MANUAL OF MARINE AND COASTAL DATASETS OF BIODIVERSITY IMPORTANCE

AN INTRODUCTION TO KEY MARINE AND COASTAL BIODIVERSITY DATASETS (03/2019 EDITION)

Detailed dataset-specific metadata
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SUGGESTED CITATION

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Cover page image: Raja Ampat Islands, Indonesia (Photo by Alexandra Rose on Unsplash).

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Marine Forests

Description: The Project 'Marine Forests' is an open source project supported by scientists and volunteer citizens to collect and organize information about the marine forests of the world. It is supported by scientists and volunteer citizens from all around the world. WoRMS (World Register of Marine Species) provides free access to its database in the entries of species names.

Marine Forests is funded by the Pew Charitable Trusts (USA) and also by Biodiversa (EU), Euromarine, and national science funding agencies of scientists throughout the world (including Formas, Naturvardsverket, ANR, FCT, MEC, FRCT, DFG). The Marine Forests website is operated and owned by the Centre of Marine Sciences (CCMAR), Portugal.


Temporal range: 1842 - present

Geographical range: Global

Supplementary information: None.

Purpose of creation: The project aims to build and maintain a database of distribution records of structural benthic species of seaweeds, seagrasses and animal forests, at global scales, and to make this information freely available worldwide. It also promotes education, marine literacy and the FAIR principle (to make data Findable, Accessible, Interoperable and Reusable).

Creation methodology: Anyone can add photos of marine forests, taken underwater or at low tide, and upload them onto the Marine Forests website. Citizens can also add records from bibliography, herbaria and museums. The minimum information required is the date and location, while identification of species can be completed and/or verified by anyone subscribed to Marine Forests.

Version: 1.0 (2018)

Data lineage: Not reported.

Category: Biogenic habitat
Limitations: All photographs of marine forests are very useful records of their existence in space and time. However, many records cannot be identified to species level just from photographs. Before using the data check the source and validation level (has the species name been curated), experts should be consulted on the taxon and/or region, and independent data verifications should be made.

Other access/use constraints: This initiative follows the FAIR principle, to make data Findable, Accessible, Interoperable and Reusable (Wilkinson et al., 2016). Wilkinson, M. D. et al. (2016). Scientific Data. doi:10.1038/sdata.2016.18

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For more information, please visit: https://marineforests.com/terms/.

Contact organisation: Centre of Marine Sciences
Organisation type: Resource provider
Acronym: CCMAR

Name: Dr. Ester Serrão
City: Faro
E-mail: eserrao@ualg.pt
Web site: https://www.ccmar.ualg.pt
Data format(s): Online database, Online maps
Distribution format(s): Online database, Online maps, Tabular (.xls, .csv, or .tab)

Dataset size (uncompressed): Variable

Dataset ID: CCMAR-001

Webpage and/or download:
https://www.marineforests.com/

West bounding:   -180.0   East bounding:  180.0
South bounding:  -60.0     North bounding:   60.0
Metadata standard: UNEP-WCMC Specific   Date of metadata:  22/11/2018
Global Wetlands Map

Description: Wetlands play a fundamental role in climate change mitigation, and provide essential ecosystem services. Yet there is still a lot we don’t know about their precise distribution, extent and inter-annual variability around the world, particularly in the tropics.

The Global Wetlands Map is an initiative to collect and share information on tropical wetlands in a visual format. Users can access data and contribute their own, using standard geographic information systems software such as ArcGIS.

Citation(s):
To cite the platform:

To cite the dataset:

Temporal range: 2011 - 2017
Geographical range: Global
Supplementary information: None.
Purpose of creation:
Map navigation:
Scroll, use the buttons (+ and -) to zoom in and out, or click and drag to move the map in any direction. Change the Map View by selecting datasets on Wetlands, Peatlands or Carbon Stocks at the top left of the screen.

Wetlands profile at national and sub-national level:
To generate information on wetland profile at national and sub-national level, select a country from the dropdown list. Wetlands profile at national level will be shown at the right panel. To go to sub-national level, you can then further select sub-national administrative area from the list.

Comparing wetlands profile:
After selecting a country or sub-national wetlands profile, you can compare the result with any other country or sub-national administrative level. Click compare icon on the right panel. Add up to 2 more countries or sub-national admin to compare. Click compare button to view the comparison.

Country ranking:
To list down top 10 of the country that has particular wetlands properties, click Wetlands Ranking on the top. Total wetlands area is the default property that being ranked, but you can pick any other properties from the dropdown list on the top of the panel.

Download data:
For advanced users who need direct access to the data, you can download the datasets to conduct your own analysis and do further work. Data can be accessed in a GeoTIFF format in its original resolution (approximately 236 m) to conduct further work using GIS software.

Creating methodology:
We present an expert system approach to estimate wetland and peatland areas, depths and volumes, which relies on three biophysical indices related to wetland and peat formation: 1. Long-term water supply exceeding atmospheric water demand; 2. Annually or seasonally water-logged soils; 3. A geomorphological position where water is supplied and retained.

The Global Wetlands Map is produced by the Sustainable Wetlands Adaptation and Mitigation Program (SWAMP), a collaborative effort between the Center for International Forestry Research (CIFOR) and the United States Forest Service, supported by the United States Agency for International Development (USAID) and the CGIAR Research Program on Forests, Trees and Agroforestry (FTA).

Version: 2.0 (2017)
Data lineage: The dataset is version 2 with significant improvements compare to previous version. It shows distribution of wetland, peatland and peat depth that covers the tropics and sub tropics (40° N to 60° S; 180° E to -180° W), excluding small islands. It was mapped in 231 meters spatial resolution. The dataset can be viewed in this interactive map: http://www.cifor.org/global-wetlands/.

Category: Biogenic habitat
Keywords: Mangroves, wetlands

Similar datasets:
Limitations: Not reported.

Maintenance frequency: Data are not being updated.
Main access/use constraint:
Other access/use constraints: Not reported.
<table>
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<td>Contact organisation: Centre for International Forestry Research</td>
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<table>
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<tr>
<th>Organisation type: Creator</th>
<th>Acronym: CIFOR</th>
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<tr>
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<td>Position:</td>
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<td>City:</td>
<td>Country:</td>
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<td>Web site:</td>
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<td>Data format(s): Raster (.tif, geotiff)</td>
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| Distribution format(s): Raster (.tif, geotiff) | Dataset size (uncompressed): 256.0 MB |

Webpage and/or download: [https://www.cifor.org/global-wetlands/](https://www.cifor.org/global-wetlands/)
Other webpage: 
Web map service: 

Factsheet: 
Resolution, scale: 231m  Reference system: WGS 1984
West bounding: -180.0  East bounding: 180.0
South bounding: -60.0  North bounding: 40.0
Metadata standard: UNEP-WCMC Specific  Date of metadata: 05/03/2019
**Global Distribution of Tidal Flat Ecosystems**

**Description:** The dataset contains global maps of tidal flat ecosystems produced via a supervised classification of 707,528 Landsat Archive images. Each pixel was classified into tidal flat, permanent water or other with reference to a globally distributed set of training data.


Data available at: [https://www.intertidal.app/download](https://www.intertidal.app/download) or [http://data.unep-wcmc.org/datasets/47](http://data.unep-wcmc.org/datasets/47)

**Temporal range:** 1984-2016

**Geographical range:** Global


This product depicts tidal flat ecosystems around the global coastline.

**Purpose of creation:** The maps were created to identify the non-vegetated areas of Earth's coastline that undergo regular tidal inundation. In some areas, these occur as tidal flats up to 24-km wide, such as the tidal mudflats of western Europe and East Asia. Our analysis included 56 predictor layers, many of which were Landsat composite metrics designed to identify individual pixels that undergo frequent wetting and drying.

**Creation methodology:** The dataset contains global maps of tidal flat ecosystems produced via a supervised classification of 707,528 Landsat Archive images. Each pixel was classified into tidal flat, permanent water or other with reference to a globally distributed set of training data. The classification was implemented along the entire global coastline between 60° North and 60° South from 1 January 1984 to 31 December 2016.
Pixels classified as tidal flat in the analysis represent several types of tidal flat ecosystems, including unconsolidated fine-grain sediments (tidal mudflats), unconsolidated coarse-grain sediments (tidal sand flats), and consolidated sediments, organic material or rocks (wide tidal rock-platforms), while excluding spectral signatures indicating the presence of vegetation dominated intertidal ecosystems such as mangroves and vegetated marshes. The analysis aimed to identify pixels that are subject to regular tidal inundation, and therefore may also include other intertidal systems where intertidal dynamics are observable.

**Version:** 1.0 (2019)

**Data lineage:**

**Category:** Biogenic habitat

**Keywords:** landsat derived; uq; murray; tidal flats; intertidal; coastal

**Similar datasets:** WCMC-027, WCMC-013-014

**Limitations:** The approach achieved >82% accuracy when compared to independent, globally distributed, validation data. In many areas on earth pixels undergo a similar wetting and drying regime, so it is possible to find areas of aquaculture and coastal development that display similar dynamics. In addition, areas where there were few satellite images available for the analysis, or where the water is highly turbid, may also cause commission error.

Owing to the variable availability of Landsat images over the study period, each time step in the intertidal change data has a varying extent. This variation makes it difficult to interpret the dataset as a time series. To do so, QA layers may be used to develop masks of the minimum extent where the classifier was implemented. Furthermore, as a time-series where each time-step has variable accuracy, we recommend using an appropriate statistical model rather than direct measures of area change. Please read the paper or contact the corresponding author for further information.

**Maintenance frequency:** Data are updated on a yearly basis.

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**Other access/use constraints:**
Dataset ID: MUR-001

Contact organisation: The University of Queensland

Organisation type: Creator

Acronym:

Name: Dr. N. Murray

Position: Research Fellow

City: Brisbane

Country: Australia

E-mail: murr.nick@gmail.com

Web site: https://www.uq.edu.au/

Data format(s): Raster (.tif, geotiff)

Distribution format(s): Raster (.tif, geotiff)

Dataset size (uncompressed): ~3.5 GB

Webpage and/or download: https://wcmc.io/MUR_001

Other webpage: https://www.intertidal.app/home

Web map service: https://gis.unep-wcmc.org/arcgis/rest/services/marine/MUR_001_Intertidal_Marsh/MapServer

Factsheet:

Resolution, scale: 30m

Reference system: WGS 1984

West bounding: -180.0

East bounding: 180.0

South bounding: -60.0

North bounding: 60.0

Metadata standard: UNEP-WCMC Specific

Date of metadata: 16/01/2019
Global Mangrove Watch

Description: The Global Mangrove Watch (GMW) was initiated as part of the K&C Initiative in 2011. It is led by Aberystwyth University (U.K.) and solo Earth Observation (Sweden), in collaboration with Wetlands International, the International Water Management Institute (Laos) and the UN Environment World Conservation Monitoring Centre (UNEP-WCMC).

The GMW aims to provide geospatial information about mangrove extent and changes to the Ramsar Convention, national wetland practitioners, decision makers and NGOs. It is part of the Ramsar Science and Technical Review Panel (STRP) work plan for 2016-2018 and a Pilot Project to the Ramsar Global Wetlands Observation System (GWOS), which is implemented under the GEO-Wetlands Initiative. The primary objective of the GMW has been to provide countries lacking a national mangrove monitoring system with first cut mangrove extent and change maps, to help safeguard against further mangrove forest loss and degradation.

