissivity, Land Cover Products, Vegetation Index Products, Thermal Anomalies - Active Fires, Fraction of Photosynthetically Active Radiation / Leaf Area Index, Evapotranspiration, Gross Primary Productivity / Net Primary Productivity, Bidirectional Reflectance Distribution Function / Albedo Parameter, Vegetation Continuous Fields, Water Mask, Burned Area Product). Two satellite images are shown: one of a dust storm over the Caspian Sea (09-04-2014) and another of a large-scale atmospheric circulation pattern.

Component:

Ocean condition

Data format:

See each dataset (at least includes ASCII)

Status:

Ongoing

Acquisition method:

Satellite data

Data resolution:

See each dataset

Data available:

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

**Further information:**

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  $\mu\text{m}$ , and it acquires data at three spatial resolutions -- 250m, 500m, and 1,000m.

**Website:**

<https://modis.gsfc.nasa.gov/data/>

**Introduction document:**

ID:

OC-063

Name:

UNESCO/IOC - Harmful Algal Bloom Program (HAIS)



**Component:**

Ocean condition

**Data format:**

online map/ PDF/ CSV

**Status:**

Ongoing (since 1985)

**Acquisition method:**

N/A

**Data resolution:**

N/A

**Data available:**

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.

**Further information:**

- Dynamic mapping: On-line mapping tool for all data, and combination of data, on species distribution, events, syndromes, etc.
- 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.
- 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.

- 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.
- Discussion forum: A dynamic, participatory forum for discussion and direct access to other platforms.

**Website:**

<http://hab.ioc-unesco.org/>

Online Map: <http://envlit.ifremer.fr/var/envlit/storage/documents/paramaps/haedat/>

CSV Data: <http://haedat.iode.org/browseEvents.php>

**Introduction document:**

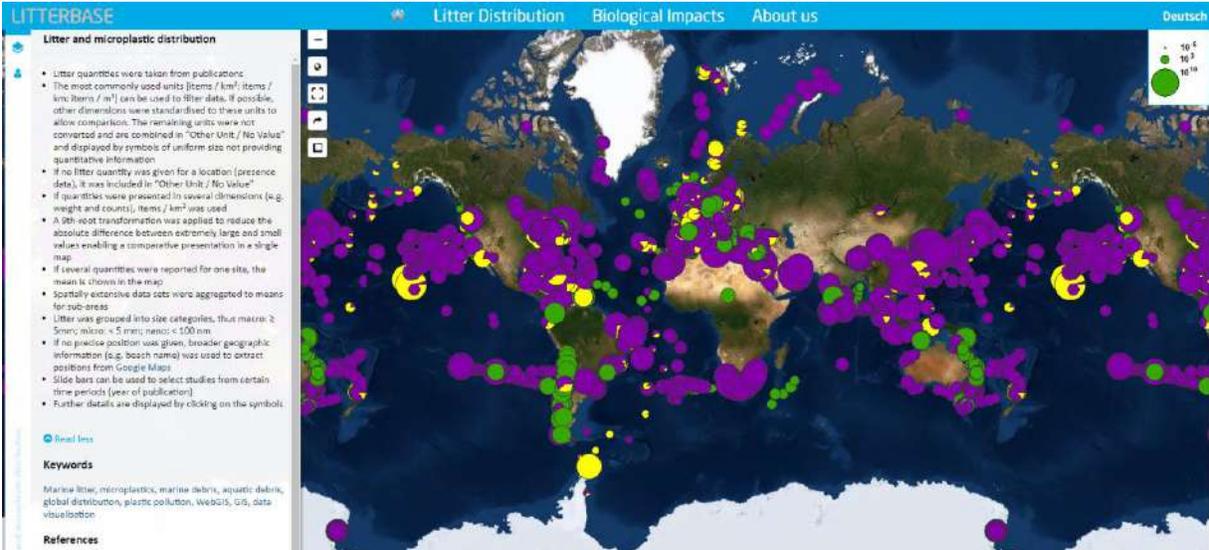
[http://hab.ioc-unesco.org/index.php?option=com\\_oe&task=documents&Itemid=10](http://hab.ioc-unesco.org/index.php?option=com_oe&task=documents&Itemid=10)

ID:

OC-064

Name:

LITTERBASE



**Component:**

Ocean condition

**Data format:**

Online Map Viewer

**Status:**

Ongoing

**Acquisition method:**

Research data

**Data resolution:**

N/A

**Data available:**

LITTERBASE provides information about the amount and distribution of litter and microplastic, and interactions between aquatic life and marine litter.

**Further information:**

LITTERBASE summarises results from 1,960 scientific studies in understandable global maps and figures and opens scientific knowledge on marine litter to the public.

**Website:**

<https://litterbase.awi.de/>

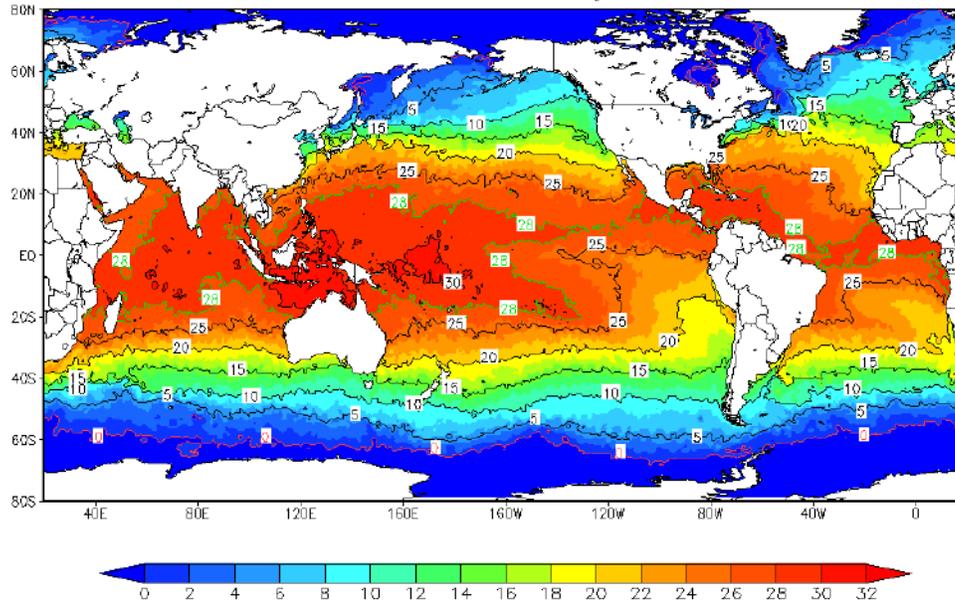
**Introduction document:**

**ID:** OC-065

**Name:** NOAA - Optimum Interpolation Sea Surface Temperature (OISST)

### Daily OISST intv2: 06DEC2019

AVHRR – only



**Component:** Ocean condition

**Data format:** NetCDF

**Status:** Ongoing

**Acquisition method:** Analysis constructed by combining observations from different platforms (satellites, ships, and buoys)

**Data resolution:** 1/4° daily

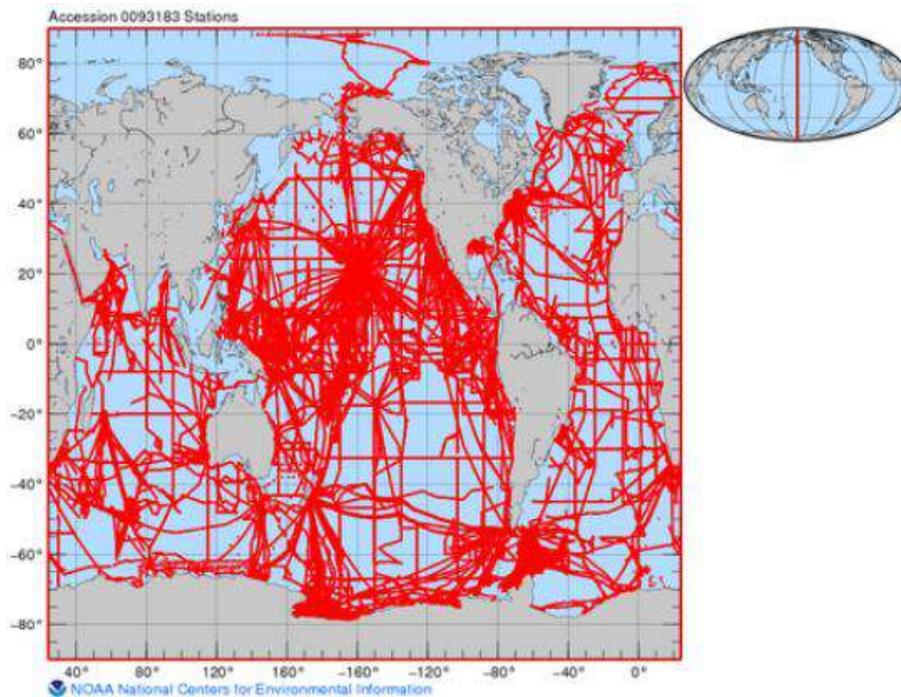
**Data available:** Sea Surface Temperature

**Further information:** 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.

**Website:** <https://www.ncdc.noaa.gov/oisst>

**Introduction document:**

**ID:** OC-066  
**Name:** NOAA - Global Ocean Currents Database (GOCD)



**Component:** Ocean condition

**Data format:** NetCDF/ ASCII

**Status:** Finished (1962 - 2013)

**Acquisition method:** In situ data

**Data resolution:** High resolution

**Data available:** Currents

**Further information:** 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.

**Website:** <https://www.nodc.noaa.gov/gocd/index.html>

**Introduction document:**

**ID:** OC-067

**Name:** CMA - Fengyun Satellite data centre

Product	Satellite	Instrument	Period	Format	Resolution	Start Date	Last Date	File count	Volume(GB)	Availability	Operation	Quality Report
MERSI OCC 10-Day	FY3A	MERSI	10DAY	HDF	5000M	2010-01-10	2014-09-30	170	114.91	View	Go	
MERSI OCC Daily	FY3A	MERSI	DAILY	HDF	1000M	2009-03-13	2014-09-21	1290953	50522.76	View	Go	
MERSI OCC Monthly	FY3A	MERSI	MONTHLY	HDF	5000M	2010-01-31	2014-09-30	57	38.53	View	Go	
<b>Total:</b>								<b>1291180</b>	<b>50676.20</b>			

**Component:** Ocean condition

**Data format:** NetCDF

**Status:** Ongoing

**Acquisition method:** Satellite data

**Data resolution:** daily, 10-days, monthly

**Data available:** Sea Surface Temperature and wind speed

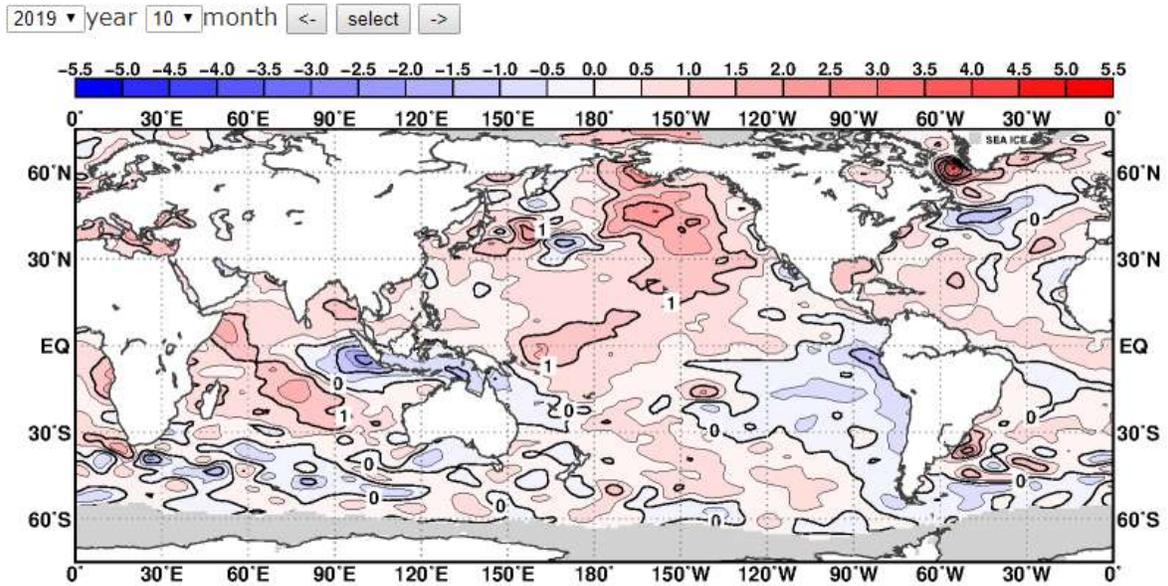
**Further information:** FengYun-3, or FY-3 satellites, are China's second generation polar-orbiting meteorological satellites, with substantively enhanced functionalities and technical capabilities. They are designed to enhance China's three dimensional atmospheric sounding capability and global data 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.

**Website:** <http://satellite.nsmc.org.cn/PortalSite/Data/DataView.aspx?SatelliteType=0&DataCategoryCode=Ocean&DataActionCode=OCC>

**Introduction document:**

**ID:** OC-068

**Name:** JMA - Monthly Mean Sea Surface Temperature Anomalies



**Component:** Ocean condition

**Data format:** Figures

**Status:** Ongoing

**Acquisition method:** Satellite data

**Data resolution:** N/A

**Data available:** Sea Surface Temperature

**Further information:**

**Website:** [https://ds.data.jma.go.jp/tcc/tcc/products/elnino/ocean/sst-ano-global\\_tcc.html](https://ds.data.jma.go.jp/tcc/tcc/products/elnino/ocean/sst-ano-global_tcc.html)

**Introduction document:**

**ID:** OC-069  
**Name:** **JMA - Description of Daily Sea Surface Temperature Analysis for Climate Monitoring (COBE-SST)**

**Global Sea Surface Temperature Data Sets**

We provide 1x1 degree resolution GPV data from January 1891 up to the latest month. Information about the SST analysis and explanation for SST-GPV file are available in following pages respectively.

- [Daily Sea Surface Analysis for Climate Monitoring and Predictions \(COBE-SST\)](#)
- [Explanation for SST-GPV file](#)

**To obtain GPV files of historical monthly mean SSTs,**

Specify the period by "Month" and "Year", then push "Show Link List" or "Show URL List".  
**! Attention : Latest Data Set --- Nov. 2019 !**

Start of period - Month :  Year :

End of period - Month :  Year :

<-- It will show you the list of links to GPV files you specified.

<-- If you prefer to use a download-tool like wget, please try this button.

**To obtain GPV files of monthly mean SST normals,**

Push "Show Link List" or "Show URL List" below.

<-- It will show you the list of links to GPV files.

<-- If you prefer to use a download-tool like wget, please try this button.