The GMW has generated a global baseline map of mangroves for 2010 using ALOS PALSAR and Landsat (optical) data, and changes from this baseline for eight epochs between 1996 and 2017 derived from JERS-1, ALOS and ALOS-2. Annual maps are planned from 2018 and onwards.


Other cited references:

Temporal range: 1996 - 2016
Geographical range: Global

The Global Mangrove Watch uses using ALOS PALSAR and Landsat data. More
information on ALOS PALSAR can be found at: https://www.eorc.jaxa.jp/ALOS/en/about/palsar.htm

Purpose of creation:

This project aimed to initiate a mangrove monitoring system (Global Mangrove Watch; GMW) by achieving a mangrove baseline for the nominal year 2010 and mapping the changes in forest extent with the provision of newly acquired data. This baseline was achieved using a combination of optical and radar data whilst the time-series change detection relied on radar data alone. The GMW was originally formed as part of the JAXA Kyoto & Carbon initiative and aims to:
- Generate revised baseline maps of mangrove extent in the tropics and subtropics for 2010 and 2015;
- Undertake routine monitoring of mangroves;
- Provide validation of the products through reference to field and other remote sensing acquisitions for key sites worldwide;
- Describe and understand the causes and consequences of change, whether natural or anthropogenic; and
- Contribute to the Ramsar Global Wetlands Observing System (GWOS).

Creation methodology:

The approach adopted by the GMW was first to establish a baseline map of mangroves for 2010 at a global level through a random forests classification of both Landsat sensor spectral composite data (all spectral wavebands) and Advanced Land Observing Satellite (ALOS) Phased Arrayed L-band Synthetic Aperture Radar (SAR) data. The use of both optical and radar data benefited the random forest classification as these are sensitive to differences in the species composition, cover and also distribution of woody (branch, trunk and root) material. Changes away from and within this baseline were subsequently derived for 1996 (JERS-1) 2007, 2008, 2009 (ALOS PALSAR), 2015 and 2016 (ALOS-2 PALSAR-2) using a histogram thresholding approach (Thomas et al., 2017), with these data reflecting losses or gains in mangrove wood volume/biomass. The GMW maps integrate both optical and radar sensors for the period of observation. No mapping was available prior to 1996.

This work thus maps changes relative to existing pan-tropical and subtropical mangrove baseline data sets using mid-1990’s JERS-1 SAR data, ALOS PALSAR data acquired in 2007, 2008, 2009 and 2010 and ALOS-2 PALSAR-2 annually from 2015 onwards.

Version: 2.0

Data lineage: This work utilized ALOS-2 PALSAR-2 data to detect changes in forest extent from the 2010 baseline to 2014 and beyond, whilst historic changes in extent were detected using JERS-1 imagery collected in the mid-1990s. Annual maps are planned from 2018 and onwards, available at https://www.globalmangrovewatch.org/datasets/.

Category: Biogenic habitat

Keywords: coastal, blue carbon, remote sensing, satellite, mangrove, forest, habitat, ecosystem

Similar datasets: WCMC-010, WCMC-011, WCMC-012
Limitations:
The Landsat-7 ETM+ scanline error affects the classification in certain areas, resulting in striping artefacts in the data.

In 2018, to assess the GMW data quality, classification accuracy was assessed with over 53,800 randomly sampled points across 20 randomly selected regions. Overall accuracy was 95.25%, while User’s and Producer’s accuracies for the mangrove class were estimated at 97.5% and 94.0%, respectively. Users should be aware that it is a global-scale dataset, generated with a single methodology applied over all regions. As such, the accuracy of the map may vary between locations. Factors such as satellite data availability (due to clouds, cloud shadows and Landsat-7 ETM+ scanline error), mangrove species composition and level of degradation all influence the accuracy. The mangrove seaward border is generally more accurately defined than the landward side, where the distinction between mangrove and certain terrestrial vegetation types (e.g. tropical rainforest) can be lower.

Maintenance frequency:
Data are updated on a yearly basis.

Main access/use constraint:
Creative Commons Attribution 4.0 Unported (CC BY 4.0). See https://creativecommons.org/licenses/by/4.0/ for details. Free to (1) copy and redistribute the material in any medium or format, (2) remix, transform, and build upon the material for any purpose, even commercially. You must give appropriate credit, provide a link to the license, and indicate if changes were made. You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use. You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits.

Other access/use constraints:
Only the 2010 GMW layer is currently available for download on the Ocean Data Viewer. Further layers will be added to the platform from 2018 onwards.

Contact organisation:
Global Mangrove Watch

Creator: Ake Rosenqvist
Position: K&C Science Coordinator
City: Tokyo
Country: Japan
E-mail: ake.rosenqvist@soloEO.com
Dataset ID: GMW-001

Other webpage: [http://www.arcgis.com/home/webmap/viewer.html?webmap=cc7b73b3ca264768ac769fb7575fffe5](http://www.arcgis.com/home/webmap/viewer.html?webmap=cc7b73b3ca264768ac769fb7575fffe5)

Web map service: [https://gis.unep-wcmc.org/arcgis/rest/services/marine/GMW_001_MangroveDistribution_2010/MapServer](https://gis.unep-wcmc.org/arcgis/rest/services/marine/GMW_001_MangroveDistribution_2010/MapServer)

Factsheet: [http://wcmc.io/mangroves](http://wcmc.io/mangroves)

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Global Distribution of Coral Reefs

Description: This dataset shows the global distribution of coral reefs in tropical and subtropical regions. It is the most comprehensive global dataset of warm-water coral reefs to date, acting as a foundation baseline map for future, more detailed, work. This dataset was compiled from a number of sources by UNEP World Conservation Monitoring Centre (UNEP-WCMC) and the WorldFish Centre, in collaboration with WRI (World Resources Institute) and TNC (The Nature Conservancy). Data sources include the Millennium Coral Reef Mapping Project (IMaRS-USF and IRD 2005, IMaRS-USF 2005) and the World Atlas of Coral Reefs (Spalding et al. 2001).

Citation(s):


Citations for the separate entities:


A form of this dataset was used in the following publication:

Temporal range: 1954-2009

Geographical range: Global

Supplementary information:
Attribute table: Automatically generated number (OBJECTID); Unique ID distinguishing the data entry (LAYER_ID); Metadata ID linking to the source of the dataset, found in the associated metadata table (METADATA_ID); ISO 3166-3 character code of country or territory where the feature is located (PARENT_ISO and ISO3); ISO 3166-2 sub-national code(s) where the feature is located (SUB_LOC); English name of the feature as provided by the data provider (NAME); Name of the feature as provided by the data provider in original language (ORIG_NAME); Local definition of feature as provided by the data provider (LOC_DEF); Scientific (Latin) name(s) of family, genus and species (FAMILY, GENUS, SPECIES); Reported area in square kilometres (REP_AREA_KM2); Area calculated using GIS, in square kilometres (GIS_AREA_KM2); description of whether data have been obtained through remote sensing and/or field survey (DATA_TYPE); data gathering approach (SURVEY_MET); start and end date of data collection (of survey), supplied as text in the format YYYY-MM-DD (ISO date format) (START_DATE, END_DATE); character code that identifies accuracy of dates used in START_DATE and END_DATE to the nearest day(s), month(s), or year(s) (DATE_TYPE); Minimum/maximum depth in metres that the feature was found (MIN_DEPTH and MAX_DEPTH); binomial value indicating whether the feature occurs in an area protected by law or any other conservation measure, where '0' = not within a protected area, '1' = partially within a protected area, and '2' = fully within a protected area (PROTECT); feature protected by law or by any other conservation measures (PROTECT_FEAT); measure that protects the feature (PROTECT_STAT); verification by government or expert (VERIF).

Purpose of creation:
IMaRS-USF was funded by the Oceanography Program of NASA (National Aeronautics and Space Administration) to provide an exhaustive worldwide inventory of coral reefs using high-resolution satellite imagery, under the framework of the Millenium Coral Reef Mapping Project (Andréfouët et al. 2006). As a fully validated Millennium Coral Reef Mapping Project product was not available at the global scale, there was a need to create an 'interim' global amalgamated map product. The dataset was hence created to further mobilise the Millennium Coral Reef Mapping Project products and their validation.

Creation methodology:
Approximately 85% of this dataset originates from the Millennium Coral Reef Mapping Project, of which 35% was validated (by IMaRS-USF and IRD-Noumea) and 50% remains unvalidated (but was interpreted by UNEP-WCMC). Millennium Coral Reef Mapping Project products (validated or not) are at a consistent 30 m resolution (multispectral Landsat 7 images acquired between 1999 and 2002, http://www.imars.usf.edu/MC/index.html). Additional information regarding methodology and 'validated' and 'unvalidated' polygons can be obtained from http://oceancolor.gsfc.nasa.gov/LANDSAT/HTML/README.html.

Where there were no Millennium Coral Reef Mapping Project products, data
(representing the remaining 15%) were compiled from other sources by UNEP-WCMC. These sources include data from the World Atlas of Coral Reefs (Spalding et al. 2001) and coral reef maps reproduced with permission from the Controller of Her Majesty's Stationery Office and the UK Hydrographic Office (www.ukho.gov.uk) © British Crown Copyright and/or database rights. The dataset is mostly fitted to ESRI’s base layer.

**Version:**
3.0 (June 2018)

**Data lineage:**
Version 3 (June 2018): Geographic attributions (ISO3 and Parent ISO3 codes) of points and polygons in the datasets have been matched to the World Vector Shoreline Plus and VLIZ World EEZ v10 geographic layers. This improves the accuracy of these datasets for national and regional studies. ISO3 codes need to be updated regularly due to codes becoming obsolete or EEZ boundaries being adjusted. Multipart points and polygons features were created to reduce the complexity of the attribute tables, merging those with identical attributes. This reduces the processing power required to handle the data while maintaining the level of detail required. The habitat datasets have been quality checked for obsolete ISO3 codes, overlapping claims identified and "Not Reported" consistently used for missing values rather than NA or blanks.

Version 2.0 (December 2017): Standardises the feature and metadata attributes using a new schema, which aligns the attributes used across the habitat datasets curated by UNEP-WCMC. The updated attribute schema is outlined in "Supplementary Information." Specific changes include the addition of information on level of protection (e.g. PROTECT, PROTECT_FEA, PROTECT_STAT), indication of whether the data have received expert or government verification (VERIF), and information on the start and end dates of data collection (i.e. START_DATE, END_DATE). The new schema will be used to inform a set of quality indicators, assessing changes in data quality over time.

This dataset supersedes the one used in the World Atlas of Coral Reefs (Spalding et al. 2001), and should by no means replace the official release of the Millennium Coral Reef Mapping Project. There may be future updates as better information becomes available and as further Millennium Coral Reef Mapping Project products become available. Changes to the original dataset (ver. 1.0) include:
- Ver. 1.1: Attributes were consolidated in July 2012;
- Ver. 1.2: Duplicate polygons were removed in April 2013;
- Ver. 1.3: further minor-scale corrections (spatial shifts reported by users, duplicate polygons) were carried out in April 2014, and were updated online on the 11th February 2015. The total extent (after dissolve) is 150,048 sq km (326,019 polygons).

**Category:** Biogenic habitat

**Keywords:** coastal, marine, corals, biogenic

**Similar datasets:** WCMC-009, WCMC-045, WCMC-001

**Limitations:** While having global coverage, the dataset was compiled from multiple sources with varying scale and quality (outlined in "Metadata_CoralReefs.dbf" included in the package). The dataset has yet to undergo external review.
The 'validated data' correspond to the final standard of Millennium Coral Reef Mapping Project products; they can evolve according to minor corrections and modifications, but no major changes should be expected. In the 'unvalidated data', boundaries of occurrence polygons are unchecked and associated attributes are incomplete. In some areas, unvalidated and validated polygons of differing shapes overlap.

As the dataset may still contain overlapping polygons, a dissolve operation (within a GIS) might be needed before surface area calculations are carried out. Most of the dataset's polygons align relatively well (spatially) to the base layer (coastline) of Open Street Map (used in ESRI ArcGIS software).

Maintenance frequency: Corrections are made on an ad-hoc basis.


Other access/use constraints: For display and use of data below global scale, please cite individual data sources (listed in "Metadata_CoralReefs.dbf").

Contact organisation: UN Environment World Conservation Monitoring Centre

Organisation type: Custodian

Acronym: UNEP-WCMC

Name: Lauren Weatherdon

Position: Senior Programme Officer

City: Cambridge

Country: United Kingdom

E-mail: lauren.weatherdon@unep-wcmc.org

Web site: www.unep-wcmc.org

Data format(s): KML, Vector (polygon; .shp), WMS

Distribution format(s): KML, Vector (polygon; .shp), WMS

Dataset size (uncompressed): 1.33 GB

Webpage and/or download: http://data.unep-wcmc.org/datasets/1

Other webpage: http://www.arcgis.com/home/item.html?id=97071c9600d4ea6b0aabe4ed125661f

Web map service: https://gis.unep-wcmc.org/arcgis/rest/services/marine/WCMC_008_CoralReefs_WMS/MapServer

Factsheet: http://wcmc.io/warm_coral_reef

Resolution, scale: Variable

Reference system: WGS 1984

West bounding: -180.0

East bounding: 180.0
Dataset ID: WCMC-008

South bounding: -34.3
North bounding: 32.5

Metadata standard: UNEP-WCMC Specific
Date of metadata: 21/12/2017
Global Distribution of Coral Reefs - 1 Km Data (2003)

Description: This dataset shows the global distribution of warm-water coral reefs as a 1 km resolution grid produced by UNEP-WCMC from an updated version of the data layer in Spalding et al. (2001).


Temporal range: Unknown
Geographical range: Global
Supplementary information: Coral reefs are present in each cell of the grid.
Purpose of creation: The dataset was produced to help understanding the distribution of warm-water coral reefs.

Creation methodology: Occurrence data was collated from various sources of differing collection methodologies. A one-kilometre square grid version was then produced to enable distribution of the data (due to restricted permissions).

Version: 7.0
Data lineage: This dataset is an update of the dataset used in Spalding et al. (2001).
Category: Biogenic habitat
Keywords: marine, tropical, benthic, biogenic, habitat, coral reef, ecosystem

Similar datasets: WCMC-008, WCMC-045, WCMC-001

Limitations: No information is provided regarding percentage coverage of coral reefs in each grid cell. The dataset should therefore not be used to calculate surface areas of coral reef coverage.

Dataset WCMC-08 (2010) is a better alternative (e.g. Spatial resolution, coverage, etc).

Maintenance frequency: Data are not being updated.


Other access/use constraints: None

Contact organisation: UN Environment World Conservation Monitoring Centre

Organisation type: Custodian

Acronym: UNEP-WCMC

Name: Lauren Weatherdon

Position: Senior Programme Officer

City: Cambridge

Country: United Kingdom

E-mail: lauren.weatherdon@unep-wcmc.org

Web site: www.unep-wcmc.org

Data format(s): Vector (polygon; .shp)

Distribution format(s): Vector (polygon; .shp)

Dataset size (uncompressed): 5.89MB

Webpage and/or download: See metadata

Other webpage: Web map service:

Factsheet: http://wcmc.io/warm_coral_reef

Resolution, scale: 1 km cell size

West bounding: -180.0

South bounding: -34.3

Metadata standard: UNEP-WCMC Specific

Reference system: WGS 1984

East bounding: 180.0

North bounding: 32.5

Date of metadata: 29/05/2015
Global Distribution of Cold-water Corals

Description: This dataset shows the global distribution of cold-water corals. Occurrence records are given for the subclass Octocorallia (octocorals; also known as Alcyonaria) and four Orders (in Class Anthozoa): Scleractinia (reef-forming corals), Antipatharia (black corals), Zoanthidae (encrusting or button polyps), and Pennatulacea (sea pens). Occurrence records are also available for the order sub-Order Filifera (lace corals) in Class Hydrozoa.


Temporal range: 1915-2014
Geographical range: Global

Supplementary information: Attribute table: Automatically generated number (OBJECTID); Unique ID distinguishing the data entry (LAYER_ID); Metadata ID linking to the source of the dataset, found in the associated metadata table (METADATA_ID); ISO 3166-3 character code of country or territory where the feature is located (PARENT_ISO and ISO3); ISO 3166-2 sub-national code(s) where the feature is located (SUB_LOC); English name of the feature as provided by the data provider (NAME); Name of the feature as provided by the data provider in original language (ORIG_NAME); Local definition of feature as provided by the data provider (LOC_DEF); Scientific (Latin) name(s) of family, genus and species (FAMILY, GENUS, SPECIES); Reported area in square kilometres (REP_AREA_KM2); Area calculated using GIS, in square
kilometres (GIS_AREA_KM2); description of whether data have been obtained through remote sensing and/or field survey (DATA_TYPE); data gathering approach (SURVEY_MET); start and end date of data collection (of survey), supplied as text in the format YYYY-MM-DD (ISO date format) (START_DATE, END_DATE); character code that identifies accuracy of dates used in START_DATE and END_DATE to the nearest day(s), month(s), or year(s) (DATE_TYPE); Minimum/maximum depth in metres that the feature was found (MIN_DEPTH and MAX_DEPTH); binomial value indicating whether the feature occurs in an area protected by law or any other conservation measure, where '0' = not within a protected area, '1' = partially within a protected area, and '2' = fully within a protected area (PROTECT); feature protected by law or by any other conservation measures (PROTECT_FEAT); measure that protects the feature (PROTECT_STAT); verification by government or expert (VERIF).

**Purpose of creation:**

Version 1 of the dataset was created to accompany the report by Freiwald et al. (2004). Versions 2, 3, 4 and 5 were created as updates to the original dataset, to provide a more complete picture of the locations of cold corals globally.

**Creation methodology:**

Occurrence records were obtained from various sources, including reports, peer-reviewed articles and expert consultations. Many individuals and organisations contributed by providing UNEP-WCMC with their data in electronic form. For more information regarding sources please see the "Metadata_Cold_corals.dbf" table included.

**Version:**

5.0 (June 2018)

**Data lineage:**

Version 5.0 (June 2018): Geographic attributions (ISO3 and Parent ISO3 codes) of points and polygons in the datasets have been matched to the World Vector Shoreline Plus and VLIZ World EEZ v10 geographic layers. This improves the accuracy of these datasets for national and regional studies. ISO3 codes need to be updated regularly due to codes becoming obsolete or EEZ boundaries being adjusted. Multipart points and polygons features were created to reduce the complexity of the attribute tables, merging those with identical attributes. This reduces the processing power required to handle the data while maintaining the level of detail required. The habitat datasets have been quality checked for obsolete ISO3 codes, overlapping claims identified and "Not Reported" consistently used for missing values rather than NA or blanks.

Version 4.0 (December 2017): Standardises the feature and metadata attributes using a new schema, which aligns the attributes used across the habitat datasets curated by UNEP-WCMC. The updated attribute schema is outlined in "Supplementary Information." Specific changes include the addition of information on level of protection (e.g. PROTECT, PROTECT_FEAT, PROTECT_STAT), indication of whether the data have received expert or government verification (VERIF), and information on the start and end dates of data collection (i.e. START_DATE, END_DATE). The new schema will be used to inform a set of quality indicators, assessing changes in data quality over time.

Versions 2 and 3 were updates implemented by UNEP-WCMC to the original dataset, in collaboration with Andre Freiwald and John Guinotte. Version 2 (with data between 1915 and 2006) consisted of 6,551 data points. Version 3.0 comprises 32,631 occurrences of cold corals, a five-fold increase, as well as an
additional 1,203 polygons (covering 4,012 square kilometres), with data collected between 1915 and 2014. The polygon dataset derives from data obtained from OSPAR and Dorschel et al.'s "Atlas of the Deep-water Seabed - Ireland". Version 2 obtained data for 80 countries, as well as locations of cold corals within the high seas, while version 3 obtains data for 132 countries, in addition to the locations within the high seas.

**Category:** Biogenic habitat

**Keywords:** deep sea, high seas, benthic, marine

**Similar datasets:** Yesson-001, Davies-001

**Limitations:**
The high density of reefs shown in the North Atlantic most probably reflects the intensity of research in this region. Further discoveries are expected worldwide, particularly in the deeper waters of subtropical and tropical regions. Please note that taxonomic classifications change frequently.

**Maintenance frequency:** Data are updated in intervals that are uneven in duration.

**Main access/use constraint:** UNEP-WCMC General Data Licence (excluding WDPA). See www.unep-wcmc.org/policies/general-data-license-excluding-wdpa#data_policy and www.unep-wcmc.org/policies. For commercial use, please contact business-support@unep-wcmc.org.

**Other access/use constraints:** None

**Contact organisation:** UN Environment World Conservation Monitoring Centre

**Organisation type:** Custodian

**Acronym:** UNEP-WCMC

**Name:** Lauren Weatherdon

**Position:** Senior Programme Officer

**City:** Cambridge

**Country:** United Kingdom

**E-mail:** lauren.weatherdon@unep-wcmc.org

**Web site:** www.unep-wcmc.org

**Data format(s):** KML, Vector (point; .shp), Vector (polygon; .shp), WMS

**Distribution format(s):** KML, Vector (point; .shp), Vector (polygon; .shp), WMS

**Dataset size (uncompressed):** 23 Mb

**Webpage and/or download:** http://data.unep-wcmc.org/datasets/3
Dataset ID: WCMC-001

Other webpage: [http://www.arcgis.com/home/item.html?id=3ecb764343324bcab4c64c66d324cbd0](http://www.arcgis.com/home/item.html?id=3ecb764343324bcab4c64c66d324cbd0)

Web map service: [https://gis.unep-wcmc.org/arcgis/rest/services/marine/WCMC_001_ColdCorals2017_WMS/MapServer](https://gis.unep-wcmc.org/arcgis/rest/services/marine/WCMC_001_ColdCorals2017_WMS/MapServer)

Factsheet: [http://wcmc.io/cold-coral](http://wcmc.io/cold-coral)

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Global Habitat Suitability for Framework-Forming Cold-Water Corals (2011)

Description: This dataset shows the modelled global habitat suitability for five framework-forming cold-water corals. Habitat suitability was modelled using records of coral presence, the best available data on environmental conditions and high-resolution ocean bathymetry.