**Normals are values averaged over the period from year 1981 to year 2010.**  
**\* Normal data were replaced on November 10th 2011.**

**Component:** Ocean condition

**Data format:** SST-GPV file

**Status:** Ongoing(since 1891)

**Acquisition method:** In situ data, historical data

**Data resolution:** 1x1°

**Data available:** Sea Surface Temperature

**Further information:** 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.

**Website:** [http://ds.data.jma.go.jp/tcc/tcc/products/elnino/cobesst\\_doc.html](http://ds.data.jma.go.jp/tcc/tcc/products/elnino/cobesst_doc.html)

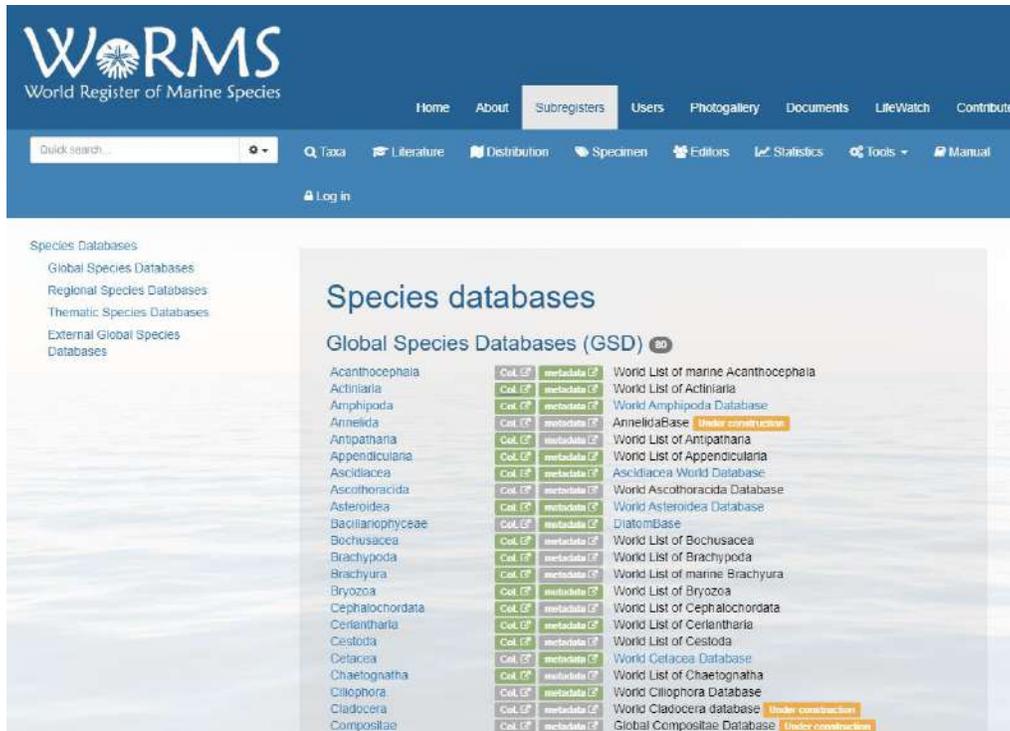
**Introduction document:**

## ***Section 5***

# **Ocean asset**

**ID:** OA-001

**Name:** Global Species Databases (GSD)



**Component:** Ocean asset

**Data format:** Classification of taxa

**Status:** Ongoing

**Acquisition method:** Lists of information

**Data resolution:** N/A

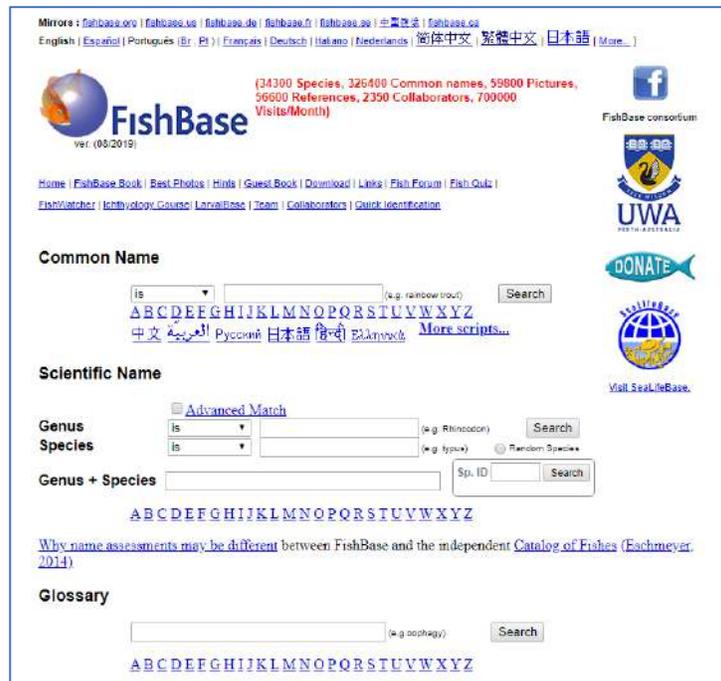
**Data available:** GSD is a global database of all marine life, including marine life taxonomic information.

**Further information:**

**Website:** [http://marinespecies.org/subregisters.php#species\\_dbs\\_GSD](http://marinespecies.org/subregisters.php#species_dbs_GSD)

**Introduction document:**

**ID:** OA-002  
**Name:** FishBase



**Component:** Ocean asset

**Data format:** CD-ROM/ Online database

**Status:** Ongoing

**Acquisition method:** Taxonomy, biology, trophic ecology, life history, and uses, as well as historical data reaching back to 250 years.

**Data resolution:** N/A

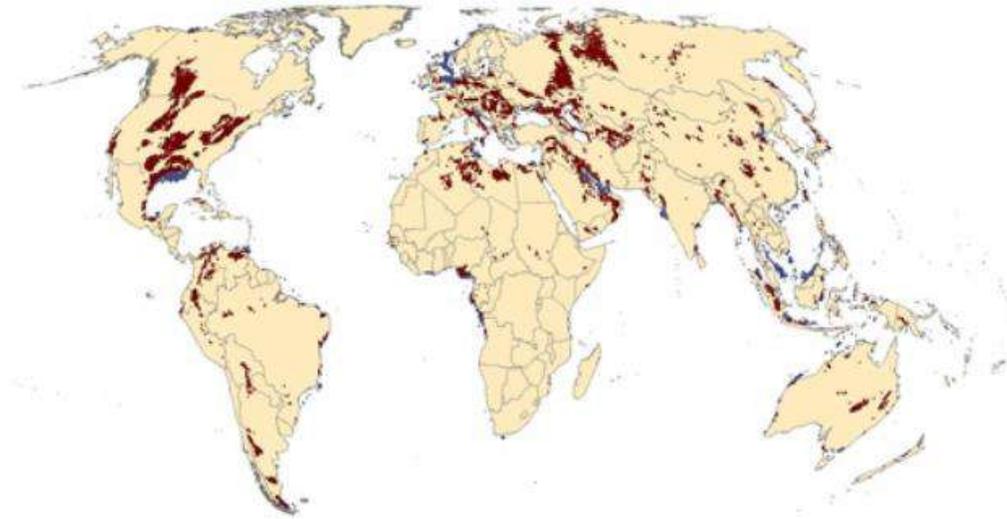
**Data available:** FishBase covers >33,000 fish species compiled from >52,000 references in partnership with >2,000 collaborators: >300,000 common names and >55,000 pictures.

**Further information:** 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.

**Website:** <https://www.fishbase.se/home.htm>

**Introduction document:**

**ID:** OA-003  
**Name:** Peace Research Institute Oslo (PRIO) - Petroleum Dataset



**Component:** Ocean asset

**Data format:** SHP

**Status:** Ongoing

**Acquisition method:** In situ data (Survey)

**Data resolution:** N/A

**Data available:** This dataset includes 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

**Further information:** This dataset provides 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

**Website:** <https://www.prio.org/Data/Geographical-and-Resource-Datasets/Petroleum-Dataset/Petroleum-Dataset-v-12/>

**Introduction document:** <https://www.prio.org/Global/upload/CSCW/Data/Geographical/codebook.pdf>

**ID:** OA-004  
**Name:** AlgaeBase

AlgaeBase content about team notulae algarum links contact search  
genus · species · literature · journals · images · common names · distribution · glossary · taxonomy browser · higher taxonomy

156,953 species and infraspecific names are in the database, 22,044 images, 60,671 bibliographic items, 451,249 distributional records.

AlgaeBase is a global algal database of taxonomic, nomenclatural and distributional information.

Enter names above the level of genus:  
Search Higher Taxonomy

Enter genus name:  
Search Genus

Enter species name:  
Search Species

AlgaeBase Twitter  
Please "follow" for occasional messages about AlgaeBase.

Tweets by @AlgaeBase

AlgaeBase Retweeted  
Erasmo Macaya Horta @erasmomac  
Alga roja "Ceranium" - Fotos del material obtenido en el 2do terreno del Curso teórico-práctico "Diversidad de Macroalgas de Tierra del Fuego" en #Ushuaia @CadicUshuaia @UNTDF 😊 #Macroalgas #seaweeds #Ceramiales #Rhodophyta #Argentina #Taxonomy #macroalgae #SeaweedCourse

Embed View on Twitter

Alga of the Week  
Helminthora australis J. Agardh ex Levring

Colpomenia sinuosa (Mertens ex Roth) Derbès & Solier Vero Beach, FL, USA

**Component:** Ocean asset

**Data format:** website

**Status:** Ongoing

**Acquisition method:** Species introduction

**Data resolution:** N/A

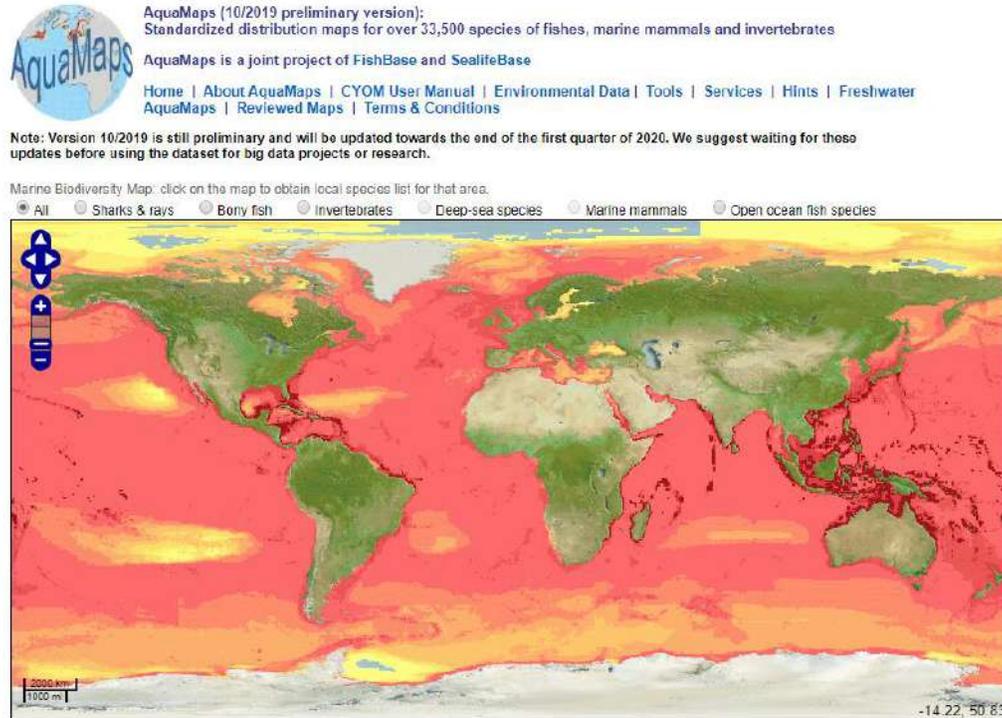
**Data available:** AlgaeBase is a database of information on algae that includes terrestrial, marine and freshwater organisms. At present, the data for the marine algae, particularly seaweeds, are the most complete.

**Further information:** AlgaeBase includes 155,780 species and infraspecific names are in the database, 21,968 images, 60,212 bibliographic items, 439,333 distributional records.

**Website:** <http://www.algaebase.org/>

**Introduction document:**

**ID:** OA-005  
**Name:** AquaMaps



**Component:** Ocean asset

**Data format:** Online maps/ CVS

**Status:** Ongoing (latest version 08 / 2016)

**Acquisition method:** survey data  
model data

**Data resolution:** half-degree

**Data available:** Standardized distribution maps for over 25,000 species of fishes, marine mammals and invertebrates.  
 As of August 2015, data included:

- 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

**Further information:** 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.

**Website:** <https://www.aquamaps.org/search.php>

**Introduction document:** [https://www.aquamaps.org/main/AquaMaps\\_Algorithm\\_and\\_Data\\_Sources.pdf#page=1](https://www.aquamaps.org/main/AquaMaps_Algorithm_and_Data_Sources.pdf#page=1)

**ID:** OA-006  
**Name:** SeaLifeBase

**SeaLifeBase**  
ver. (12/2019)

(76000 Species, 56200 Common names, 13100 Pictures, 36200 References, 300 Collaborators, 187000 Visits/Month)

[Home](#) | [Collaborators](#)

**Common Name**

contains  (e.g. turtle)

**Scientific Name**

**Genus** is  (e.g. Caretta)

**Species** is  (e.g. caretta)

**Genus + Species**  Sp. ID

[A](#) [B](#) [C](#) [D](#) [E](#) [F](#) [G](#) [H](#) [I](#) [J](#) [K](#) [L](#) [M](#) [N](#) [O](#) [P](#) [Q](#) [R](#) [S](#) [T](#) [U](#) [V](#) [W](#) [X](#) [Y](#) [Z](#)

To search without Genus, change Genus option from 'is' to 'contains'.

**Glossary**

(e.g. onidaria)

[A](#) [B](#) [C](#) [D](#) [E](#) [F](#) [G](#) [H](#) [I](#) [J](#) [K](#) [L](#) [M](#) [N](#) [O](#) [P](#) [Q](#) [R](#) [S](#) [T](#) [U](#) [V](#) [W](#) [X](#) [Y](#) [Z](#)

[Visit FishBase](#)

**Component:** Ocean asset

**Data format:** NetCDF/ CVS

**Status:** Ongoing

**Acquisition method:** Historical data

**Data resolution:** See each dataset

**Data available:** 75800 Species, 55800 Common names, 13100 Pictures, 36000 References, 300 Collaborators, 187000 Visits/Month

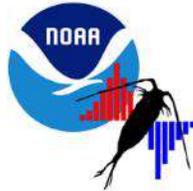
**Further information:** The long-term goal of this project is to create and maintain a FishBase-like information system for all non-fish marine organisms, ca. 400,000 spp. Of these, marine organisms (about 240,000 spp) are the target of the current project phase.

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).

**Website:** <https://www.sealifebase.ca/>

**Introduction document:**

**ID:** OA-007  
**Name:** Coastal & Oceanic Plankton Ecology, Production, & Observation Database (COPEPOD)



# COPEPOD Databases

*Plankton and ecosystem databases, compilations, and ancillary information.*

[Home](#) > [Publications](#)

The  
**C**oastal &  
**O**ceanic  
**P**lankton  
**E**cology,  
**P**roduction &  
**O**bservation  
**D**atabase

<p><b>Plankton Database</b></p> <p><i>a historical database of plankton cruises, projects, and surveys</i></p>	<p><b>Time-series Metabase</b></p> <p><i>a directory to over 340 marine ecological time series and programs</i></p>	<p><b>Spatial Fields</b></p> <p><i>spatiotemporal fields, climatologies, and visualization tools</i></p>	<p><b>Individual Plankton Traits</b></p> <p><i>a collection of plankton trait and rate data, as well as photos and distribution maps</i></p>
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**COPEPOD** : *the global plankton database*

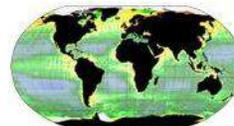
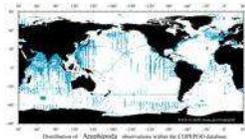


### Looking for INDIVIDUAL DATA SETS

- see a listing of all data from a given **GEOGRAPHIC REGION** (e.g., North Atlantic or Baltic Sea)
- search by associated **PROJECT** (e.g., CalCOFI or JGOFS)
- search by associated **INSTITUTION** (e.g., WHOI or IMR)
- search by associated **COUNTRY** (e.g., Germany or India)
- search by associated **SHIP** or **CRUISE** (e.g., *Eltanin* cruise 27)
- search by associated **INVESTIGATOR** (e.g., Brodskii or Odate)
- see the full (long) listing of **ALL DATA SETS** in COPEPOD.

### Looking for COMPILATIONS OF DATA SETS

- Taxa-based compilations of **Zooplankton Abundance** copepods, euphausiids, etc.
- Taxa-based compilations of **Phytoplankton Abundance** diatoms, dinoflagellates, etc.
- Method-based compilations of **Total Biomass** total wet mass, total displacement volume, etc.
- *see also* the **global zooplankton biomass fields**, as listed in COPEPOD's **SPATIAL FIELDS** menu section
- COPEPOD's data extraction tool (offline)



**Component:** Ocean asset  
**Data format:** Text/ Html/ CVS/ Maps  
**Status:** Ongoing  
**Acquisition method:** Observational data  
**Data resolution:** See each dataset

**Data available:**

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

**Further information:**

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).