Temporal range: 2011

Geographical range: Global

Supplementary information: Habitat suitabilities for five species are given as probabilities of occurrence: Enallopsammia rostrata (ena.tif), Goniocorella dumosa (gon.tif), Lophelia pertusa (lop.tif), Madrepora oculata (mad.tif) and Solenosmilia variabilis (sol.tif). In addition, a combined scleractinian map is given (scler.tif).

Purpose of creation: This dataset was developed to identify where cold-water corals may occur, and to provide insight into the environmental drivers which control their spatial distribution. The work was published in the paper “Global Habitat Suitability for Framework-Forming Cold-Water Corals” (Davies and Guinotte, 2011)

Creation methodology: Maximum entropy modelling (using Maxent) was used to predict habitat suitability for each species. Coral presence data (for Enallopsammia rostrata, Goniocorella dumosa, Lophelia pertusa, Madrepora oculata and Solenosmilia variabilis) were collated from various sources, including online databases, peer-reviewed journals, museum records, cruise reports and the grey literature. Thirty-two environmental layers were created for use as input in the predictive models. These datasets were collated from sources that included ship "CTD" data, satellite telemetry (e.g. MODIS), climatologies and modelled data. See Davies and Guinotte (2011) for further details.

Version: 1.0

Data lineage: Category: Biogenic habitat
Keywords: deep sea, model, high seas, benthic, marine

Similar datasets: 

Limitations: Limitations are discussed in Davies and Guinotte (2011).

Maintenance frequency: Data are not being updated.

Main access/use constraint: See 'Other access/use constraint(s)'.

Other access/use constraints: Please contact andrew.j.davies@bangor.ac.uk and John.Guinotte@marine-conservation.org.

Contact organisation: School of Ocean Sciences, University of Bangor

Organisation type: Owner

Acronym: 

Name: Dr Andrew J. Davies
City: Bangor
E-mail: andrew.j.davies@bangor.ac.uk
Web site: http://www.bangor.ac.uk/oceansciences/index.php.en
Data format(s): Raster (.tif, geotiff)

Distribution format(s): Raster (.tif, geotiff)
Dataset size (uncompressed): 15.2 Gb

Webpage and/or download: http://doi.pangaea.de/10.1594/PANGAEA.775081

Other webpage: http://dx.doi.org/10.1371/journal.pone.0018483

Web map service: 

Factsheet: http://wcmc.io/cold-coral

Resolution, scale: 
Reference system: WGS 1984
West bounding: -180.0
East bounding: 180.0
South bounding: -80.0
North bounding: 60.0
Metadata standard: UNEP-WCMC Specific
Date of metadata: 29/01/2016
Global Distributions of Habitat Suitability for Cold-Water Octocorals (2012)

Description: This dataset contains the global distributions of habitat suitability for seven suborders of cold-water octocorals (Octocorallia) found deeper than 50 m: Alcyoniina, Calcaxonia, Holaxonia, Scleraxonia, Sessiliflorae, Stolonifera, and Subselliflorae. Octocorals are soft-corals that present a 8-fold symmetry. Although they are not reef-forming, they are often found in coral gardens/forests (i.e. single- or multi-species assemblages where the density of colonies on the seabed is very high). Distributions were derived from habitat suitability modelling. Suborder Sessiliflorae (illustrated here) was found to have the widest potential habitat range, but all records for all suborders implied a habitat preference for continental shelves and margins, particularly the North and West Atlantic and Western Pacific Rim. The study suggested that approximately 17% of oceans were suitable for at least one suborder. The research leading to these results received funding from the European Community’s Seventh Framework Programme, the International Union for Conservation of Nature (IUCN) and the Census of Marine Life.


Temporal range: 2012
Geographical range: Global
Supplementary information: All seven maps present a relative habitat suitability index ranging from 0 (unsuitable) to 100 (highly suitable).

The Ocean Data Viewer (and associated Web Map Service) shows suborder Sessiliflorae. The data pack on the Ocean Data Viewer contains 6 (low-resolution) rasters.

Purpose of creation: The logistical difficulties, expense and vast areas associated with deep-sea sampling leads to a gap in the knowledge of faunal distributions that is difficult to fill without predictive modelling. Three-quarters of Octocorallia species are found in deep waters, meaning that the global distribution and habitat requirements of these deep-sea octocorals are hence poorly understood. Habitat suitability modelling was used to extrapolate distributions and provide an understanding of ecological
requirements. This was the first global habitat suitability modelling study on the distribution of octocorals and forms a useful resource for researchers, managers and conservationists.

**Creation methodology:**
Maximum entropy modelling was used to predict octocoral distribution using a database of 12,508 geolocated octocoral specimens (covering the period 1869-2008) and 32 environmental grids resampled to 30 arc-sec. (approx. 1 sq-km) resolution. See Yesson et al. (2012) for full details.

**Version:**
1.0 (2012)

**Data lineage:**
Biogenic habitat

**Keywords:**
deep sea, model, high seas, benthic, marine, corals, biodiversity, habitat

**Similar datasets:** WCMC-001

**Limitations:**
Less than 3% of octocoral records were found in waters undersaturated for calcite, but this result is affected by a shallow-water sampling bias. More generally with model outputs, high habitat suitability does not imply confirmed presence on the ground.

**Maintenance frequency:**
Data are not being updated.

**Main access/use constraint:**
Creative Commons Attribution 3.0 Unported (CC BY 3.0). See http://creativecommons.org/licenses/by/3.0/ for details. Free to (1) copy/distribute/transmit the work, (2) adapt the work, and (3) make commercial use of the work.

**Other access/use constraints:**
To access the high-resolution rasters (30 arc-sec., approx. 1 sq-km) and/or the database of geolocated octocoral specimens (both restricted), contact chris.yesson@ioz.ac.uk.

**Contact organisation:**
Institute of Zoology, Zoological Society of London

**Organisation type:**
Owner

**Acronym:**
ZSL

**Name:**
Dr. Chris Yesson

**Position:**
Research Scientist

**City:**
London

**Country:**
United Kingdom

**E-mail:**
chris.yesson@ioz.ac.uk

**Web site:**
www.zsl.org

**Data format(s):**
Raster (.tif, geotiff)

**Distribution format(s):**
Raster (.tif, geotiff)

**Dataset size (uncompressed):**
13.6 Mb
Dataset ID: ZSL-001

Webpage and/or download: http://data.unep-wcmc.org/datasets/40
Other webpage: http://doi.pangaea.de/10.1594/PANGAEA.775081

Web map service: https://gis.unep-wcmc.org/arcgis/rest/services/marine/ZSL_001_ModelledOctocorals2012/MapServer

Factsheet: http://wcmc.io/cold-coral

Resolution, scale: 0.166 dd (10x10 arc-min.)  Reference system: WGS 1984
West bounding: -180.0  East bounding: 180.0
South bounding: -72.0  North bounding: 70.0
Metadata standard: UNEP-WCMC Specific  Date of metadata: 14/08/2015
**Modelled Spatial Distributions of Coralligenous and Maërl Habitats (2014)**

**Description:**
This dataset shows modelled spatial distributions of coralligenous outcrops and maërl beds across the Mediterranean Sea. These bioconstructions are typical Mediterranean underwater seascapes, comprising coralline algal frameworks that grow in dim light conditions. They are the result of the building activities of algal and animal constructors, counterbalanced by physical, as well as biological, eroding processes. Because of their extent, biodiversity and production, coralligenous and maërl habitats rank among the most important ecosystems in the Mediterranean Sea, and they are considered of great significance both for fisheries and carbon regulation.

**Citation(s):**

**Other cited reference(s):**

**Temporal range:** 2014

**Geographical range:** Mediterranean basin

**Supplementary information:**
The maps show the predicted occurrence probabilities for coralligenous outcrops and maër l beds: values 0 and 10 correspond to the lowest (blue colour) and highest (red colour) occurrence probabilities, respectively. Hence, the maps provide information about where the two habitats are most likely to occur.

**Projection used:** World Cylindrical Equal Area with datum WGS 1984.
The work was financed by the Commission of the European Union (Directorate General for Maritime Affairs, DG MARE) through the “Mediterranean Sensitive Habitats” (MEDISEH) project, within the MAREA framework (service contract SI2.600741). The European Commission is thankfully acknowledged. Some of the work was also financed through the projects Coconet (FP7, Grant agreement no: 287844) and the projects Prin 2010–2011 (MIUR) and RITMARE (MIUR). The authors would also like to express their gratitude to those who kindly shared their occurrence data on coralligenous outcrops and maërl beds, and without whose inputs this work would not have been possible (see Task 1.2 in Giannoulaki et al. 2013).

**Purpose of creation:**

Fine-scale knowledge on the distribution of sensitive habitats such as coralligenous outcrops and maërl beds is crucial for their effective management and conservation. Based on known occurrences of these habitats and a set of environmental predictors, modelling was carried out to produce the first continuous maps of these two habitats across the entire basin. The predictive maps can be fed into the development of basin-wide conservation plans (e.g. for establishing networks of marine protected areas) or other forms of marine spatial planning, and also in policy development.

**Creation methodology:**

Geo-referenced occurrence records for coralligenous outcrops and maërl beds across the Mediterranean basin were compiled as part of two international research projects (Mediseh and CoCoNET). Based on these occurrences and a starting set of 12 environmental variables, maximum entropy (Maxent) was used to model and predict occurrence probabilities. Please refer to Martin et al. (2014) for full details.

Requests to access the underlying occurrence datasets for coralligenous outcrops and maërl beds should be addressed in the first instance to Simonetta Fraschetti at the University of Salento, Italy (simona.fraschetti@unisalento.it).

**Version:** 2014

**Data lineage:** Earlier versions of the models were presented in Task 1.3 of Giannoulaki et al. (2013). The predictive maps published in Martin et al. (2014) are based on more extensive occurrence datasets and more finely-tuned models.

**Category:** Biogenic habitat

**Keywords:** marine, model, bioconstruction

**Similar datasets:**

Due to data limitations on species lists across the various component datasets, coralligenous outcrops and maërl beds were each modelled as a whole, instead of modelling multispecific assemblages with distinct habitat preferences.

Spatial management measures for fisheries that are aimed at protecting coralligenous outcrops and maërl beds, should not be based solely on the model outputs presented here; targeted groundtruthing should be carried out so that informed decisions are taken.
Dataset ID: Mediseh-001

Maintenance frequency: Data are updated in intervals that are uneven in duration.

Main access/use constraint: Creative Commons Attribution 3.0 Unported (CC BY 3.0). See http://creativecommons.org/licenses/by/3.0/ for details. Free to (1) copy/distribute/transmit the work, (2) adapt the work, and (3) make commercial use of the work.