**Website:**

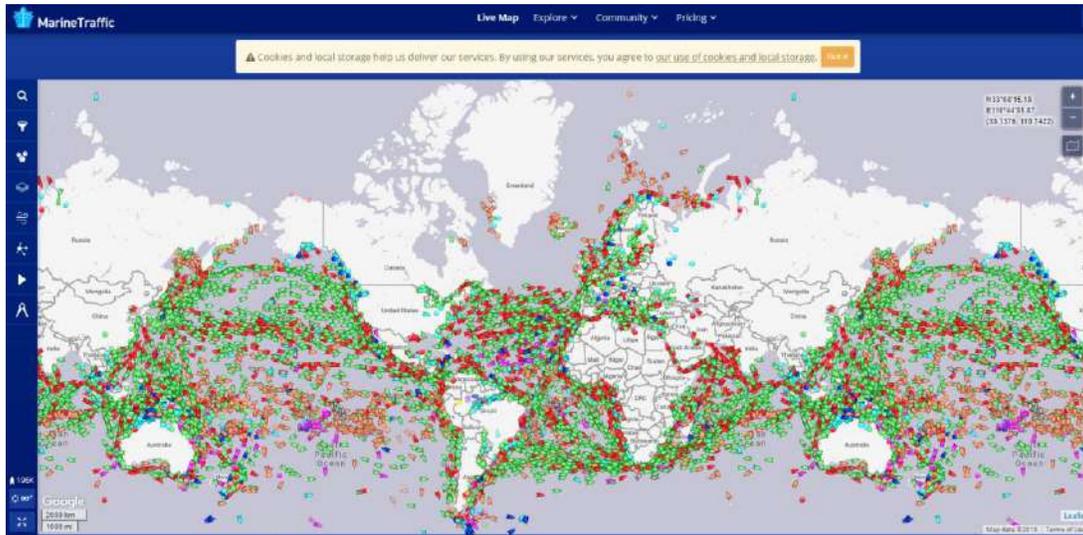
<https://www.st.nmfs.noaa.gov/plankton/about/databases.html>

**Introduction document:**

## ***Section 6***

# **Ocean service use**

**ID:** OSU-001  
**Name:** Marine traffic



**Component:** Ocean service use

**Data format:** CSV/ online maps

**Status:** Ongoing

**Acquisition method:** Near-Real time data, satellite data and coastal AIS-receiving stations

**Data resolution:** Temporal resolution of data depends on a number of parameters at the specific point and time.

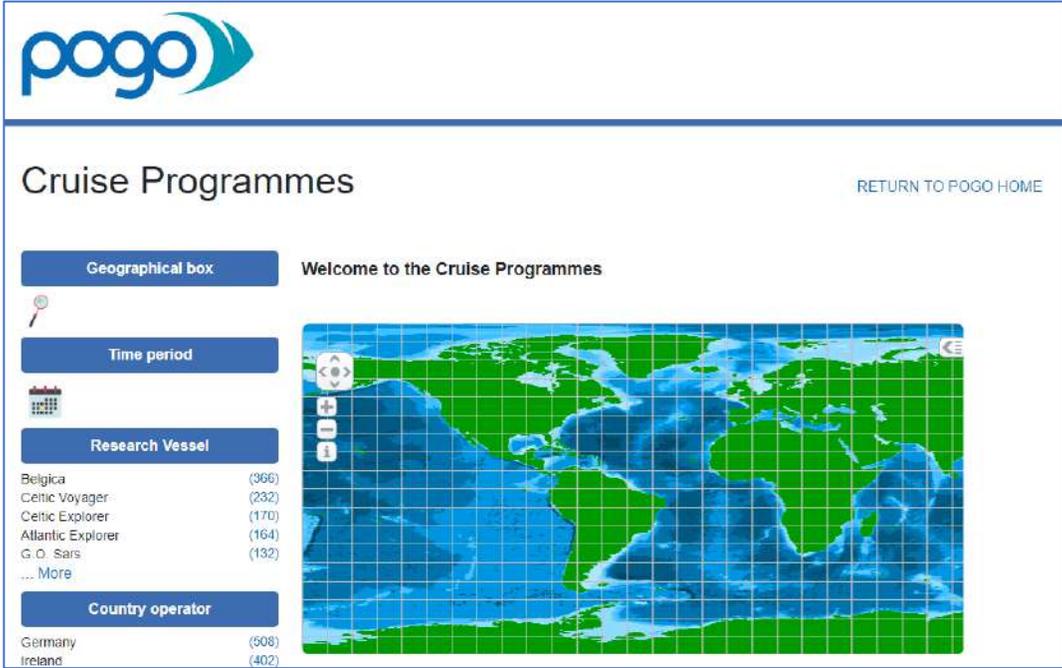
**Data available:** Vessel-tracking (public regarding vessels' positions and movements), ports' traffic, voyage details, and shipping

**Further information:** 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.

**Website:** <https://www.marinetraffic.com/>

**Introduction document:** <https://help.marinetraffic.com/hc/en-us/articles/205413457-Introduction->

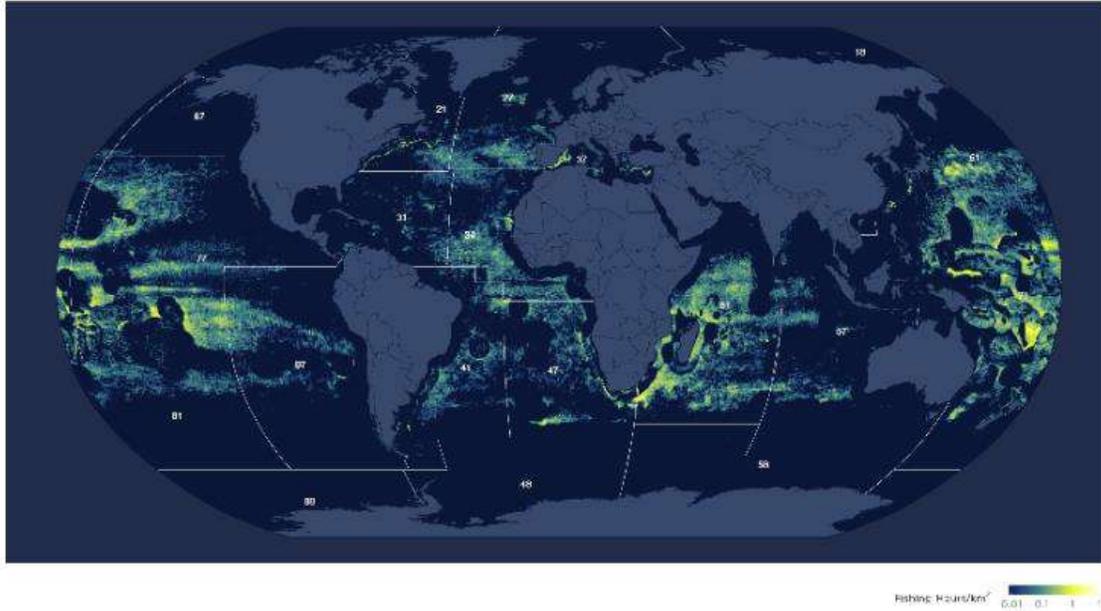
**ID:** OSU-002  
**Name:** Partnership for Observation of the Global Oceans (POGO) - ocean-going Research Vessels



The screenshot shows the POGO website's 'Cruise Programmes' page. At the top left is the POGO logo. The page title is 'Cruise Programmes' with a 'RETURN TO POGO HOME' link on the right. Below the title are four filter buttons: 'Geographical box', 'Time period', 'Research Vessel', and 'Country operator'. The 'Research Vessel' button is active, displaying a list of vessels with their respective counts: Belgica (366), Celtic Voyager (232), Celtic Explorer (170), Atlantic Explorer (164), G.O. Sars (132), and a 'More' link. The 'Country operator' button shows Germany (508) and Ireland (402). To the right of the filters is a world map with a grid overlay, titled 'Welcome to the Cruise Programmes'. The map shows various colored regions representing different cruise areas.

**Component:** Ocean service use  
**Data format:** Online Map  
**Status:** Ongoing  
**Acquisition method:** In situ data  
**Data resolution:** See each dataset  
**Data available:** This directory contains characteristics, owners and operator information for all marine and oceanographic research vessels, larger than 60 meters. Parameters measured are listed  
**Further information:**  
**Website:** [http://www.pogo-oceancruises.org/v\\_pogo\\_v1/browse\\_step.asp](http://www.pogo-oceancruises.org/v_pogo_v1/browse_step.asp)  
**Introduction document:**

**ID:** OSU-003  
**Name:** Global Fishing Watch



**Component:** Ocean service use

**Data format:** BigQuery Tables/ CSVs/ Geotiff Rasters in Google Earth Engine

**Status:** Ongoing

**Acquisition method:** Vessel Monitoring System (VMS) data, Automatic Identification Systems (AIS) data, and historical data dating to 2012

**Data resolution:** See each dataset

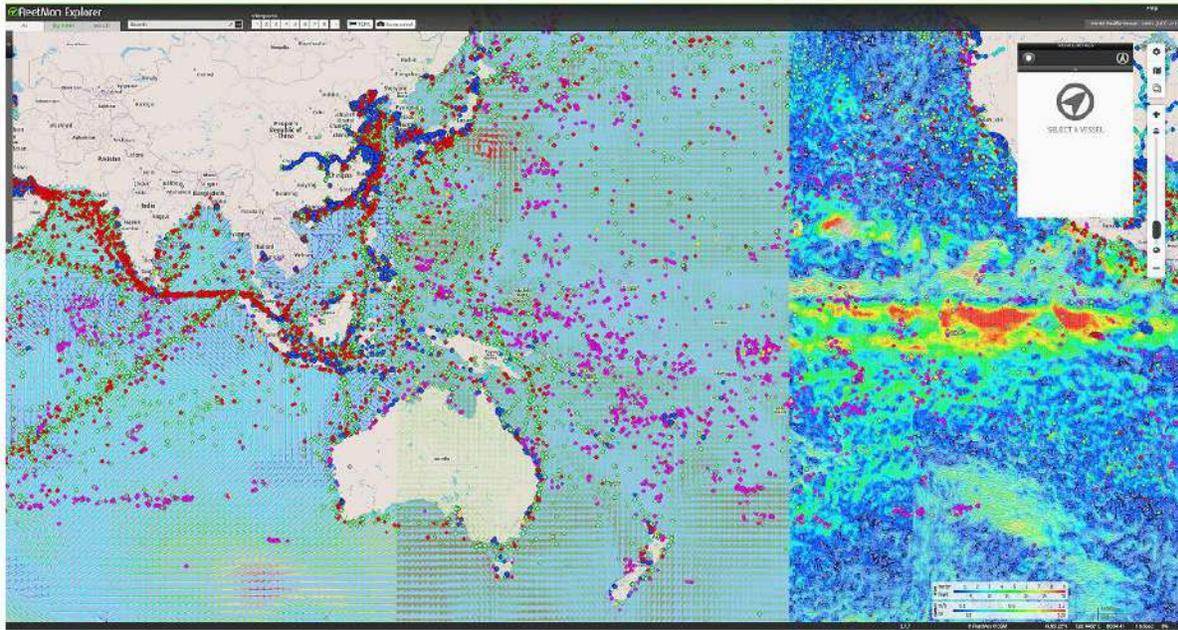
**Data available:** Global Fishing Watch provides gridded fishing activity data, vessel identity and classification lists, encounters between refrigerated cargo vessels and fishing vessels, future data products: ports, AIS On/Off events, and gridded VMS

**Further information:** The project observes 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.

**Website:** <http://globalfishingwatch.org/research/research-accelerator-program/>

**Introduction document:** Need registration

**ID:** OSU-004  
**Name:** FleetMon



**Component:** Ocean service use

**Data format:** CSV/ XLSX

**Status:** Ongoing (since 2007)

**Acquisition method:** Real-time vessel position data

**Data resolution:** Temporal resolution of data depends on a number of parameters at the specific point and time.

**Data available:** FleetMon is a commercial company that provides vessel data and shipping data.  
See detailed information: <https://www.fleetmon.com/services/historical-ais-data/>

**Further information:** FleetMon has customers across 164 countries and around a half million users.

**Website:** <https://www.fleetmon.com/>

**Introduction document:**

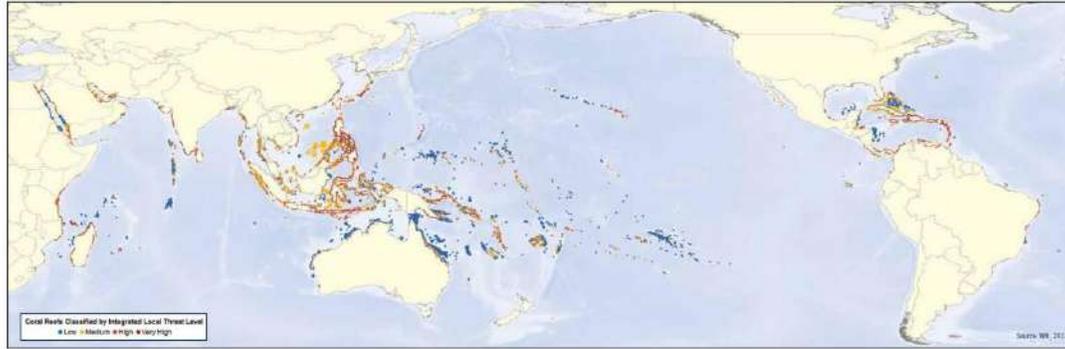
ID:

OSU-005

Name:

Reefs at Risk Revisited

Coral Reefs of the World Classified by Threat from Local Activities



Coral reefs are classified by estimated present threat from local human activities, according to the Reefs at Risk integrated local threat index. The index combines the threat from the following local activities:

- Overfishing and destructive fishing
- Coastal development
- Wastewater-based pollution
- Marine-based pollution and damage

This indicator does not include the impact to reefs from global warming or ocean acidification. Maps including ocean warming and acidification appear later in the report and on [www.wri.org/reefs](http://www.wri.org/reefs).

**Base data source:** Reef locations are based on 500 meter resolution gridded data reflecting shallow, tropical coral reefs of the world. Organizations contributing to the data and development of the map include the Institute for Marine Remote Sensing, University of South Florida (IMRS/USF), Institut de Recherche pour le Développement (IRD), UNEP-WCMC, The World Fish Center, and MPA. The composite data set was compiled from multiple sources, incorporating products from the Millennium Coral Reef Mapping Project prepared by IMRS/USF and IRD.

**Map projection:** Lambert Cylindrical Equal-Area, Central Meridian: 160° W

*Reefs at Risk Revisited* is a project of the World Resources Institute (WRI), developed and implemented in close collaboration with The Nature Conservancy (TNC), the WorldFish Center, the International Coral Reef Action Network (ICRAN), the United Nations Environment Programme - World Conservation Monitoring Centre (UNEP-WCMC), and the Global Coral Reef Monitoring Network (GCRMN).



**Component:**

Ocean service use

**Data format:**

SHP/KML/ PDF

**Status:**

2011

**Acquisition method:**

Sampling data and satellite data

**Data resolution:**

500-m resolution

**Data available:**

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.

**Further information:**

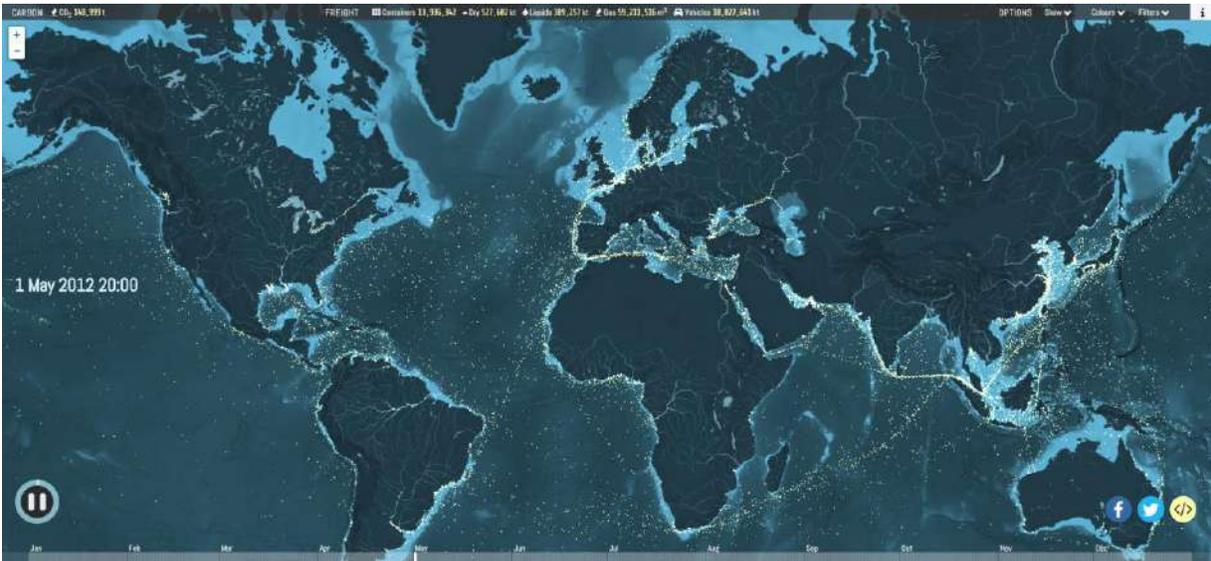
It evaluates threats to coral reefs from a wide range of human activities, and includes an assessment of climate-related threats to reefs

**Website:**

<http://www.wri.org/publication/reefs-risk-revisited>

**Introduction document:**

**ID:** OSU-006  
**Name:** Shipmap



**Component:** Ocean service use

**Data format:** MAP

**Status:** Finished (2012)

**Acquisition method:** AIS data

**Data resolution:** High-resolution animation

**Data available:** Shipmap includes the movement of different types of ship: Container, Dry bulk, Tanker, Gas bulk, and Vehicles. Also, it has a counter for emitted CO2 (in thousand tonnes) and the maximum freight carried by represented vessels (varying units).

**Further information:** 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.

**Website:** <https://www.shipmap.org/>

**Introduction document:**

ID:

OSU-007

Name:

International Chamber of Shipping (ICS)

The screenshot shows the ICS website with the following content:

- Header:** International Chamber of Shipping logo and tagline "Shaping the future of shipping". Navigation links: MEMBERSHIP, MEMBER LOGIN, CONTACT US.
- Menu:** NEWS, KEY ISSUES, SUBMISSIONS, FREE RESOURCES, PUBLICATIONS, ABOUT ICS, CAREERS AT SEA, SHIPPING FACTS.
- Breadcrumbs:** Home // All Publications (Full List)
- Section:** All Publications (Full List)
- Text:** Corrigendum: ICS Bridge Procedures Guide, Fifth Edition (Page 91). Note: Please note that ICS has recently issued a corrigendum related to page 91 of the Bridge Procedures Guide (Fifth edition). For further information click [here](#).
- Publications List:**
  - Guidelines on the Application of the IMO International Safety Management (ISM) Code COMING SOON. 5th Edition 2019 | £135. Description: The International Safety Management (ISM) Code is a key mandatory requirement for merchant ships, critical to the improvement of maritime safety and environmental performance. The new fifth edition of Guidelines on the Application of the IMO International Safety Management (ISM) Code includes comprehensive advice on compliance with the ISM Code for anyone involved with developing, implementing and maintaining Safety Management Systems (SMS), which are critical to successful and efficient ship operations.
  - Cyber Security Workbook for On Board Ship Use. 1st Edition 2019 | £175. Description: This workbook is a practical, straightforward and easy to understand guide to support the Master and the ship's crew with cyber security risk management. Along with detailed guidance on all aspects of cyber security protection, defence and response, the book contains comprehensive checklists to assist with the day to day management of onboard cyber security. It will also benefit shipowners, ship managers, ports and their IT departments. Resolution MSC.42(98) advises administrations to ensure that cyber risks are appropriately addressed in existing safety management systems (as defined in the ISM Code) no later than the first annual verification of
- Buttons:** "VIEW" with arrow icon.
- Sidebars:** "Publications" sidebar with links: All Publications (Full List), Safety and Operations, Environmental Protection, Employment and Training, eBooks, ISF Watchkeeper, Witherby Publishing Group, How to Order, ICS Publications Catalogue. "eBooks now available" banner. "ILO MLC" logo.

Component:

Ocean service use

Data format:

Publications/ Interactive Flag State Performance Table

Status:

Ongoing

Acquisition method:

N/A

Data resolution:

N/A

Data available:

Publications on shipping and CO2, maritime security, and environment protection

Further information:

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.

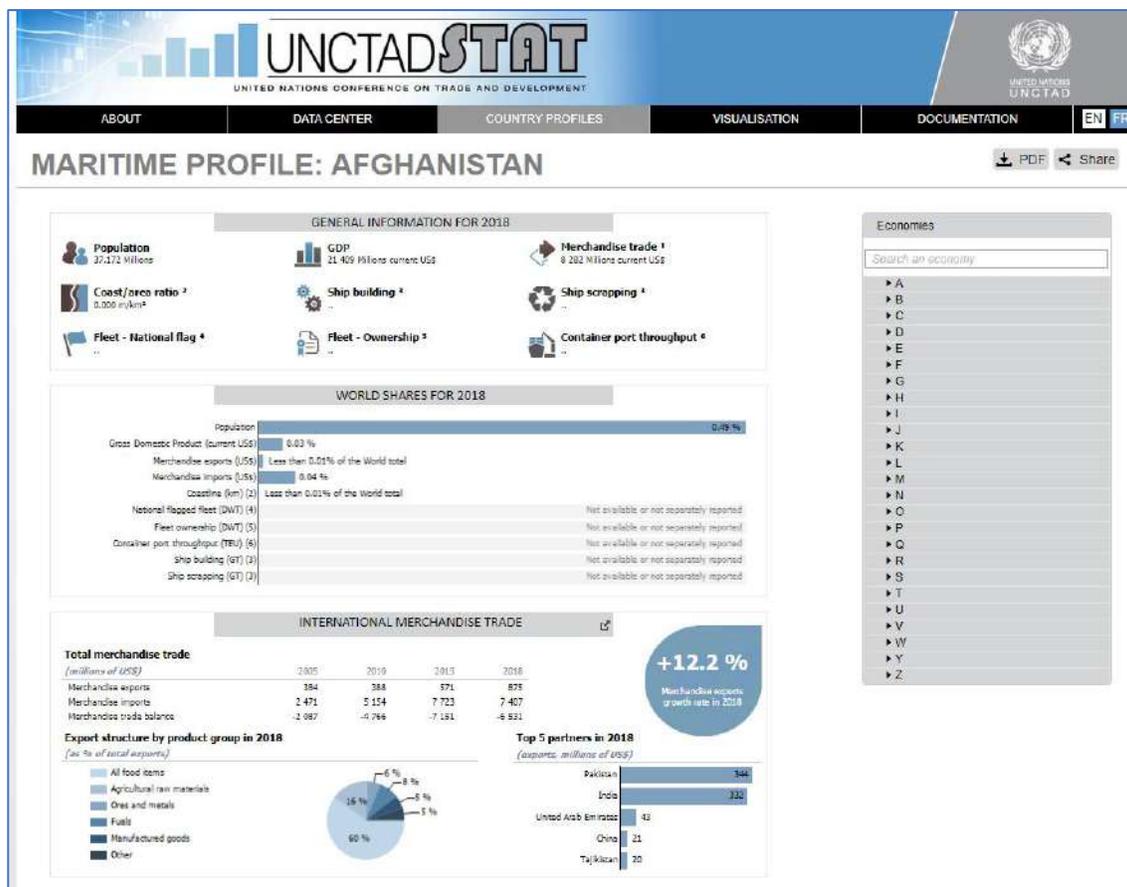
The ICS Shipping Industry Flag State Performance Table brings together data available in the public domain regarding the performance of flag states in terms of, inter alia, Port State Control records, ratification of international Conventions, and IMO meeting attendance.

Website:

<http://www.ics-shipping.org>

Introduction document:

ID: OSU-008  
 Name: UNCTADstat



**Component:** Ocean service use

**Data format:** Excel/ SHP

**Status:** Ongoing (since 1981)

**Acquisition method:** N/A

**Data resolution:** N/A

**Data available:** Maritime transport:  
 World merchant fleetWorld merchant fleet  
 Maritime transport indicatorsMaritime transport indicators  
 World seaborne tradeWorld seaborne trade

**Further information:** All statistics of UNCTAD are harmonized and integrated into UNCTADstat-free to use dissemination platform. It gives access to basic and derived indicators built upon common rules, harmonized environment and clear methodology supported by powerful data browsing system.

The statistical series are regularly updated and classified into easy-to-navigate themes. UNCTADstat offers ready-to-use analytical groupings, with a unique coverage for countries and products and a particular focus on developing and transition economies. This approach ensures data consistency across multiple data series, and enables users to harness its full potential by mixing and matching data from various domains.

**Website:** <https://unctadstat.unctad.org/wds/ReportFolders/reportFolders.aspx>

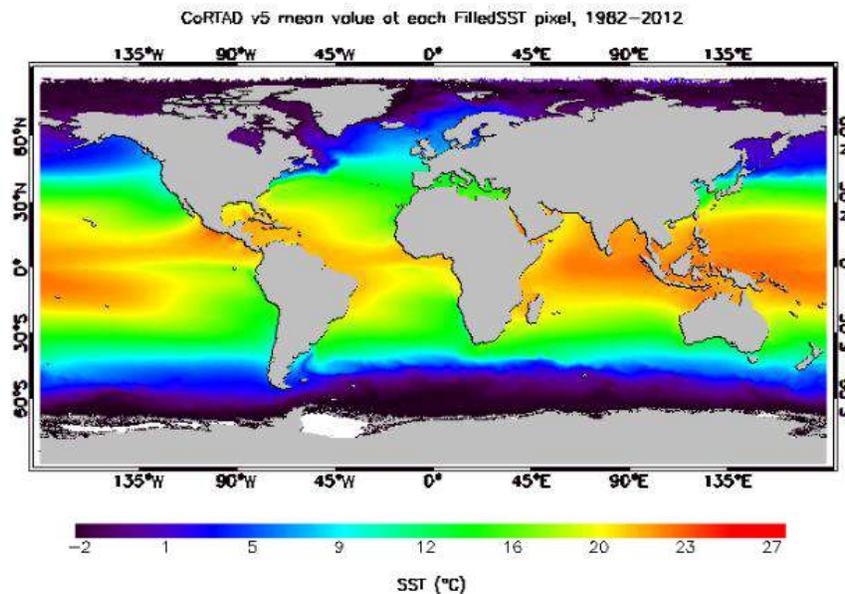
**Introduction document:**

## *Section 7*

# **Multiple components**

**ID:** Mul-001

**Name:** NOAA - Coral Reef Temperature Anomaly Database (CoRTAD)



**Component:** Ocean condition  
Ocean extent

**Data format:** NetCDF

**Status:** Ongoing(since 1989)

**Acquisition method:** Satellite data

**Data resolution:** Version 4/ 5 (approximately 4 km for spatial resolution)

**Data available:** Sea surface temperature, sea surface temperature anomaly, wind speed, sea ice fraction, and thermal stress anomaly

**Further information:** 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.

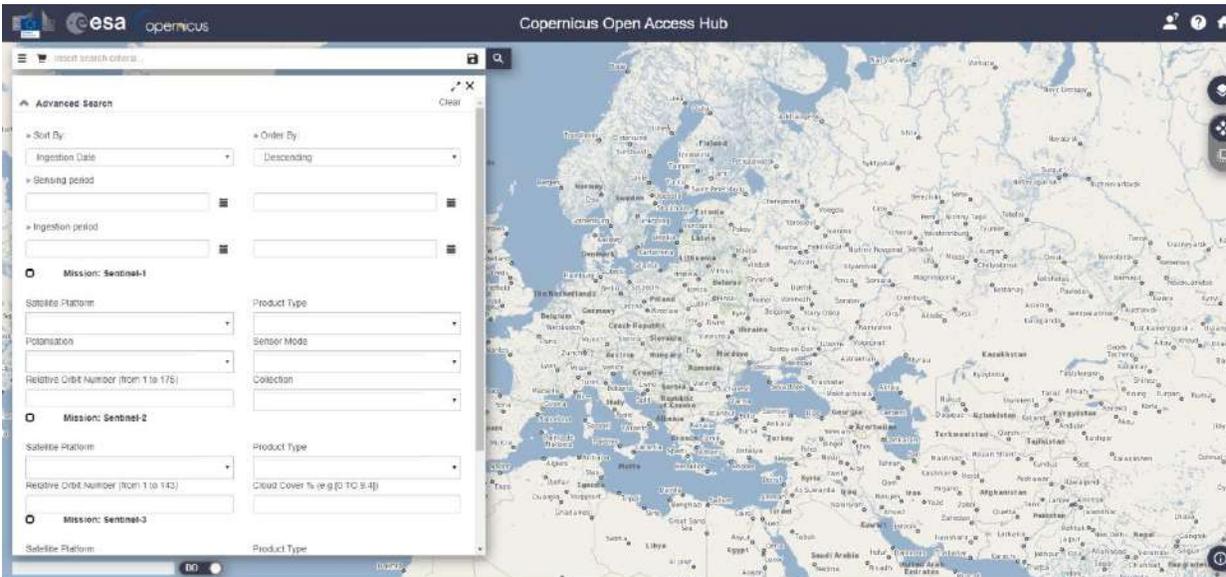
Version 5 - Global, 4 km Sea Surface Temperature and Related Thermal Stress Metrics for 1982-2012

Version 4 - Global, 4 km Sea Surface Temperature and Related Thermal Stress Metrics for 1981-10-31 to 2010-12-31

**Website:** <https://www.nodc.noaa.gov/SatelliteData/Cortad/>

**Introduction document:**

**ID:** Mul-002  
**Name:** Sentinel Online



**Component:** Ocean condition  
Ocean service use

**Data format:** See each dataset

**Status:** Ongoing

**Acquisition method:** Near-Real time data, in situ data, satellite data, model data

**Data resolution:** See each dataset

**Data available:** Sentinel provides 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.

**Further information:**

**Website:**

<https://sentinels.copernicus.eu/web/sentinel/thematic-areas/marine-monitoring>

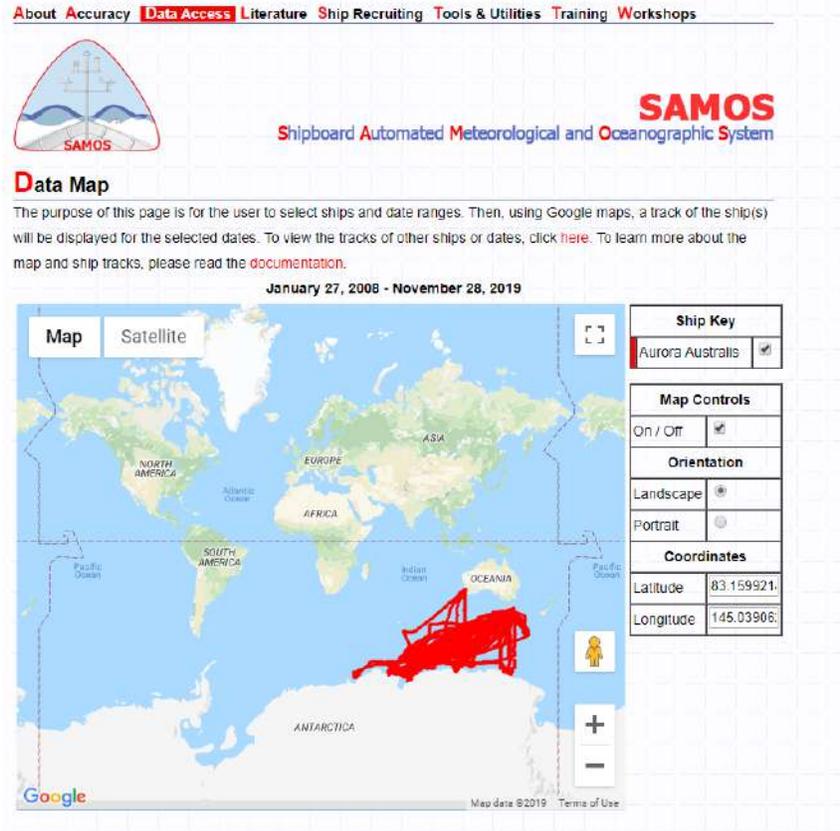
[http://www.esa.int/Our\\_Activities/Observing\\_the\\_Earth/Copernicus/Marine\\_services](http://www.esa.int/Our_Activities/Observing_the_Earth/Copernicus/Marine_services)

Data hub: <https://scihub.copernicus.eu/dhus/#/home>

**Introduction document:**

**ID:** Mul-003

**Name:** Shipboard Automated Meteorological and Oceanographic System (SAMOS)



**Component:** Ocean condition  
Ocean service use

**Data format:** See each dataset

**Status:** Ongoing (since 2005)

**Acquisition method:** In-situ on research vessels (R/Vs)

**Data resolution:** High-temporal sampling rates (typically 1 minute or less)

**Data available:** 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)

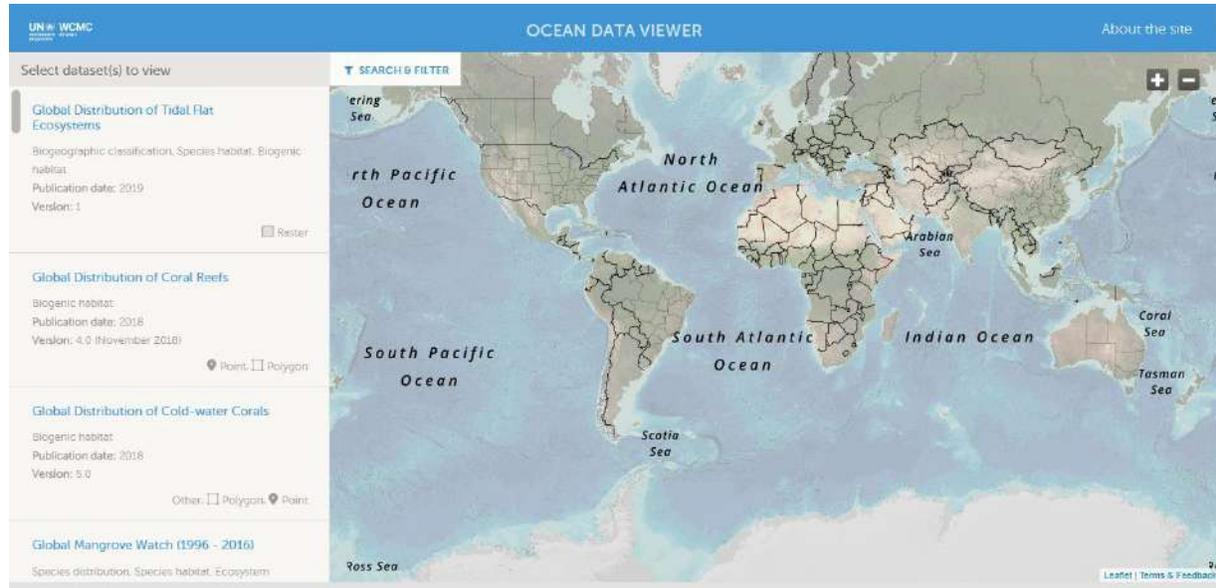
**Further information:**

**Website:** <https://samos.coaps.fsu.edu/html/>

**Introduction document:** [https://samos.coaps.fsu.edu/html/docs/NOAA-TM\\_OAR\\_PSD-311.pdf](https://samos.coaps.fsu.edu/html/docs/NOAA-TM_OAR_PSD-311.pdf)