Other access/use constraints:

Contact organisation: UN Environment World Conservation Monitoring Centre

Organisation type: Owner

Acronym: UNEP-WCMC

Name: Dr. Corinne Martin

Position: Programme Officer, Marine

City: Cambridge

Country: United Kingdom

E-mail: corinne.martin@unep-wcmc.org

Web site: www.unep-wcmc.org

Data format(s): Raster (ESRI Grid), Vector (polygon; .shp)

Distribution format(s): Raster (ESRI Grid)

Dataset size (uncompressed): 205 Mb (each)


Other webpage: http://www.nature.com/srep/2014/140527/srep05073/full/srep05073.html

Web map service:

Factsheet:

Resolution, scale: 0.004166 dd

Reference system: WGS 1984

West bounding: -6.6

East bounding: 43.0

South bounding: 29.4

North bounding: 47.3

Metadata standard: UNEP-WCMC Specific

Date of metadata: 30/07/2015
Global Distribution of Mangroves USGS (2011)

Description: This dataset shows the global distribution of mangrove forests, derived from earth observation satellite imagery.


Temporal range: 1997-2000

Geographical range: Global

Supplementary information: Attribute table: ISO 3166 3 character code of country (ISO3); surface area (AREA_KM2; in sq-km; calculated using Global Mollweide equal-area projection); surface area (AREA_M2; in sq-m; calculated using Global Mollweide equal-area projection).

Purpose of creation: The aim was to use a globally consistent and repeatable methodology, to produce a high-resolution dataset.

Creation methodology: The dataset was created using Global Land Survey (GLS) data and the Landsat archive. Approximately 1,000 Landsat scenes were interpreted using hybrid supervised and unsupervised digital image classification techniques. See Giri et al. (2011) for full details.

Version: 1.3 (June 2015)

Data lineage: Changes to this dataset include:
- Ver 1.1: Country codes (ISO3) added by UNEP-WCMC.
- Ver 1.2 (October 2013): Duplicate polygons were identified and removed, bringing the total number of polygons in the dataset down to 1,397,008. Additionally two areas of incorrect mangrove in New Zealand were removed (inland north of Lake Waikare; outside the mouth of Kaipara Harbour). Additionally, the areas of east and west Pacific were found to be shifted in version 1.1. As the shift was not uniform in direction or distance, they were moved in small batches of clusters, based on ArcGIS Online imagery and World Street Map. During final checks on the final dataset, it was found that mangrove data were absent from the Comoros, Mayotte,
the Seychelles and Bermuda: data from an earlier draft version of the dataset were hence incorporated for these areas.

- Ver. 1.3 (June 2015): Just under 10,000 extraneous features were deleted from Papua New Guinea, Belize City, the Jaffna Peninsula of Sri Lanka, and Eastern Java/Bali. Corrections were made to polygons in Peninsular Malaysia (101.3E, 3N; 101.75E, 2.6N; 102E, 2.44N), Northern Sumatra, Myanmar (94.3E, 18.7N), and Thailand (98.3E, 9N; 98.5E, 8N; 99.9E, 6.4N). Mangroves incorrectly lining the main streets of Abu Dhabi were also removed.

Category: Biogenic habitat

Keywords: coastal, blue carbon, remote sensing, satellite, USGS, mangrove, forest, habitat, ecosystem

Similar datasets: WCMC-011, WCMC-012

Limitations: Results were validated using existing distribution data and published literature. Note that small patches (< 900-2,700 sq-m) of mangrove forests cannot be identified using this approach. This methodological approach had a number of challenges, such as cloud cover and noise. There may also be areas where land cover was misclassified.

Known issues:
- As the dataset may still contain overlapping polygons, a dissolve operation (within a GIS) might be needed before surface area calculations are carried out.
- Satellite tile omissions were found in Thailand (coast adjacent to Ko Tarutao, southwest Thailand, and at 98.8E and 8.2N) and in Peninsular Malaysia (101E, 3.6N; 101.2E, 1.95N) when creating version 1.3;
- Missing data in Thailand (98.8 degrees East, 8.2 degrees North), which can be compared with the World Atlas of Mangroves (2010) dataset.
- Mangrove occurrence data adjacent to the Gahirmata Marine Sanctuary and north of Paradwip in India appear to be better in the World Atlas of Mangroves (2010) as the occurrence data in this dataset have too great an extent, particularly at the eastern end.
- Mangroves represented in the World Atlas of Mangroves (2010) dataset and other resources are not documented on Ko Tarutao (Thailand) or on Pulao Rupat Island (Northern Sumatra) in this dataset.
- Sharply defined gap in mangrove distribution on the Yucatan Peninsula (Mexico) at -90.3W and 21N, which is not present in the World Atlas of Mangroves (2010) dataset.

In addition to the present dataset (WCMC-010 (2011)), UNEP-WCMC distributes two other global mangrove data layers (WCMC-011 (2010), WCMC-012 (1997)). The two most recent datasets were both created using satellite imagery: WCMC-10 (2011) used a globally consistent methodology, whilst WCMC-011 (2010) also included observed data from various national/regional/international and other contributors.

Maintenance frequency: Corrections are made on an ad-hoc basis.

Main access/use constraint: UNEP-WCMC General Data Licence (excluding WDPA). See www.unep-wcmc.org/policies/general-data-license-excluding-wdpa#data_policy and
Global Spatiotemporal Database of Mangrove Forest Cover (2014) (CGMFC-21)

Description: Global mangrove deforestation continues but at a much reduced rate of between 0.16% and 0.39% per year. Southeast Asia is a region of concern with mangrove deforestation rates between 3.58% and 8.08%, this in a region containing half of the entire global mangrove forest inventory. The global mangrove deforestation pattern from 2000 to 2012 is one of decreasing rates of deforestation, with many nations essentially stable, with the exception of the largest mangrove-holding region of Southeast Asia.

We provide a standardized spatial dataset that monitors mangrove deforestation globally at high spatio-temporal resolutions. These data can be used to drive the mangrove research agenda, particularly as it pertains to monitoring of mangrove carbon stocks and the establishment of baseline local mangrove forest inventories required for payment for ecosystem service initiatives.


Temporal range: 2000-2012
Geographical range: Global
Supplementary information: For further information, please visit: http://faculty.salisbury.edu/~sehamilton/mangroves/.

Purpose of creation: To provide high-resolution local, regional, national and global estimates of annual mangrove forest area from 2000 through to 2012 with the goal of driving mangrove research questions pertaining to biodiversity, carbon stocks, climate change, functionality, food security, livelihoods, fisheries support and conservation that have been impeded until now by a lack of suitable data.

Creation methodology: We synthesized the Global Forest Change database, the Terrestrial Ecosystems of the World database and the Mangrove Forests of the World database to extract mangrove forest cover at high spatial and temporal resolutions. We then used the new database to monitor mangrove cover at global, national and protected area scales.

To test the representativeness and accuracy of the findings presented we utilized the only other approximately 0.00027777° measure of continuous forest cover available for one of the regions analysed. The USGS National Land Cover Dataset (NLCD) provides intermittent continuous tree-cover measures for the contiguous United States (Homer et al., 2012). From the 2011 NLCD data, we extracted the 2,037,420 pixels within Florida that are coincident with our 2011 mangrove data. We then converted the NLCD dataset into square metres and compared the two mangrove measures for Florida. Our dataset estimates 1341 km² of mangrove forest cover in Florida during 2011, whereas NLCD, combined with MFW, estimates 1391 km² of mangrove forest cover. The 3.6% difference between the two estimates of Florida mangrove increases confidence that the data presented here are an accurate and representative depiction of continuous mangrove cover that is comparable to other remote sensing-derived continuous forest datasets. Additionally, a portion of the 3.6% disagreement is probably due to slightly differing sensor acquisition dates during 2011.

Measures of potential error are provided in Appendix S1 in the Supporting Information and a comparison between continuous and binary measures of mangrove cover are provided in Appendix S2.
<table>
<thead>
<tr>
<th>Dataset ID: UniSal-001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name: Stuart E. Hamilton</td>
</tr>
<tr>
<td>Position:</td>
</tr>
<tr>
<td>City:</td>
</tr>
<tr>
<td>E-mail:</td>
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<td>Web site:</td>
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<td>Data format(s): File geodatabase (.fgdb), Raster (.tif, geotiff), Tabular (.xls, .csv, or .tab)</td>
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<td>Distribution format(s): File geodatabase (.fgdb), Raster (.tif, geotiff), Tabular (.xls, .csv, or .tab)</td>
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<tr>
<td>Dataset size uncompressed: 4.5 GB (FGDB); 9 TB (entire database)</td>
</tr>
<tr>
<td>Other webpage: <a href="http://faculty.salisbury.edu/~sehamilton/mangroves/">http://faculty.salisbury.edu/~sehamilton/mangroves/</a></td>
</tr>
<tr>
<td>Web map service:</td>
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<tr>
<td>Factsheet:</td>
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<tr>
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<tr>
<td>Metadata standard: UNEP-WCMC Specific</td>
</tr>
<tr>
<td>Date of metadata: 05/03/2019</td>
</tr>
</tbody>
</table>
World Atlas of Mangroves

Description: This dataset shows the global distribution of mangroves, and was produced as a joint initiative of the International Tropical Timber Organization (ITTO), International Society for Mangrove Ecosystems (ISME), Food and Agriculture Organization of the United Nations (FAO), UN Environment World Conservation Monitoring Centre (UNEP-WCMC), United Nations Educational, Scientific and Cultural Organization’s Man and the Biosphere Programme (UNESCO-MAB), United Nations University Institute for Water, Environment and Health (UNU-INWEH) and The Nature Conservancy (TNC). Major funding was provided by ITTO through a Japanese Government project grant; the project was implemented by ISME.


Temporal range: Mainly 1999-2003 (some earlier data for some countries)

Geographical range: Global

Supplementary information: Attribute table: Automatically generated number (OBJECTID); Unique ID distinguishing the data entry (LAYER_ID); Metadata ID linking to the source of the dataset, found in the associated metadata table (METADATA_ID); ISO 3166-3 character code of country or territory where the feature is located (PARENT_ISO and ISO3); ISO 3166-2 sub-national code(s) where the feature is located (SUB_LOC); English name of the feature as provided by the data provider (NAME); Name of the feature as provided by the data provider in original language (ORIG_NAME); Local definition of feature as provided by the data provider (LOC_DEF); Scientific (Latin) name(s) of family, genus and species (FAMILY, GENUS, SPECIES); Reported area in square kilometres (REP_AREA_KM2); Area calculated using GIS, in square kilometres (GIS_AREA_KM2); description of whether data have been obtained through remote sensing and/or field survey (DATA_TYPE); data gathering approach (SURVEY_MET); start and end date of data collection (of survey), supplied as text in the format YYYY-MM-DD (ISO date format) (START_DATE, END_DATE); character code that identifies accuracy of dates used in START_DATE and END_DATE to the nearest day(s), month(s), or year(s) (DATE_TYPE); binomial value indicating whether the feature occurs in an area protected by law or any other conservation measure, where ‘0’ = not within a protected area, ‘1’ = partially within a protected area;
area, and '2' = fully within a protected area (PROTECT); feature protected by law or by any other conservation measures (PROTECT_FEAT); measure that protects the feature (PROTECT_STAT); verification by government or expert (VERIF).

**Purpose of creation:**
This dataset was used in the World Atlas of Mangroves (Spalding et al. 2010); some statistics in the publication are not derived from the dataset (see annex 3, p. 288 for details of the data used).