**ID:** Mul-005  
**Name:** UN - WCMC Ocean data viewer



**Component:** Spatial units  
Ocean extend  
Ocean asset  
Ocean service use

**Data format:** SHP

**Status:** Ongoing

**Acquisition method:** See each dataset

**Data resolution:** See each dataset

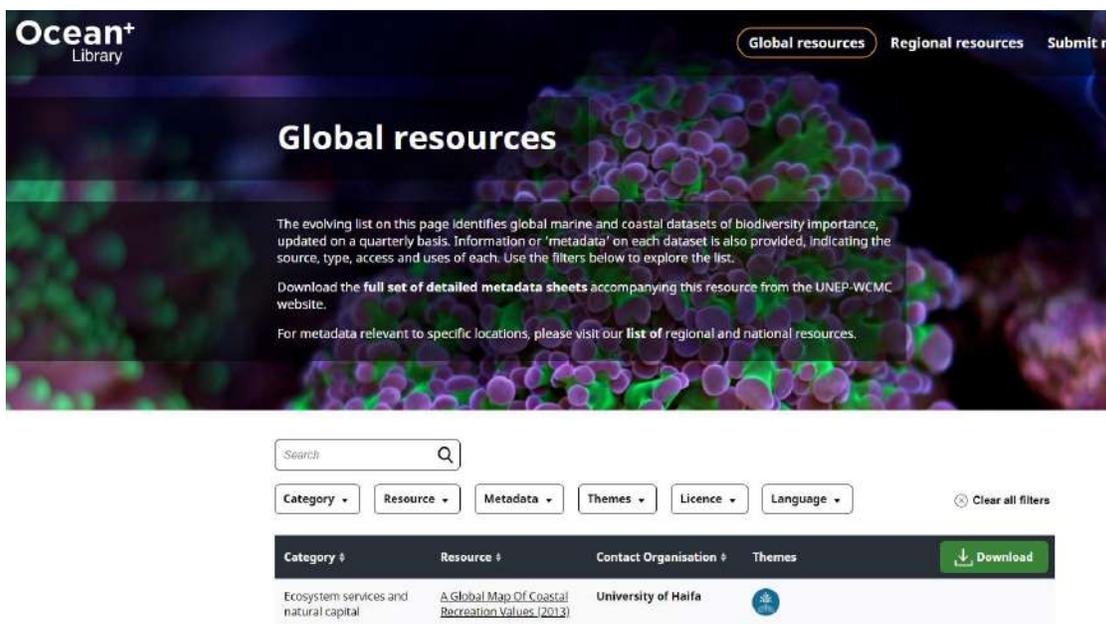
**Data available:** This database provides data on corals, seagrasses, saltmarshes, protected areas, chlorophyll-a, shannon's biodiversity index, mangrove, whales, dolphins, seamounts, sea turtles, dive centers and EEZ

**Further information:** It Includes over 30 distribution map datasets of many species

**Website:** <http://data.unep-wcmc.org/>

**Introduction document:** [https://www.unep-wcmc.org/system/dataset\\_file\\_fields/files/000/000/488/original/Atlas\\_Manual.pdf?1517488900](https://www.unep-wcmc.org/system/dataset_file_fields/files/000/000/488/original/Atlas_Manual.pdf?1517488900)

**ID:** Mul-006  
**Name:** WCMC - Ocean+ Library



**Component:** Spatial units  
Ocean extend  
Ocean asset  
Ocean service use

**Data format:** See each dataset

**Status:** Ongoing

**Acquisition method:** See each dataset

**Data resolution:** See each dataset

**Data available:** It is 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 planning, education, environmental impact assessment, ecosystem assessment, ecosystem services and natural capital

**Further information:**

**Website:** <https://library.oceanplus.org/>

**Introduction document:** [https://www.unep-wcmc.org/system/dataset\\_file\\_fields/files/000/000/341/original/McDer-mott\\_Long\\_et\\_al\\_-\\_OceanPlus\\_Library\\_-\\_8\\_Mar\\_2019.pdf?1552301984#page=27](https://www.unep-wcmc.org/system/dataset_file_fields/files/000/000/341/original/McDer-mott_Long_et_al_-_OceanPlus_Library_-_8_Mar_2019.pdf?1552301984#page=27)

ID:

Mul-007

Name:

FAO - Global fishery databases

The screenshot shows the FishstatJ software interface with a data table titled "Global capture production - Quantity (1950 - 2016)". The table lists various fish species from Albania and their capture quantities in thousands of metric tons (1000 F) for the years 2008 through 2015. The species listed include Freshwater fishes, Angelsharks, Atlantic bluefin tuna, Atlantic bonito, Barracudas, Bighead carp, Bleak, Blue and red shrimp, Blue whiting, Bluefish, Bogue, Caramote prawn, Catsharks, Common carp, Common cuttlefish, Common dace, Common dentex, Common octopus, Common sole, Common spiny lobster, Common squids, and Croakers.

Country (Country)	Species (ASFIS spe...)	2008	2009	2010	2011	2012	2013	2014	2015
Afghanistan	Freshwater fishes ...	1000 F							
Albania	Angelsharks, sand...	23	14	78	12	5	5	4	4
Albania	Atlantic bluefin tu...	-	50	-	0	-	9	34	40
Albania	Atlantic bonito	27	21	23	12	5	4	3	27
Albania	Barracudas nei	...	...	7	...	...	...	...	...
Albania	Bighead carp	24	5	...	23	12	13	10	16
Albania	Bleak	190	530	505	360	195	200	210	80
Albania	Blue and red shrimp	...	...	...	...	...	...	...	...
Albania	Blue whiting(=Po...	-	-	-	-	-	-	-	-
Albania	Bluefish	-	-	-	-	-	-	-	-
Albania	Bogue	132	154	80	88	55	50	78	90
Albania	Caramote prawn	23	20	228	9	19	24	33	22
Albania	Catsharks, nurseh...	...	...	...	...	...	...	...	...
Albania	Common carp	371	214	335 F	450	398	418	434	480
Albania	Common cuttlefish	62	126	98	90	80	85	75	82
Albania	Common dace	8	4	...	4	4	5	5	5
Albania	Common dentex	32	43	25	22	14	13	11	15
Albania	Common octopus	82	109	47	113	165	170	173	124
Albania	Common sole	63	69	120	68	79	62	44	71
Albania	Common spiny lo...	3	1	...	2	...	...	...	...
Albania	Common squids ...	107	60	64	52	76	92	105	134
Albania	Croakers, drums ne	2	8	1	2	4	3	5	4
Albania	Croaker	380	208	235 F	230	90	90	110	164

Component:

Ocean asset  
Ocean service supply

Data format:

CSV

Status:

Ongoing

Acquisition method:

Statistical data  
GIS layers

Data resolution:

N/A

Data available:

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/collections/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

**Further information:**

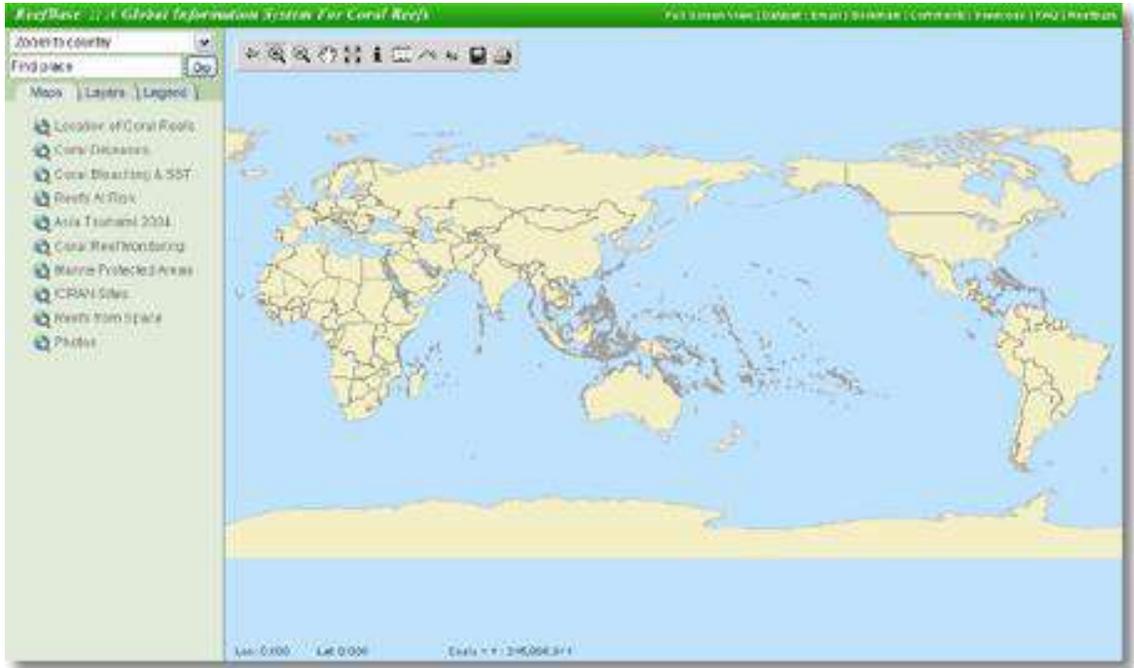
Global fishery databases has its own software to explore data: **FishStatJ**.  
 Introduction: <http://www.fao.org/fishery/statistics/software/fishstatj/en>  
 Manual: [http://www.fao.org/fishery/static/FishStatJ/FishStatJ\\_3.05.1-Manual.pdf](http://www.fao.org/fishery/static/FishStatJ/FishStatJ_3.05.1-Manual.pdf)

**Website:**

<http://www.fao.org/fishery/topic/16054/en>

**Introduction document:**

**ID:** Mul-008  
**Name:** WorldFish - ReefBase



**Component:** Ocean extent  
Ocean assets

**Data format:** CSV/ RTF/ PDF

**Status:** Uncertain

**Acquisition method:** Country-level data

**Data resolution:** N/A

**Data available:** 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 biodiversity.
- **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.

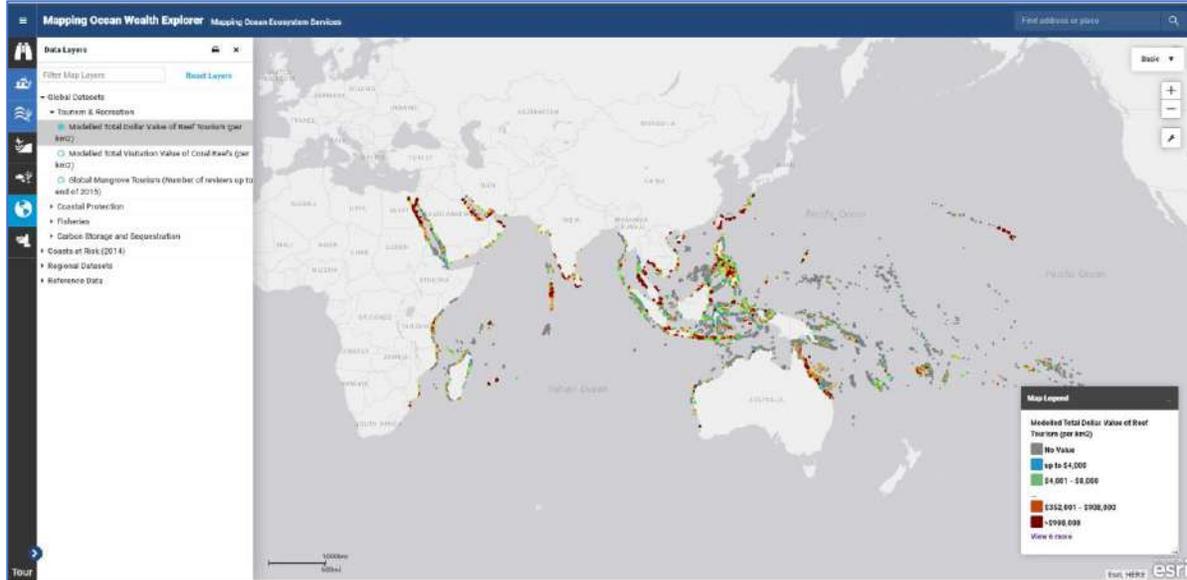
**Further information:** ReefBase is the official database of the Global Coral Reef Monitoring Network (GCRMN), as well as the International Coral Reef Action Network (ICRAN).

**Website:** <http://www.reefbase.org/main.aspx>

**Introduction document:**

**ID:** Mul-009

**Name:** The Nature Conservancy - Atlas of Ocean Wealth



- Component:** Ocean condition  
Ocean service supply
- Data format:** Online Map application
- Status:** Ongoing (since 2014)
- Acquisition method:** Field data, modelling data and expert knowledge
- Data resolution:** High resolution
- Data available:** Recreation and tourism, natural coastal protection, blue carbon, fisheries
- Further information:** It is a collection of data of tourism, mangroves, coral reef and fishing. The map explorer also shows 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.
- Website:** <http://oceanwealth.org/resources/atlas-of-ocean-wealth/>
- Introduction document:** [https://oceanwealth.org/wp-content/uploads/2016/07/Atlas\\_of\\_Ocean\\_Wealth.pdf](https://oceanwealth.org/wp-content/uploads/2016/07/Atlas_of_Ocean_Wealth.pdf)

**ID:** Mul-010  
**Name:** NOAA - One Stop



**Component:** Ocean condition  
Ocean asset  
Ocean extent

**Data format:** See each dataset (at least includes NetCDF)

**Status:** Ongoing

**Acquisition method:** See each dataset

**Data resolution:** See each dataset

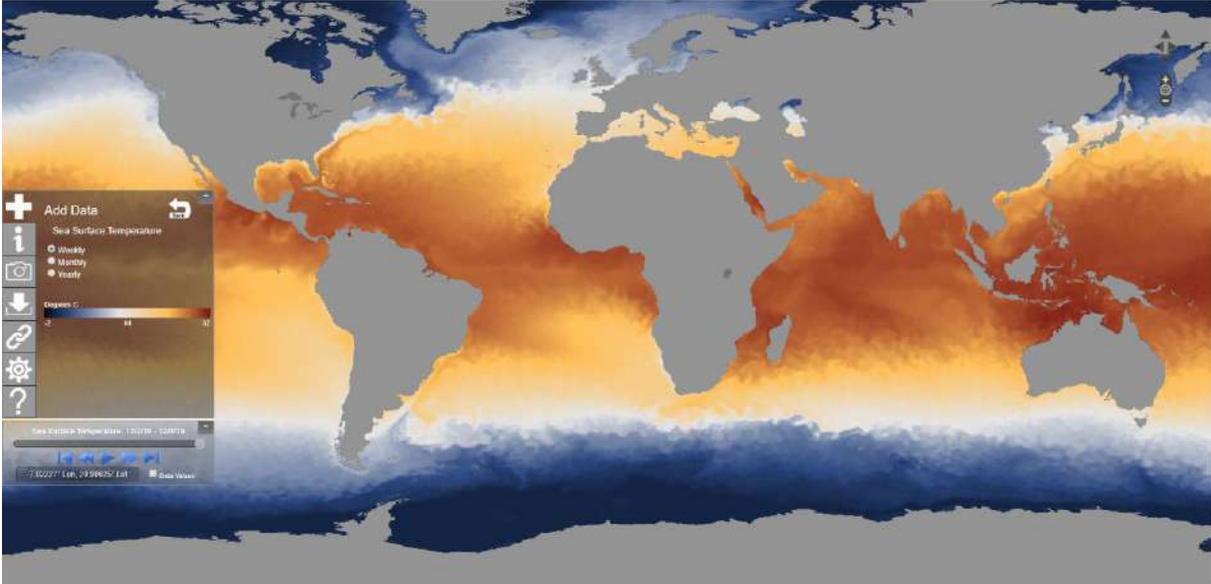
**Data available:** It is a new version search engine of all NOAA datasets, including geophysical, oceans, coastal, weather and climate data