**Creation methodology:**
The dataset was created mostly from satellite imagery processed at UNEP-WCMC or FAO. For a number of countries, existing (WCMC-012 (1997)) or newly available (vector) data were incorporated. The methodology is detailed in chapter 3 of Spalding et al. (2010), which is distributed with the dataset ("WCMC-011-AtlasMangrove2010-Methodology.pdf").

**Version:**
3.0 (June 2018)

**Data lineage:**
Version 3.0 (June 2018): Geographic attributions (ISO3 and Parent ISO3 codes) of points and polygons in the datasets have been matched to the World Vector Shoreline Plus and VLIZ World EEZ v10 geographic layers. This improves the accuracy of these datasets for national and regional studies. ISO3 codes need to be updated regularly due to codes becoming obsolete or EEZ boundaries being adjusted. Multipart points and polygons features were created to reduce the complexity of the attribute tables, merging those with identical attributes. This reduces the processing power required to handle the data while maintaining the level of detail required. The habitat datasets have been quality checked for obsolete ISO3 codes, overlapping claims identified and "Not Reported" consistently used for missing values rather than NA or blanks.

Version 2.0 (December 2017): Standardises the feature and metadata attributes using a new schema, which aligns the attributes used across the habitat datasets curated by UNEP-WCMC. The updated attribute schema is outlined in "Supplementary Information." Specific changes include the addition of information on level of protection (e.g. PROTECT, PROTECT_FEAT, PROTECT_STAT), indication of whether the data have received expert or government verification (VERIF), and information on the start and end dates of data collection (i.e. START_DATE, END_DATE). The new schema will be used to inform a set of quality indicators, assessing changes in data quality over time.

Version 1.1 (November 2016): follower user feedback, missing data from Myanmar was re-added to the dataset.

This dataset supersedes WCMC-012 (1997).

**Category:**
Biogenic habitat

**Keywords:**
coastal, blue carbon, remote sensing, satellite, mangrove, forest, habitat, ecosystem

**Similar datasets:**
WCMC-010, WCMC-012

**Limitations:**
Experts with detailed field knowledge were consulted for validating the maps. In some areas, there is an offset and/or mismatch in the position of the mangrove layer in relation to the coastline: this is probably caused by a number of factors, including varying data sources, differing scales to which the image interpretation
was conducted, differing sensor types, differing optical bands, etc. For some countries, the vectorization process produced many thousands of small polygons, which have not been dissolved and/or deleted. The dataset is distributed with a document providing region-specific data limitations ("WCMC-011-AtlasMangrove2010-MapReferences.pdf").

As the dataset may contain overlapping polygons, a dissolve operation (within a GIS) might be needed before surface area calculations are carried out.

In addition to the present dataset (WCMC-011 (2010)), UNEP-WCMC distributes two other global mangrove data layers (WCMC-010 (2011), WCMC-012 (1997)). The two most recent datasets were both created using satellite imagery: WCMC-10 (2011) used a globally consistent methodology, whilst WCMC-011 (2010) also included observed data from various national/regional/international and other contributors (meaning that source data and associated errors were not consistent across the dataset).

**Maintenance frequency:** Data are not being updated.

**Main access/use constraint:** UNEP-WCMC General Data Licence (excluding WDPA). See www.unep-wcmc.org/policies/general-data-license-excluding-wdpa#data_policy and www.unep-wcmc.org/policies. For commercial use, please contact business-support@unep-wcmc.org.

**Other access/use constraints:** Please also refer to the license file ("WCMC-011-AtlasMangrove2010-License.pdf") distributed with the dataset.

Please send any modification and revision of the dataset to the ISME Secretariat (Faculty of Agriculture, University of the Ryukyus, Senbaru 1, Nishihara, Okinawa 903-0129 Japan; isme@mangrove.or.jp).

For commercial use of the dataset, please contact business-support@unep-wcmc.org and isme@mangrove.or.jp.

**Contact organisation:** UN Environment World Conservation Monitoring Centre

**Organisation type:** Custodian  
**Acronym:** UNEP-WCMC

**Name:** Lauren Weatherdon  
**Position:** Senior Programme Officer

**City:** Cambridge  
**Country:** United Kingdom

**E-mail:** lauren.weatherdon@unep-wcmc.org

**Web site:** www.unep-wcmc.org

**Data format(s):** KML, Vector (polygon; .shp), WMS

**Distribution format(s):** KML, Vector (polygon; .shp), WMS

**Dataset size (uncompressed):** 911 MB
Dataset ID: WCMC-011
Webpage and/or download: http://data.unep-wcmc.org/datasets/5
Other webpage: http://www.arcgis.com/home/item.html?id=cb2d636f577047b7addcf8bf3e795f31

Factsheet: http://wcmc.io/mangroves
Resolution, scale: 1:1,000,000 Reference system: WGS 1984
West bounding: -175.3 East bounding: 180.0
South bounding: -38.9 North bounding: 42.7
Metadata standard: UNEP-WCMC Specific Date of metadata: 21/12/2017
Global Distribution of Modelled Mangrove Biomass (2014)

Description: This dataset shows the modelled global patterns of above-ground biomass of mangrove forests. The dataset was developed by the Department of Zoology, University of Cambridge, with support from The Nature Conservancy. The work is based on a review of 95 field studies on carbon storage and fluxes in mangroves world-wide. A climate-based model for potential mangrove above-ground biomass was developed, with almost four times the explanatory power of the only previous published model. The map highlights the high variability in mangrove above-ground biomass and indicates areas that could be prioritised for mangrove conservation and restoration.


Temporal range: 1977-2011
Geographical range: Global

Supplementary information: The underlying mangrove distribution map (vector) is taken from the World Mangrove Atlas (Spalding et al. 2010; WMC-011).

This dataset refers to above-ground forest biomass (in tonnes per hectare), rather than above-ground carbon. A calculation to convert forest biomass to carbon is provided in Hutchison et al. (2014), but this is based on limited data and is not site-specific.

Attribute table: polygon area (AREA; in km²); polygon centroid longitude (Centroid_x; in decimal degrees); polygon centroid latitude (Centroid_y; in decimal degrees); predicted mean mangrove biomass for a given mangrove polygon (BM_t_ha; in tonnes/ha); predicted total mangrove biomass for a given mangrove polygon (BM_polygon; in tonnes).

Some of the field names have been truncated by ArcGIS and are now unclear. These are:
- biomass_t1: total biomass for the polygon in tonnes, calculated by adding the biomass of all the underlying raster cells.
- biomass_t_: average biomass per unit area for the polygon in tonnes/ha.
calculated by dividing biomass_t1 by polygon area.

Distributed alongside the vector dataset is a global (30 arc-sec) raster version showing predicted mangrove above-ground biomass in tonnes/hectare. The raster version shows predicted values for all land areas of the world, regardless of whether mangroves are present or not, but is only applicable in mangrove areas. The raster gives predicted biomass rather than actual biomass: where mangroves have been cleared or degraded, the model will not account for this. Furthermore, the model does not account for small-scale spatial variation, such as zonation within a mangrove area. It is based on the bioclimatic variables from Bioclim (Hijmans et al., 2005), which, although given as 30 arc-sec grids, are highly interpolated from individual weather stations. As such, it is not recommend that the layer be used in fine scale analyses.

**Purpose of creation:**

The is the first ever global map of predicted mangrove above-ground biomass, revealing the spatial variation in mangrove biomass, and giving more precise estimates of global and national-level biomass totals. Previous assessments had all extrapolated from mean biomass values, missing this spatial variation.

**Creation methodology:**

The dataset was created using a linear model for mangrove above-ground biomass based on four climatic variables from the Biomclim dataset (Hijmans et al., 2005), and parameterised using field data gathered from a literature review. See Hutchison et al. (2014) and Supplementary Online Material for further details.

**Version:**

1.0 (2014)

**Data lineage:**

Category: Biogenic habitat

Keywords: coastal, blue carbon, biomass, mangrove, habitat, marine

**Similar datasets:** WCMC-010

**Limitations:**

The model used to generate this dataset predicts potential biomass rather than actual biomass. Where mangroves have been degraded, the model will not account for this.

The model does not account for small scale spatial variation, such as zonation within a mangrove area. It is based on the bioclimatic variables from Bioclim (Hijmans et al., 2005), which, although given as 30 arc-sec grids, are highly interpolated from individual weather stations. As such, it is not recommend that the layer be used in fine-scale analyses.

The model is only for above-ground biomass. Hutchison et al. (2014) gives an allometric equation to convert this to living root biomass, but other mangrove carbon stores (notably soil carbon) are not covered.

Some regions have large, multipart polygons. For example, all the mangroves of Colombia are grouped into a single polygon and therefore have a single value for total biomass and mean biomass per unit area. To see variation within these large polygons, it is possible to take data directly from the modelled raster layer (subject to the caveats mentioned about the scale at which the data can
Dataset ID: TNC-001

Maintenance frequency: Data are not being updated.


Other access/use constraints: None

Contact organisation: The Nature Conservancy

Organisation type: Resource provider

Acronym: TNC

Name: Mark Spalding

Position: Senior Marine Scientist

City: Cambridge

Country: United Kingdom

E-mail: mspalding@TNC.org

Web site: http://www.nature.org/

Data format(s): Raster (ESRI Grid), Vector (polygon; .shp)

Distribution format(s): Raster (ESRI Grid), Vector (polygon; .shp)

Dataset size (uncompressed): 1.15 Gb

Webpage and/or download: http://data.unep-wcmc.org/datasets/39

Other webpage: http://dx.doi.org/10.1111/conl.12060

Web map service: https://gis.unep-wcmc.org/arcgis/rest/services/marine/TNC_001_GlobalMangroveBiomass2014/MapServer

Factsheet: http://wcmc.io/mangroves

Resolution, scale: Not applicable

Reference system: WGS 1984

West bounding: -180.0

East bounding: 180.00

South bounding: -38.9

North bounding: 42.7

Metadata standard: UNEP-WCMC Specific

Date of metadata: 29/01/2016

Description: This dataset shows the global distribution of mangroves. It was compiled by UNEP World Conservation Monitoring Centre (UNEP-WCMC) in collaboration with the International Society for Mangrove Ecosystems (ISME).


Temporal range: 1960-1996
Geographical range: Global
Supplementary information: Attribute table: ISO 3166 3 character code of country (ISO3); data source type (DESCRIPTION); title of data source (TITLE), authors (AUTHORS); author function (AUTHOR_FUN); publishing place (PUB_PLACE); name of publisher (PUBLISHER); year of publication (YEAR); data source type (SOURCE); citation (CITATION); citation notes (CITATION_N); language of data source (LANGUAGE); polygon perimeter length (Shape_Leng; in m); polygon surface area (Shape_Area; in sq-m).

Purpose of creation: This dataset was developed to provide a baseline inventory of mangroves at the end of the 20th century. This dataset was the first significant attempt to provide an overview of the distribution of mangroves worldwide.

Creation methodology: This composite dataset was compiled from data at various scales (some quite coarse). Some data were digitised by hand from paper maps.

Version: 1.0
Data lineage: This dataset is superseded by WCMC-011 (2010).
Category: Biogenic habitat
Keywords: coastal, blue carbon, mangrove, forest, habitat, ecosystem

Similar datasets: WCMC-010, WCMC-011
Limitations: Data vary in scale and quality. The dataset can be used for national-level comparisons with more recent datasets (WCMC-010 (2011), WCMC-011 (2010)), keeping in mind that the latter were produced using drastically different methodologies. Global-scale comparisons should not be attempted.

As the dataset may contain overlapping polygons, a dissolve operation (within a GIS) might be needed before surface area calculations are carried out.

Maintenance frequency: Data are not being updated.


Other access/use constraints: None

Contact organisation: UN Environment World Conservation Monitoring Centre

Organisation type: Custodian
Acronym: UNEP-WCMC

Name: Lauren Weatherdon
Position: Senior Programme Officer
City: Cambridge
Country: United Kingdom
E-mail: lauren.weatherdon@unep-wcmc.org
Web site: www.unep-wcmc.org
Data format(s): Vector (polygon; .shp)
Distribution format(s): Vector (polygon; .shp)
Dataset size (uncompressed): 93.4 MB

Webpage and/or download: http://data.unep-wcmc.org/datasets/6

Other webpage: http://www.arcgis.com/home/item.html?id=20b7cc32b97442848d8b66904765d8e8
Web map service: http://downloads.wdpa.org/ArcGIS/rest/services/ocean_data_viewer/mangroves2/MapServer

Factsheet: http://wcmc.io/mangroves
Resolution, scale: 1:1,000,000
West bounding: -175.3
South bounding: -38.9
Metadata standard: UNEP-WCMC Specific
Reference system: WGS 1984
East bounding: 179.9
North bounding: 32.4
Date of metadata: 01/07/2015
Mangrove Tree Height in Africa (2013)

Description: This dataset shows the distribution and height in metres of mangrove forests derived from earth observing satellite imagery.


Temporal range: 2000 and 2007

Geographical range: Africa

Supplementary information: The goal of this project was to use a consistent and repeatable methodology to measure mangrove tree height at 90 m resolution.

Creation methodology: This data was created using Global Land Survey Landsat data from the 2000 timeframe to estimate mangrove extent and cover in Africa. We also used Shuttle Radar Topography Mission (SRTM) data calibrated by GLAS (Geoscience Laser Altimetry System) data.

Version: 1.0 (September 2012)

Data lineage: Category: Biogenic habitat

Keywords: coastal, blue carbon, remote sensing

Similar datasets: Results were validated using spaceborne Lidar from GLAS and in-situ field measurements. Patches smaller than 90*90m cannot be identified using this approach. Also overall height accuracy is of + or - 3 meters and it was not possible to measure height in areas shorter than 3 m.

Limitations: Data are not being updated.
Main access/use constraint:

Other access/use constraints:

Contact organisation:
NASA Goddard Space Flight Centre

Organisation type: Owner
Acronym: NASA

Name: Temilola Fatoyinbo
Position: Research Assistant
City: Greenbelt
Country: Maryland, USA
E-mail: lola.fatoyinbo@nasa.gov

Web site:

Data format(s): Raster (.tif, geotiff)
Distribution format(s): Raster (.tif, geotiff)
Dataset size (uncompressed): 3 GB

Webpage and/or download:
Contact marine@unep-wcmc.org

Other webpage: http://dx.doi.org/10.1080/01431161.2012.712224

Web map service:

Factsheet: http://wcmc.io/mangroves
Resolution, scale: 90m
Reference system: WGS 1984
West bounding: -24.3
East bounding: 80.4
South bounding: -90.1
North bounding: 78.2
Metadata standard: UNEP-WCMC Specific
Date of metadata: 09/11/2016
Global Distribution of Seagrasses

Description:
This dataset shows the global distribution of seagrasses, and is composed of two subsets of point and polygon occurrence data. The data were compiled by UNEP World Conservation Monitoring Centre in collaboration with many collaborators (e.g. Frederick Short of the University of New Hampshire), organisations (e.g. the OSPAR Convention for the Northeast Atlantic sea), and projects (e.g. the European project Mediterranean Sensitive Habitats "Mediseh"), across the globe (full list available in "Metadata_Seagrass.dbf").

Citation(s):

Other cited reference(s):


OSPAR Commission. (2015). OSPAR Threatened and/or Declining Habitats 2015. URL: http://www.ospar.org/work-areas/bdc/species-habitats/list-of-threatened-

Temporal range: 1934-2015

Geographical range: Global

Supplementary information:
- Attribute table: Automatically generated number (OBJECTID); Unique ID distinguishing the data entry (LAYER_ID); Metadata ID linking to the source of the dataset, found in the associated metadata table (METADATA_ID); ISO 3166-3 character code of country or territory where the feature is located (PARENT_ISO and ISO3); ISO 3166-2 sub-national code(s) where the feature is located (SUB_LOC); English name of the feature as provided by the data provider (NAME); Name of the feature as provided by the data provider in original language (ORIG_NAME); Local definition of feature as provided by the data provider (LOC_DEF); Scientific (Latin) name(s) of family, genus and species (FAMILY, GENUS, SPECIES); Reported area in square kilometres (REP_AREA_KM2); Area calculated using GIS, in square kilometres (GIS_AREA_KM2); description of whether data have been obtained through remote sensing and/or field survey (DATA_TYPE); data gathering approach (SURVEY_MET); start and end date of data collection (of survey), supplied as text in the format YYYY-MM-DD (ISO date format) (START_DATE, END_DATE); character code that identifies accuracy of dates used in START_DATE and END_DATE to the nearest day(s), month(s), or year(s) (DATE_TYPE); binomial value indicating whether the feature occurs in an area protected by law or any other conservation measure, where '0' = not within a protected area, '1' = partially within a protected area, and '2' = fully within a protected area (PROTECT); feature protected by law or by any other conservation measures (PROTECT_FEAT); measure that protects the feature (PROTECT_STAT); verification by government or expert (VERIF).

Purpose of creation: This dataset was originally developed alongside the publication by Green and Short (2003), and was the first authoritative and comprehensive global synthesis of the spatial distribution and status of seagrasses.

Creation methodology: This dataset was created from multiple sources (in 128 countries and territories), including maps (of varying scales), expert interpolation and point-based samples. Before inclusion in the dataset, occurrence records were reviewed using published reports, peer-reviewed literature and expert consultation.

Version: 6.0 (June 2018)

Data lineage: Version 6.0 (June 2018): Geographic attributions (ISO3 and Parent ISO3 codes) of points and polygons in the datasets have been matched to the World Vector Shoreline Plus and VLIZ World EEZ v10 geographic layers. This improves the accuracy of these datasets for national and regional studies. ISO3 codes need to be updated regularly due to codes becoming obsolete or EEZ boundaries being adjusted. Multipart points and polygons features were created to reduce the complexity of the attribute tables, merging those with identical attributes. This reduces the processing power required to handle the data while maintaining the level of detail required. The habitat datasets have been quality checked for obsolete ISO3 codes, overlapping claims identified and "Not Reported" consistently used for missing values rather than NA or blanks.

Version 5 (December 2017): Standardises the feature and metadata attributes.
using a new schema, which aligns the attributes used across the habitat datasets curated by UNEP-WCMC. The updated attribute schema is outlined in "Supplementary Information." Specific changes include the addition of information on level of protection (e.g. PROTECT, PROTECT_FEAT, PROTECT_STAT), indication of whether the data have received expert or government verification (VERIF), and information on the start and end dates of data collection (i.e. START_DATE, END_DATE). The new schema will be used to inform a set of quality indicators, assessing changes in data quality over time.

This dataset supersedes versions 3.0 and 4.0 of the seagrass dataset, which was an updated version of the dataset used in Green and Short (2003).

Version 4 (2016): The following changes were made to the dataset:
- Removed 69 polygons (approx. 708 sq km; ID #20) and replaced with better Corsican data (ID #491);
- Added 19,327 polygons (approx. 11,184 sq km) of Posidonia seagrass in Europe, from the MEDISEH project (ID #491);
- Added 6,681 polygons (approx. 421 sq km) of seagrass in British Columbia (ID #492);
- Added 9,211 polygons (approx. 1307 sq km) from OSPAR's 2015 habitat data (ID #495 - 519);
- Incorporated 1 polygon from Malta (58.95 sq km) (ID #493);
- Incorporated 1,533 seagrass occurrence data points (not Posidonia) from MEDISEH (ID #494); and
- Added 7,227 seagrass occurrence data points from OSPAR's 2015 habitat data (ID #520 - 573).

Total spatial changes reflected in the polygon feature class: Removed 708 square kilometres (69 polygons) and added 1,297,092 hectares / 12,970 sq km (35,416 polygons). The seagrass extent (after dissolve by ISO3) is 344,958 sq km. Total change in area between versions 3 and 4 (after dissolve by ISO3) is 7,950 sq km.

Total changes to the point dataset include the addition of 8,887 data points.

Version 3.0 (2015) incorporated over 16,600 square kilometres of seagrass occurrence data obtained in October 2013 from the Department of Commerce (DOC), National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), and Coastal Services Center (CSC) of the United States. Once dissolved, total seagrass extent in version 3.0 equates 314,173 sq km (184,814 polygons).

Category: Biogenic habitat
Keywords: coastal, marine, blue carbon, seagrass, habitat, biogenic, ecosystem

Similar datasets: WCMC-015, Mediseh-002

Limitations: Validation (of version 1) was also undertaken through a global seagrass workshop comprising experts from 23 countries.

As the dataset contains overlapping polygons, a dissolve operation (by ISO3) in GIS is required before surface area calculations are carried out.

Based on recent genetic and morphometric analysis, Halophilla johnsonii, Halophila
hawaiiana, Halophila ovata and Halophila minor are now considered to be morphological variations of, and therefore conspecific with, Halophila ovalis. Zostera mucronata, Zostera muelleri and Zostera novazelandica are now considered to be morphological variations of, and therefore conspecific with, Zostera capricorni.

Note that the older components of the dataset (particularly in version 1) are likely to have been fitted to the best shoreline data available at the time, i.e. ESRI's "Digital Chart of the World" and “MundoCart digital database (both derived from Operational Navigation Charts). As a result, there may be placement errors when mapped onto recent shoreline datasets (e.g. GSHHD, Open Street Map), e.g. Belize.

Maintenance frequency: Data are updated in intervals that are uneven in duration.


Other access/use constraints: In relation to the data provided by the Mediseh project (Bellusci et al. 2013; Telesca et al. 2015) for the Mediterranean basin, users must comply with article 11.10.3 of the Framework Contract with the European Commission, i.e. any re-distribution of these data:
1) requires prior written authorisation from the Commission (Directorate-General for Maritime Affairs and Fisheries, Brussels, Belgium),
2) shall mention the amount paid by the European Union (EUR 568,996).