**Further information:**

**Website:** <https://data.noaa.gov/onestop/#/>

**Introduction document:**

**ID:** Mul-011  
**Name:** NOAA - Global Data Explorer



**Component:** Ocean condition  
Ocean extent

**Data format:** Map/ Google Earth file

**Status:** Ongoing

**Acquisition method:** See each dataset

**Data resolution:** See each dataset

**Data available:** This database provides data on the ocean, atmosphere, land, cryosphere, climate, and weather.  
Ocean data include:  
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

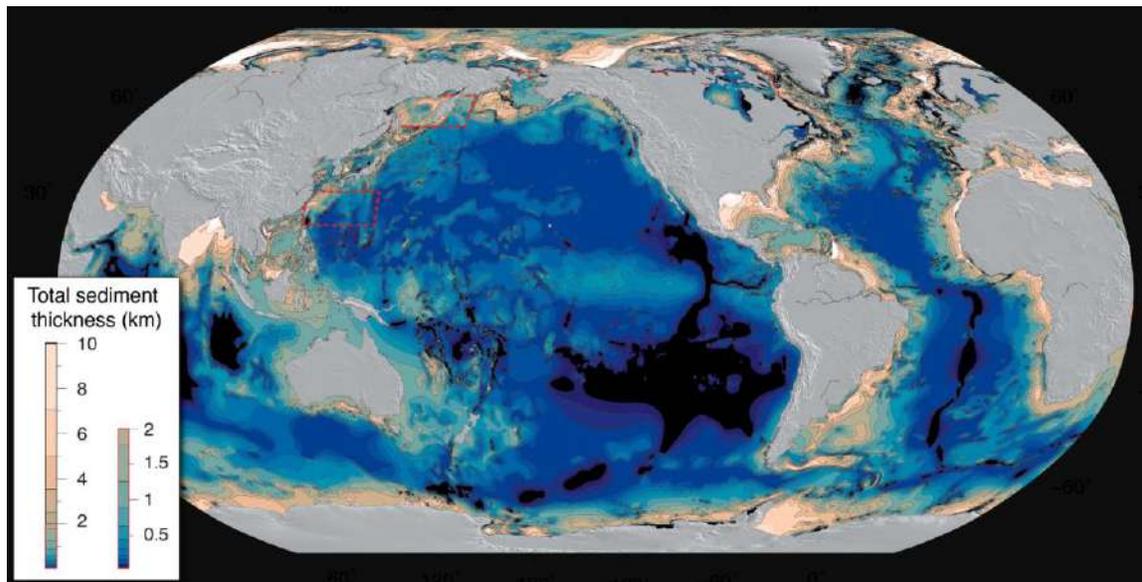
**Further information:** Ocean component of this site includes data on temperature, chemical, biological, and physical properties

**Website:** <https://www.nnvl.noaa.gov/view/globaldata.html>

**Introduction document:**

**ID:** Mul-012

**Name:** NOAA - Marine Geology and Geophysics



**Component:** Ocean extent  
Ocean service supply  
Ocean asset

**Data format:** See each dataset ( at least includes MGD77T Exchange/ MAG88T Exchange/ Map/ NetCDF)

**Status:** Ongoing

**Acquisition method:** See each dataset

**Data resolution:** See each dataset

**Data available:**

- 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)

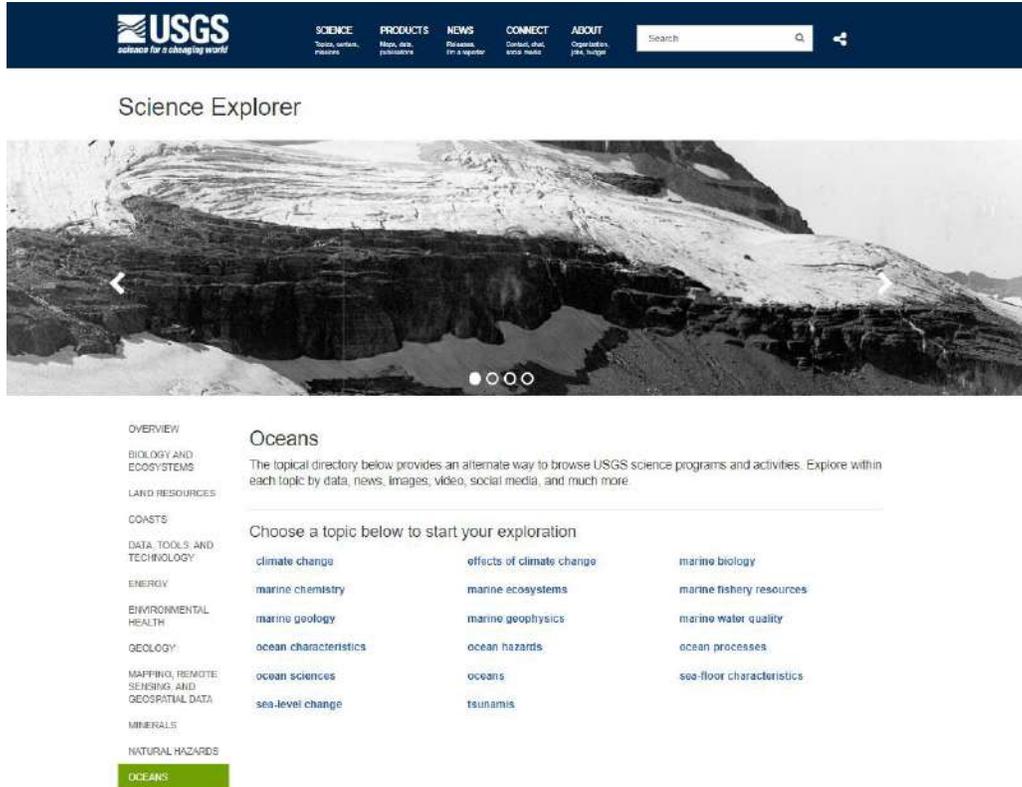
**Further information:**

**Website:** <https://www.ngdc.noaa.gov/mgg/mggd.html>

**Introduction document:**

**ID:** Mul-013

**Name:** The United States Geological Survey (USGS)



**Component:** Spatial units  
Ocean extent  
Ocean service supply

**Data format:** See each dataset

**Status:** Ongoing

**Acquisition method:** See each dataset

**Data resolution:** See each dataset

**Data available:** 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, and tsunamis

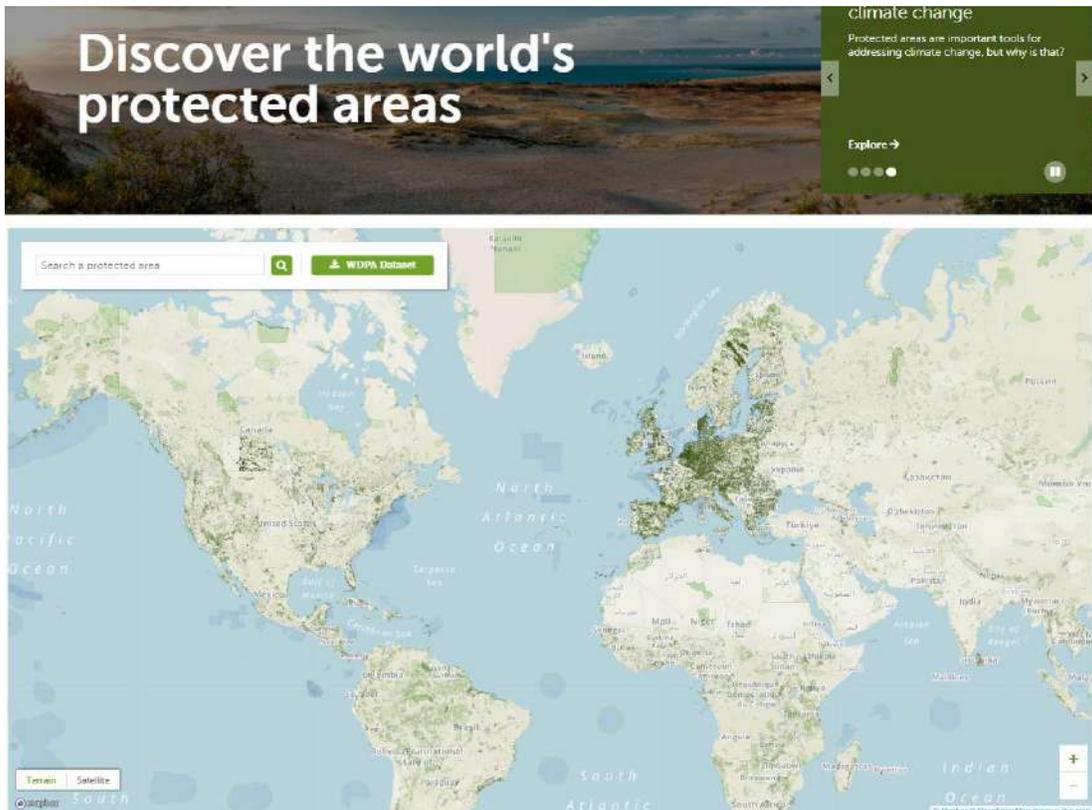
**Further information:** It is a comprehensive database with a special part of oceans

**Website:** <https://www.usgs.gov/science/science-explorer/Oceans>

**Introduction document:**

**ID:** Mul-014

**Name:** IUCN & UNEP-WCMC - Protect Planet Ocean



**Component:** Ocean extent  
Use (designated)

**Data format:** See each dataset

**Status:** Ongoing

**Acquisition method:** See each dataset

**Data resolution:** See each dataset

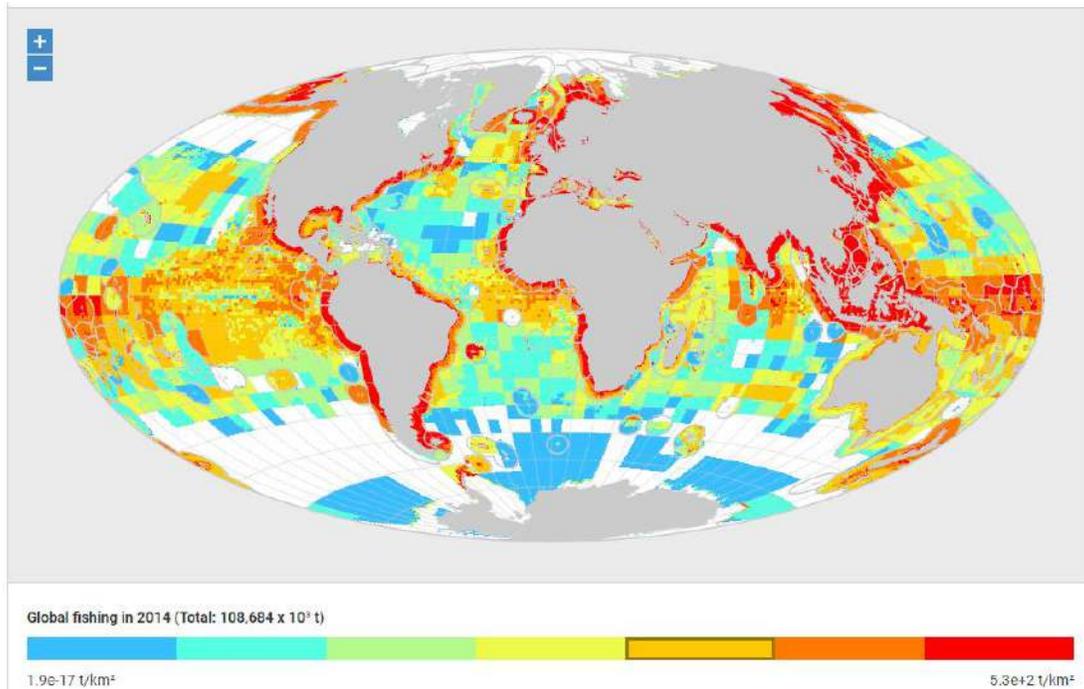
**Data available:** Marine Protected Areas, Marine Reserves, and Marine World Heritage Sites

**Further information:** 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).

**Website:** <http://www.protectplanetoocean.org/>

**Introduction document:**

**ID:** Mul-015  
**Name:** Sea Around Us



**Component:** Ocean service supply  
Ocean extent

**Data format:** GeoTIF/CSV

**Status:** Ongoing (since 1999)

**Acquisition method:** Official reported data and estimated data

**Data resolution:** See each dataset

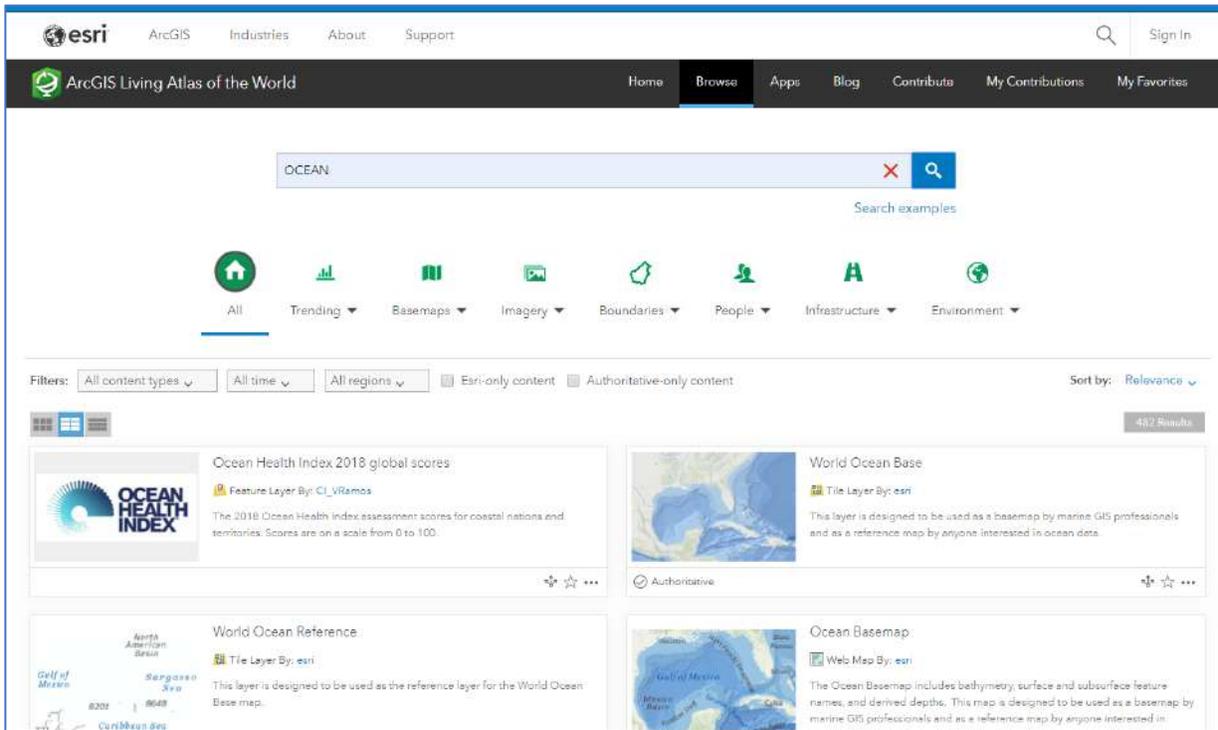
**Data available:** Fisheries and fisheries-related data at spatial scales that have ecological and policy relevance, such as by Exclusive Economic Zones, High Seas, Large Marine Ecosystems and other spatial scales.

**Further information:** 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.

**Website:** <http://www.seaaroundus.org/>

**Introduction document:**

**ID:** Mul-016  
**Name:** ESRI Living Atlas



**Component:** Ocean extent  
Ocean condition

**Data format:** SHP

**Status:** Ongoing

**Acquisition method:** N/A

**Data resolution:** N/A

**Data available:** 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.

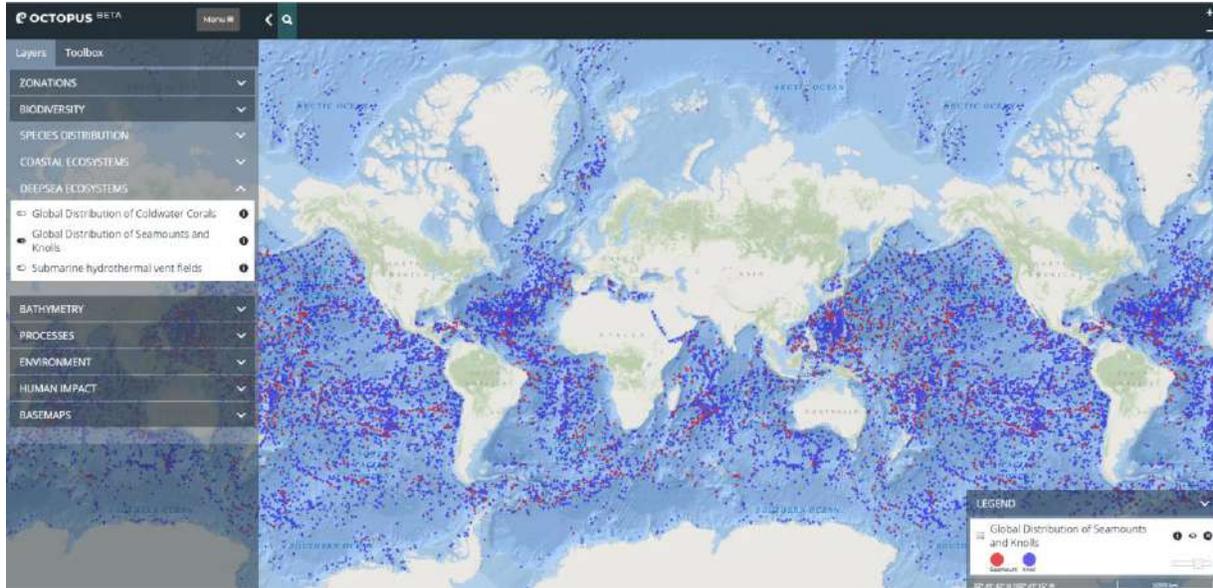
**Further information:**

**Website:** <https://livingatlas.arcSHP.com/en/>

**Introduction document:**

**ID:** Mul-017

**Name:** Oxford - Ocean Tool for Public Understanding and Science (OcToPUS)



**Component:** Ocean extent  
Ocean condition  
Ocean service use

**Data format:** See each dataset (at least including PNG/ GeoTIFF/ NetCDF)

**Status:** Ongoing

**Acquisition method:** See each dataset

**Data resolution:** A resampled spatial resolution of 0.09 degrees (approximately 10km), at various temporal resolutions (1 month, 1 year, 10 years, 50 years)

**Data available:**

- Zonations: Exclusive economic zones (EEZ), oceans and seas, Marine protected areas (MPA), Marine ecoregions of the world
- Biodiversity: species distribution, coastal ecosystems, and 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

**Further information:**

This portal includes 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

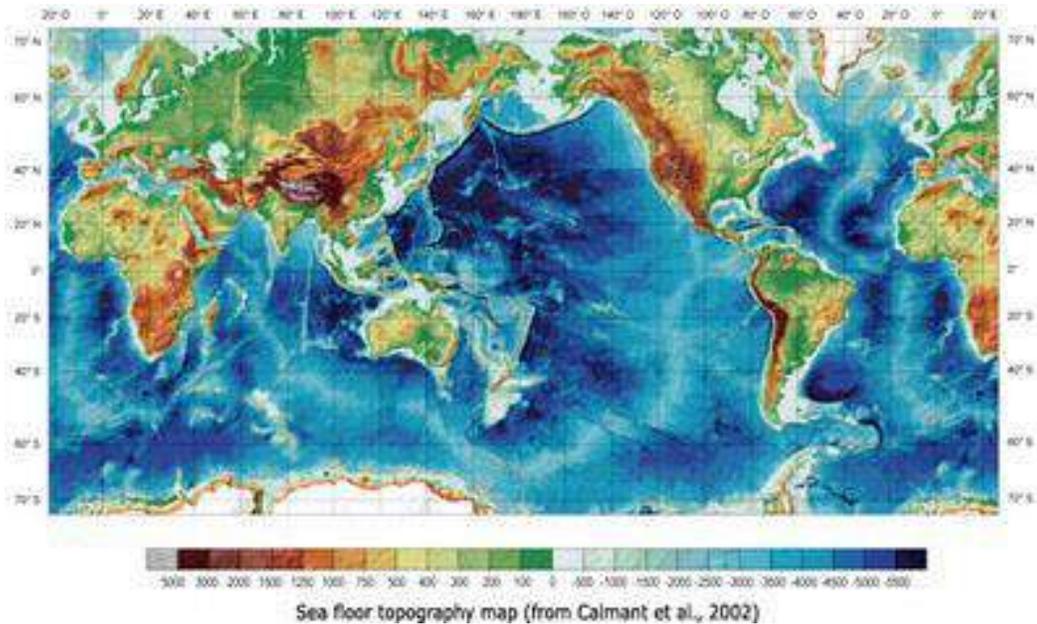
**Website:**

<https://octopus.zoo.ox.ac.uk/beta>

**Introduction document:**

**ID:** Mul-018

**Name:** LEGOS - Doppler Orbitography and Radiopositioning Integrated by Satellite (DORIS)



**Component:** Ocean condition  
Ocean extent

**Data format:** See each dataset (at least includes NetCDF)

**Status:** Ongoing (since early 1990s)

**Acquisition method:** Satellite data (altimetric measurements)

**Data resolution:** High resolution

**Data available:** sea level variations and seafloor tectonic structures

**Further information:** Seafloor topography by altimetry (high-resolution altimetry data of the ERS-1 mission led to the production of a global bathymetric map)

**Website:** <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>

**Introduction document:**

ID:

Mul-019

Name:

The International Council for the Exploration of the Sea (ICES)

ICES data portal

THEMATIC

- › All data
- › Acoustic trawl surveys
- › Biodiversity
- › DATRAS
- › DOME (Marine Environment)
- › Eggs and larvae
- › Fish stomach
- › Historical plankton
- › Oceanography
- › SmartDots
- › Underwater Noise
- › Vulnerable Marine Ecosystems

LOGIN REQUIRED

Thematic data portals

Datasets are organized around specific thematic data portals. The ICES data portal gathers all the content for you if you are not sure which specific thematic portal you require.

**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

Print it Send to f t in Share it

MAKE A DATA REQUEST

LINKS

Other information

- › ISO 19139 Metadata
- › ICES data policy

Component:

Ocean condition  
Ocean asset  
Ocean service supply

Data format:

See each dataset (at least include CSV/ SHP/ ASCII/ Map)

Status:

Ongoing (since 1902)

Acquisition method:

See each dataset (at least includes in situ data(survey), historical data)

Data resolution:

See each dataset

Data available:

- 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(VME) hosts data on deep-water VMEs in the North Atlantic.

**Further information:**

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.

**Website:**

<https://ices.dk/marine-data/data-portals/pages/default.aspx>

**Introduction document:**

ID:

Mul-020

Name:

US National Center for Atmospheric Research/research data archive (NCAR/RDA )



Component:

Ocean extent  
Ocean condition

Data format:

ASCII/ Binary/ NetCDF

Status:

Ongoing

Acquisition method:

See each dataset

Data resolution:

See each dataset

Data available:

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.

Further information:

This portal has a rank of monthly/ yearly most Popular Datasets and Usage Statistics and the function of comparing 2 datasets.

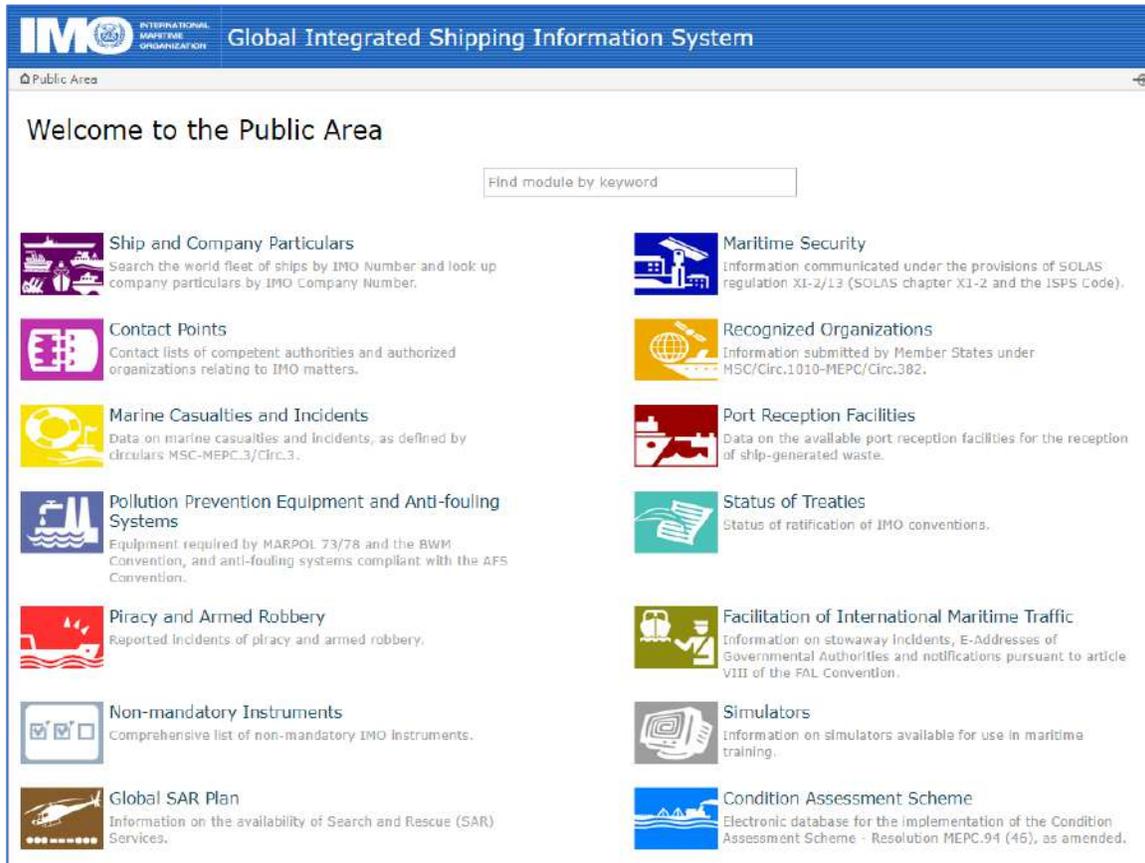
Website:

https://rda.ucar.edu/

Introduction document:

**ID:** Mul-021

**Name:** IMO - Global Integrated Shipping Information System



**Component:** Ocean service use  
Use (designated)

**Data format:** Description

**Status:** Ongoing

**Acquisition method:** N/A

**Data resolution:** N/A

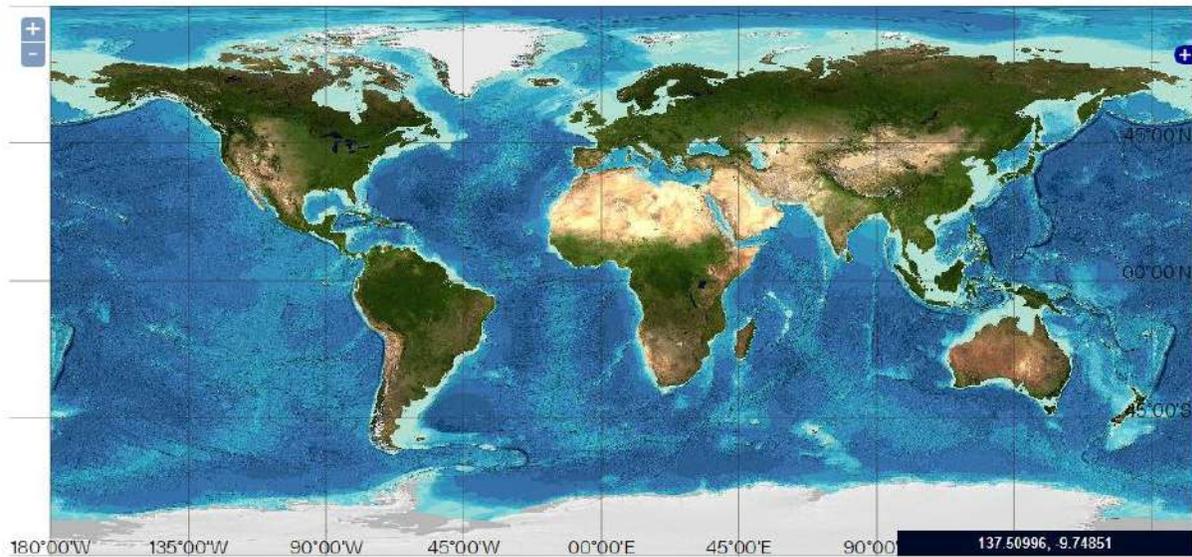
**Data available:** Shipping, marine safety, and ports

**Further information:** It requires registration to explore the data information.

**Website:** <https://gisis.imo.org/Public/Default.aspx>

**Introduction document:**

**ID:** Mul-022  
**Name:** British Oceanographic Data Centre (BODC)



**Component:** Ocean extent  
Ocean condition

**Data format:** NetCDF/ ASCII/ Ocean Data View (ODV)

**Status:** Ongoing (since 1975)

**Acquisition method:** See each dataset

**Data resolution:** See each dataset

**Data available:**

- International sea level (high frequency delayed-mode data): [https://www.bodc.ac.uk/data/hosted\\_data\\_systems/sea\\_level/international/](https://www.bodc.ac.uk/data/hosted_data_systems/sea_level/international/)
- GEBCO gridded bathymetry data (see more details in this inventory)

**Further information:**

**Website:** <https://www.bodc.ac.uk/about/#>

**Introduction document:**

**ID:** Mul-023

**Name:** Rolling Deck to Repository (R2R) Data Repository



[SEARCH CRUISES](#) [DATA TYPES & PRODUCTS](#) [COMMUNITY](#) [ABOUT R2R](#)

## R2R Data Types & Products

[Home](#) / [Data Types & Products](#)

Instrument	Description
<a href="#">ADCP</a>	(acoustic doppler current profiler) sonar measures water current velocities
<a href="#">Anemometer</a>	measures wind speed and direction
<a href="#">Barometer</a>	measures atmospheric pressure
<a href="#">CTD</a>	integrated hydro system measures conductivity, temp, pressure, etc.
<a href="#">Expendable Probe</a>	hand/deck-launched single-use depth probes - XBT, XCTD, XSV, XCP, etc.
<a href="#">Flowmeter</a>	measures rate of water flow - mechanical, optical, electromagnetic, etc.
<a href="#">Fluorometer</a>	measures fluorescence (usually for phytoplankton)
<a href="#">GNSS</a>	(global navigation satellite system) - GPS/WAAS, GLONASS, Galileo, etc.
<a href="#">Gravimeter</a>	measures the Earth's local gravitational field
<a href="#">Gyrocompass</a>	compass with a motorized gyroscope that tracks true north (heading)
<a href="#">HDSS</a>	(hydrographic doppler sonar system) sonar measures water current velocities

**Component:** Ocean extent  
Ocean condition

**Data format:** N/A

**Status:** Ongoing

**Acquisition method:** 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.

**Data resolution:** See each dataset

**Data available:** R2R provides geophysical trackline profiles (underway gravity, magnetics, bathymetry, etc) for vessels equipped with these instrument types; and Hydrographic profiles (depth, temperature, salinity, etc from CTD).

**Further information:** 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.

**Website:** <https://www.rvdata.us/data>

**Introduction document:**

**ID:** Mul-024  
**Name:** World Register of Marine Species (WORMS)

The screenshot shows the WORMS website's search interface. At the top, there is a navigation bar with the WORMS logo and various menu items. Below this is a search bar and a secondary navigation bar with icons for different sections. The main part of the image is a search filter form with several sections: 'Geocunit' with a text input and a dropdown; 'Type' with radio buttons for 'typelocality', 'vagrant', and 'specimen'; 'Rank' with two dropdown menus; 'Limit to' with a text input and checkboxes for 'extant only' and 'marine taxa'; 'Introduction' with dropdowns for 'Origin', 'Invasiveness', and 'Occurrence'; 'Distribution status to include' with radio buttons for 'Valid', 'Valid or doubtful', 'All records', and 'Inaccurate'; and 'Synonyms' with radio buttons for 'Sort on synonyms, list valid names', 'Sort on accepted names, list synonyms', and 'Only accepted names'. A 'Search' button is at the bottom left of the filter section.

**Component:** Ocean asset  
Ocean service use

**Data format:** Aphia structure (10 modules: taxonomy, distribution, traits, specimen information, vernacular names, notes, links, images, identification keys and sources)

**Status:** Ongoing

**Acquisition method:** Lists of information

**Data resolution:** N/A

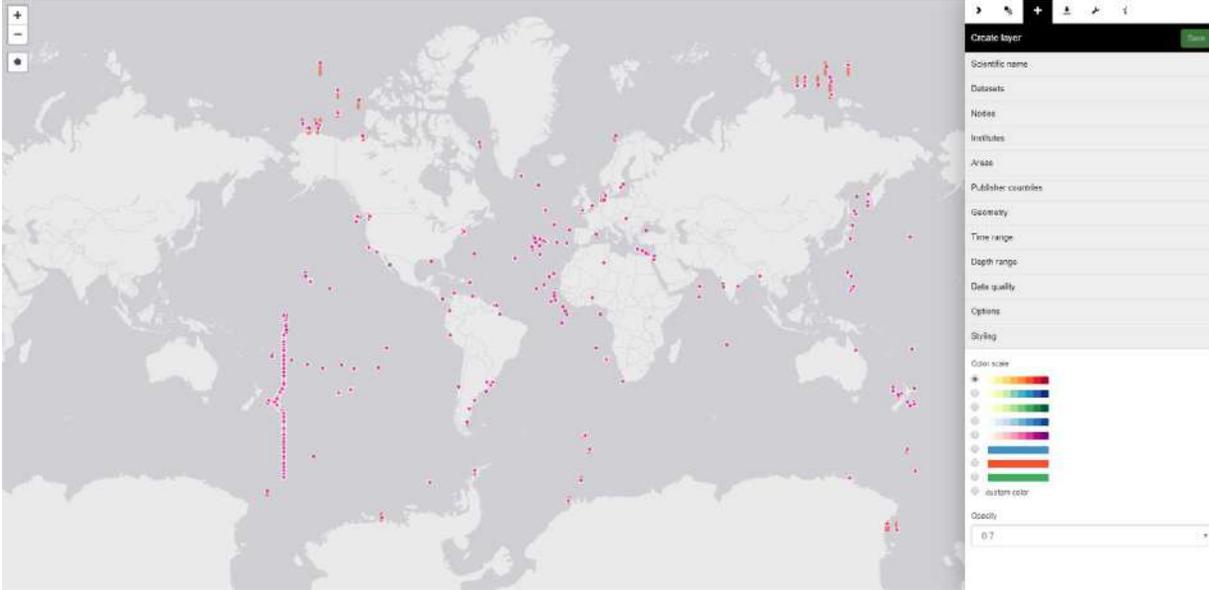
**Data available:** It provides an authoritative and comprehensive list of names of marine organisms, including information (e.g. habitat and species distribution).

**Further information:**

**Website:** <http://marinespecies.org/aphia.php?p=checklist>

**Introduction document:** <http://marinespecies.org/aphia.php?p=manual>

**ID:** Mul-025  
**Name:** Ocean Biogeographic Information System (OBIS)



**Component:** Ocean condition  
Ocean asset

**Data format:** Online Map/ OBIS-ENV-DATA format

**Status:** Ongoing

**Acquisition method:** N/A

**Data resolution:** N/A

**Data available:** 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.

**Further information:** OBIS is a global open-access data and information clearing-house on marine biodiversity for science, conservation and sustainable development.

**Website:** <http://www.iobis.org/data/>

**Introduction document:** <https://obis.org/manual/>

ID:

Mul-026

Name:

NASA - Physical Oceanography Distributed Active Archive Center (PODAAC)



Component:

Ocean extend  
Ocean condition

Data format:

NetCDF

Status:

Ongoing

Acquisition method:

Satellite data

Data resolution:

See each dataset

Data available:

PODAAC provides data on 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, and surface water

Further information:

Website:

<https://podaac.jpl.nasa.gov/datasetlist>

Introduction document:

ID:

Mul-027

Name:

International Seabed Authority Maps

**INTERNATIONAL SEABED AUTHORITY**

English | Français | Español

HOME THE AUTHORITY MINERALS LEGAL INSTRUMENTS **CONTRACTORS** ACTIVITIES TRAINING NEWS SESSIONS DOCUMENTS BBNJ

### MAPS

Clicking any of the map image links below open a drop down snapshot of each individual map. Clicking the drop down image will open the map to its full size which can be downloaded by a right click/save as option.

Shapefiles of the maps are grouped by minerals - polymetallic nodules (PMN), polymetallic sulphides (PMS) and cobalt-rich ferromanganese crusts (CFC) and can be downloaded as zipfiles from the links below:

- [PMN Exploration Areas](#)
- [PMS Exploration Areas](#)
- [CFC Exploration Areas](#)
- [PMN Reserved Areas](#)
- [CFC Reserved Areas](#)
- [APEI Areas](#)
- [Copyright](#)

#### The Area

The maps below have been separated into eight sections beginning with the Area maps which show the complete list of contractors. The individual contractor maps are also listed below, by mineral and the relevant ocean.

- Clarion Clipperton Fracture Zone
- Indian Ocean
- Mid Atlantic Ridge
- Pacific Ocean
- South Atlantic Ocean

**Contractors**

- Polymetallic Nodules
- Polymetallic Sulphides
- Cobalt-Rich Ferromanganese
- Exploration Areas
- Environmental Impact Assessments
- Reserved Areas
- Environmental Management Plan (EMP)
- Reporting Templates
- Maps

**Component:**

Use (designated)  
Ocean asset

**Data format:**

SHP

**Status:**

Ongoing

**Acquisition method:**

N/A

**Data resolution:**

N/A

**Data available:**

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.

**Further information:**

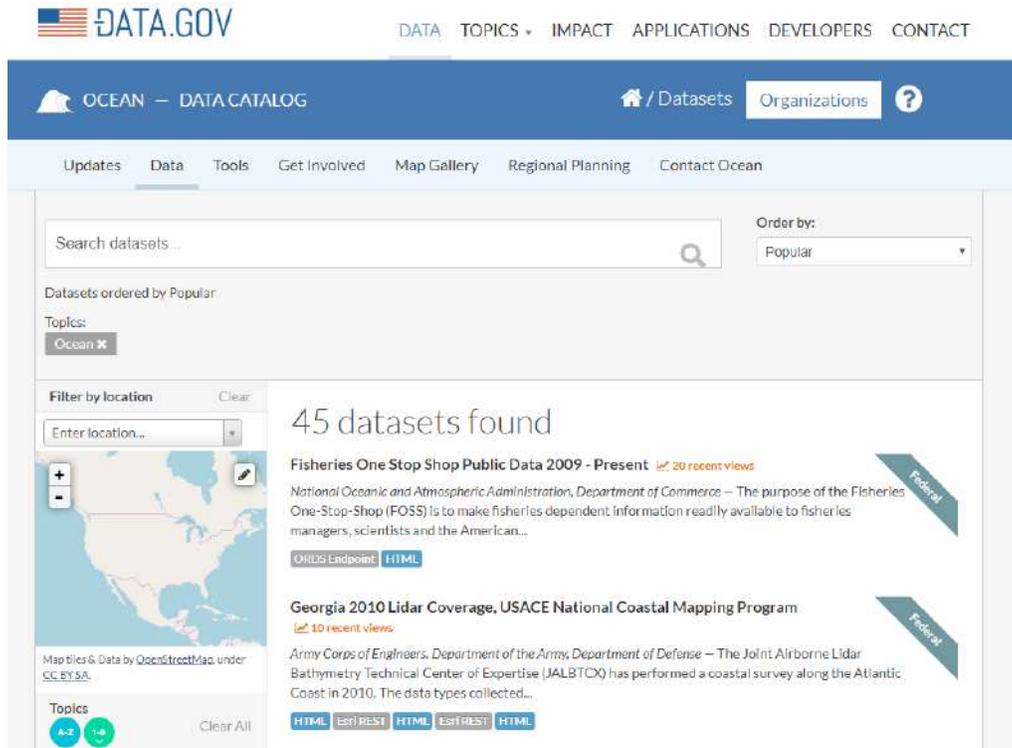
**Website:**

<https://www.isa.org.jm/maps>

**Introduction document:**

**ID:** Mul-028

**Name:** DATO.GOV - OCEAN DATA CATALOG



**Component:** Ocean extent  
Ocean condition  
Ocean service use

**Data format:** See each dataset

**Status:** Ongoing

**Acquisition method:** See each dataset

**Data resolution:** See each dataset

**Data available:** The home of the U.S. Government's open data. Most data in this site are limited to US but some are global.

**Further information:**

**Website:** [https://catalog.data.gov/dataset?groups=ocean9585#topic=ocean\\_navigation](https://catalog.data.gov/dataset?groups=ocean9585#topic=ocean_navigation)

Map gallery: <https://www.geoplatform.gov/>

**Introduction document:**

## *Section 8*

# **Non-specific classification**

ID:

Non-001

Name:

Long Term Ecological Research (LTER) Network Data Portal

The screenshot shows the IODE website interface. At the top, there are logos for UNESCO and IODE (Intergovernmental Oceanographic Commission of UNESCO International Oceanographic Data and Information Exchange). A navigation menu on the left includes 'General Information' (Home, About IODE, IODE 50th anniversary, Project Office 10th ann., Data Management, Info Management, IODE Gallery) and 'Expert Information' (Data/Info Sources, IODIScat, IODE Network structure, Data global/regional, Best Practices, Standards, Country Participation, IODE Management, Activities, News, IODE Awards, History, How to..., Jobs, Contact Us, IODE Work Plan, Policy/Strategy/Partners, Training/Education, IODE Calendar, Research Cruises, Find IODE People, Documents/Publications). A 'Member Login' button is also visible.

The main content area is titled 'Global and Regional Data Sources' and includes the text: 'Having free and unrestricted access to oceanographic data is what IODE is all about. On this page you will find links to main ocean data sources developed and maintained by IODE National Oceanographic Data Centres. This list was started on 20 November 2009 and will be gradually expanded.'

Below this text are two numbered sections: '1. GLOBAL DATA SOURCES' and '2. REGIONAL DATA SOURCES'. A 'Last update: 26 September 2017' note is present.

A table is displayed with the following structure:

Name	Description	Link to web page
<b>GLOBAL DATA SOURCES</b>		
Argo floats	The broad-scale global array of temperature/salinity profiling floats, known as Argo, has already grown to be a major component of the ocean observing system. Argo is a standard to which other developing ocean observing systems can look to. For example, Argo offers ideas on various topics such as how to collaborate internationally, how to develop a data management system and how to change the way scientists think about collecting data. Deployments began in 2000 and continue today at the rate of about 800 per year.	LINK data link

Component:

Non-specific classification

Data format:

See each dataset

Status:

Ongoing

Acquisition method:

See each dataset

Data resolution:

See each dataset

Data available:

Long-term ecological research sites

Further information:

Website:

[https://www.iode.org/index.php?option=com\\_content&view=article&id=178:data-access&catid=33&Itemid=141#global](https://www.iode.org/index.php?option=com_content&view=article&id=178:data-access&catid=33&Itemid=141#global)

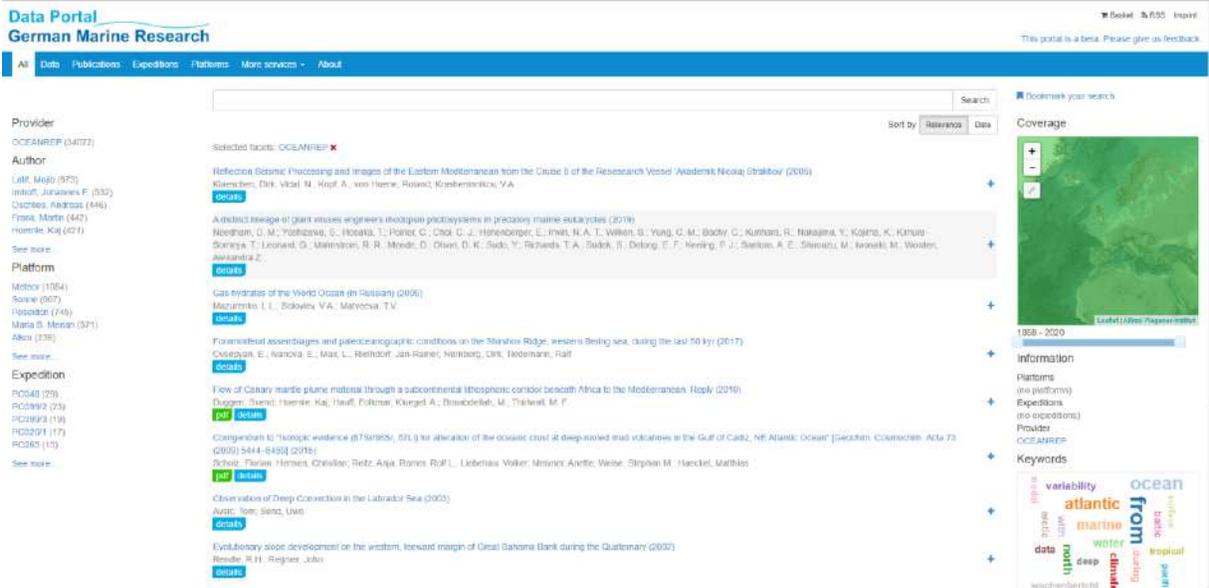
Introduction document:

ID:

Non-002

Name:

Data Portal German Marine Research



Component:

Non-specific classification

Data format:

See each dataset

Status:

Ongoing

Acquisition method:

See each dataset

Data resolution:

See each dataset

Data available:

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.

Further information:

It is a product of the Marine Network for Integrated Data Access (MaNIDA) funded cooperatively by the Helmholtz Association

Website:

<https://www.manida.org/>

Data Portal German Marine Research: <https://manida.awi.de/>

Introduction document:

**ID:** Non-003  
**Name:** PANGAEA Data Publisher



**Component:** Non-specific classification

**Data format:** See each dataset

**Status:** Ongoing

**Acquisition method:** See each dataset

**Data resolution:** See each dataset

**Data available:** It is a collection of sea scientific open data publication and linked with data used in the research (oceans, biological classification, ecology, biosphere, fisheries)

**Further information:** It is a 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.

**Website:** <https://pangaea.de/>

**Introduction document:**

**ID:** Non-004  
**Name:** SEA scientific Open data Edition(Seanoe)

The screenshot shows the SEANOE website interface. At the top, there is a navigation bar with the SEANOE logo and the text 'Sea scientific open data publication'. To the right, there are links for 'About' and 'Publish your data', along with logos for 'ODATIS' and 'SeaDataNet'. Below the navigation bar, there is a search bar with the placeholder text 'Search everywhere' and a 'Search document' button. The main content area displays 541 results, sorted by newest. Two results are visible:

- Linking Danube River Activity to Alpine Ice-Sheet Fluctuations during the Last Glacial (ca. 33-17 ka BP): insights into the continental signature of Heinrich Stadials**  
 Authors: Martinez-Lamas Ruth, Toucanne Samuel, Debret Maxime, Riboulot Vincent, Deloffre Julien, Boissier Audrey, Cheron Sandrine, Pitel-Roudaut Mathilde, Bayon Germain, Giosan Livia, Soulet Guillaume  
 Description: Offshore archives retrieved from marine/lacustrine environments receiving sediment from large river systems are valuable Quaternary continental records. In the present study, we reconstruct the Danube River activity at the end of the last glacial period based on sedimentological, mineralogical and geochemical analyses performed on long-piston cores from the north-west Black Sea margin. Our data suggest that the Danube River produced hyperpycnal floods throughout the ca. 33-17 ka period. Four [...]  
 2020. Dataset. Access on demand
- RADSeq-derived SNP genotypes for 159 thornback ray Raja clavata from the Bay of Biscay**  
 Authors: Le Cam Sabrina, Bidault Adeline, Charrier Gregory, Cornette Florence, Lamy Jean-Baptiste, Lapegue Sylvie, Lorange Pascale, Marandel Florianne, Trenkel Verena  
 Description: We developed a panel of single nucleotide polymorphism (SNP) markers for 159 thornback ray Raja clavata sampled in the Bay of Biscay during the period 2011-2016 using a RADSeq protocol. Demultiplexed sequences were aligned to the genome of Leucoraja erinacea which was used as reference genome. From an initial set of 389 483 putative SNPs, we only retained loci with a calling frequency percentage above 50%, MAF (minor allele frequency) above 0.01 and read depth below 500 to remove spurious SNPs. [...]  
 2019-12-06. Dataset. Access on demand, Open access

**Component:** Non-specific classification  
**Data format:** See each dataset  
**Status:** Ongoing  
**Acquisition method:** See each dataset  
**Data resolution:** See each dataset  
**Data available:** A publisher of scientific data in the field of marine sciences  
**Further information:**  
**Website:** <http://www.seanoe.org/>  
**Introduction document:**

**ID:** Non-005  
**Name:** Global Earth Observation System of Systems' Platform(GEOSS Platform)



**Component:** Non-specific classification  
**Data format:** See each dataset  
**Status:** Ongoing  
**Acquisition method:** See each dataset  
**Data resolution:** See each dataset  
**Data available:** An earth observation data portal  
**Further information:**  
**Website:** <http://www.earthobservations.org/gci.php>  
<http://www.geoportal.org/>  
**Introduction document:**