Contact organisation: UN Environment World Conservation Monitoring Centre

Organisation type: Custodian

Acronym: UNEP-WCMC

Name: Lauren Weatherdon

Position: Senior Programme Officer

City: Cambridge

Country: United Kingdom

E-mail: lauren.weatherdon@unep-wcmc.org

Web site: www.unep-wcmc.org

Data format(s): KML, Vector (point; .shp), Vector (polygon; .shp), WMS

Distribution format(s): KML, Vector (point; .shp), Vector (polygon; .shp), WMS

Dataset size (uncompressed): 853 MB (polygons), 21 Mb (points)

Webpage and/or download: http://data.unep-wcmc.org/datasets/7
Dataset ID: WCMC-013-014

Other webpage: http://www.arcgis.com/home/item.html?id=36b176f90cd341429cbb1b9b1e9acee

Web map service: https://gis.unep-wcmc.org/arcgis/rest/services/marine/WCMC_013_014_Seagrass_WMS/MapServer

Factsheet: http://wcmc.io/seagrass

Resolution, scale: 1:1,000,000
West bounding: -176.6
South bounding: -46.9

Reference system: WGS 1984
East bounding: 178.6
North bounding: 70.0

Metadata standard: UNEP-WCMC Specific
Date of metadata: 08/12/2017
Description:
This dataset shows the modelled spatial distribution of Posidonia oceanica seagrass in the Mediterranean Sea. Posidonia oceanica is endemic to the Mediterranean Sea, where it is the dominant seagrass. It is found in sandy and rocky areas down to depths of about 45 m. P. oceanica is a protected species under European and international law, as well as several national legislations.

Citation(s):

Other cited reference(s):


Temporal range:
2013

Geographical range:
Mediterranean basin

Supplementary information:
The raw model output shows continuous occurrence probabilities (ranging from 0 to 1), with -1 denoting areas out of P. oceanica depth range. The model output is distributed as a polygon shapefile (Scardi et al. 2013) limited to the depth range of P. oceanica, and where the values 0 to 4 represent the following:

0 = Known absent (p = 0)
1 = Most probably absent (0.00001 < p < 0.27999)
2 = Possibly present \((0.28 < p < 0.49999)\)
3 = Most probably present \((0.5 < p < 0.99999)\)
4 = Known present \((p = 1)\).

with \(p\) being the probability of occurrence.

The work was financed by the Commission of the European Union (Directorate General for Maritime Affairs, DG MARE) through the “Mediterranean Sensitive Habitats” (MEDISEH) project, within the framework of MAREA (service contract SI2.600741). The European Commission is thankfully acknowledged. The authors would also like to express their gratitude to those who kindly shared their occurrence data on \(P.\) oceanica (see Task 1.1 in Giannoulaki et al. 2013), and without whom this work would not have been possible.

**Purpose of creation:**

While \(P.\) oceanica distribution is well documented along the European shores of the western Mediterranean Sea, limited information is available about the southern shore and the eastern Mediterranean Sea. In order to bridge this information gap, one of the goals of Task 1.3 of the “Mediterranean Sensitive Habitats” (MEDISEH) project was to model \(P.\) oceanica distribution across the whole Mediterranean basin, so as to predict their occurrence at poorly-sampled and un-sampled areas.

**Creation methodology:**

The model was built based on an (observed) \(P.\) oceanica occurrence dataset extracted from a Mediterranean-wide database curated by Andrea Belluscio (University of Rome, Italy) - see Telesca et al. (2015) for further details.

A Random Forest (i.e. a very effective Machine Learning technique) was trained on data from regions where information was available and then used to predict the probability of occurrence of \(P.\) oceanica where needed. Please refer to Scardi et al. (2013) for full details of the methodology used.

**Version:**

2013

**Data lineage:**

The maps show interim model outputs, which are likely to be improved with additional species occurrence data.

**Category:**

Biogenic habitat

**Keywords:**

coastal, marine, blue carbon, model

**Similar datasets:** WCMC-013-014

**Limitations:**

The data layers may be used (1) to guide cost-effective future survey efforts towards poorly sampled areas that are more likely to support these two habitats, (2) to inform marine spatial planning (including conservation planning), (3) to inform marine policy development, and (4) for initial screening as part of an environmental impact assessment. The data layer should not be used for spatial measures targeting fisheries, without prior groundtruthing.

**Maintenance frequency:**

Data are not being updated.

**Main access/use constraint:**

See 'Other access/use constraint(s)'.

Other access/use Please see 'Citation' for guidance.

Contact organisation: "Tor Vergata" University of Rome

Organisation type: Resource provider

Name: Dr. Michele Scardi
City: Rome
E-mail: mscardi@mclink.it
Web site: http://web.uniroma2.it
Data format(s): Vector (polygon; .shp)

Distribution format(s): Vector (polygon; .shp)

Dataset size (uncompressed): 11 Mb


Other webpage: http://mareaproject.net/contracts/5/reporting

Web map service:

Factsheet: http://wcmc.io/seagrass

Resolution, scale: 0.004166 dd
West bounding: -5.7
South bounding: 30.3

Reference system: WGS 1984
East bounding: 36.2
North bounding: 45.8

Metadata standard: UNEP-WCMC Specific

Date of metadata: 30/07/2015
Global Distribution of Saltmarsh

Description: This dataset displays the extent of our knowledge regarding the distribution of saltmarsh globally, drawing from occurrence data (surveyed and/or remotely sensed).


Temporal range: 1973 - 2015

Geographical range: Global

Supplementary information: Attribute table: Automatically generated number (OBJECTID); Unique ID distinguishing the data entry (LAYER_ID); Metadata ID linking to the source of the dataset, found in the associated metadata table (METADATA_ID); ISO 3166-3 character code of country or territory where the feature is located (PARENT_ISO and ISO3); ISO 3166-2 sub-national code(s) where the feature is located (SUB_LOC); English name of the feature as provided by the data provider (NAME); Name of the feature as provided by the data provider in original language (ORIG_NAME); Local definition of feature as provided by the data provider (LOC_DEF); Scientific (Latin) name(s) of family, genus and species (FAMILY, GENUS, SPECIES); Reported area in square kilometres (REP_AREA_KM2); Area calculated using GIS, in square kilometres (GIS_AREA_KM2); description of whether data have been obtained through remote sensing and/or field survey (DATA_TYPE); data gathering approach (SURVEY_MET); start and end date of data collection (of survey), supplied as text in the format YYYY-MM-DD (ISO date format) (START_DATE, END_DATE); character code that identifies accuracy of dates used in START_DATE and END_DATE to the nearest day(s), month(s), or year(s) (DATE_TYPE); binomial value indicating whether the feature occurs in an area protected by law or any other conservation measure, where '0' = not within a protected area, '1' = partially within a protected area, and '2' = fully within a protected area (PROTECT); feature protected by law or by any other conservation measures (PROTECT_FEAT); measure that protects the feature (PROTECT_STAT); verification by government or expert (VERIF).

Purpose of creation: This dataset was developed to provide a baseline inventory of the extent of our knowledge regarding the global distribution of saltmarshes, which are ecosystems.
located in the intertidal zone of sheltered marine and estuarine coastlines. These ecosystems comprise brackish, shallow water with salt-tolerant plants such as herbs, grasses and shrubs, and are commonly found at temperate and high latitudes. Saltmarshes are of ecological importance as they underpin the estuarine food web. In particular, saltmarshes serve as nesting, nursery and feeding grounds for numerous species of birds, fish, molluscs and crustaceans, including commercially important fish species such as herring (Clupea harengus), and are also home to a number of Endangered and Critically Endangered species.

For more information on saltmarshes, please visit http://www.biodiversityaz.org/content/saltmarsh.

Creation methodology:

The UN Environment World Conservation Monitoring Centre (UNEP-WCMC) collated and integrated saltmarsh occurrence datasets from 50 data providers globally (see "SOURCE_ID" in the metadata table), with support from Conservation International and The Nature Conservancy.

This composite dataset was sourced from peer-reviewed articles, reports, and databases created by non-governmental and governmental organisations, universities, research institutes, and independent researchers globally. Data sources are listed in the accompanying file, “WCMC027_Metadata_v4.dbf”, which can be linked to the layers using the unique metadata ID field (“METADATAID”). Where available, detailed descriptions of these datasets (e.g., time of data collection, source, resolution, and methods of processing) were documented in the dataset and accompanying metadata table.

Data were collected using remote sensing and field-based survey methods, with data quality ranging from high-resolution maps to low-resolution representations.

Version:

6.0 (June 2018)

Data lineage:

Version 6.0 (June 2018): Geographic attributions (ISO3 and Parent ISO3 codes) of points and polygons in the datasets have been matched to the World Vector Shoreline Plus and VLIZ World EEZ v10 geographic layers. This improves the accuracy of these datasets for national and regional studies. ISO3 codes need to be updated regularly due to codes becoming obsolete or EEZ boundaries being adjusted. Multipart points and polygons features were created to reduce the complexity of the attribute tables, merging those with identical attributes. This reduces the processing power required to handle the data while maintaining the level of detail required. The habitat datasets have been quality checked for obsolete ISO3 codes, overlapping claims identified and "Not Reported" consistently used for missing values rather than NA or blanks.

Version 5.0 (December 2017): Standardises the feature and metadata attributes using a new schema, which aligns the attributes used across the habitat datasets curated by UNEP-WCMC. The updated attribute schema is outlined in "Supplementary Information." Specific changes include the addition of information on level of protection (e.g. PROTECT, PROTECT_FEAT, PROTECT_STAT), indication of whether the data have received expert or government verification (VERIF), and information on the start and end dates of data collection (i.e. START_DATE, END_DATE). The new schema will be used to inform a set of quality indicators, assessing changes in data quality over time.
Version 4.0 (March 2017): Total global saltmarsh extent captured in the dataset equates 5,495,089 Ha (54,951 sq km; 350,985 polygons), collated from 50 data providers (e.g., governmental organisations, research institutes, universities, researchers). Spatial coverage is documented for 43 countries (polygon), with saltmarsh presence in an additional 56 countries documented in the point shapefile. Version 5 has updated the version 4 dataset to the new schema for attributes and metadata now used by the WCMC.

This dataset supersedes four previous versions, the first three of which were not published, and were used only under formally authorised agreements. A 2009 layer was collated by the The Nature Conservancy (version 1.0). This was incorporated into a subsequent version collated by UNEP-WCMC and Conservation International in 2013 (version 2.0). In version 3.0 of the dataset, 4,555,882 Ha (45,559 sq km) of saltmarsh globally were captured (326,040 polygons).

Category: Biogenic habitat

Keywords: coastal, blue carbon, saltmarsh, estuarine, habitat, ecosystem

Similar datasets: None

Limitations: This dataset is indicative of our current knowledge of the extent of saltmarshes globally based on the data obtained through the inventory, and is not intended to reflect a comprehensive assessment of saltmarsh presence and absence. The dataset is not suitable for temporal analyses of change. Please ensure that the time frames of data collection (noted within the dataset) are suitable for analytical purposes.

All spatial analyses should be conducted using the polygon layer distributed in this dataset. The point layer is included for reference purposes only, with useful information regarding wetlands of international importance designated under the Ramsar Convention and site-specific species information (linked to the accompanying Access database through the ‘LORECID’ field). Although mangrove data are not included in the dataset, mangrove habitat may be found in very close proximity to saltmarsh habitat in subtropical and tropical regions. The dataset may contain other habitat types such as freshwater marshes, mudflats and salt plains due to varying collection and mapping methodologies. Source-specific definitions of ‘saltmarsh,’ where available, are included in the accompanying “Metadata_Saltmarsh.dbf” table.

IMPORTANT: As the dataset contains overlapping polygons, a dissolve operation (within GIS) is required before calculating area of extent.

Maintenance frequency: Data are updated in intervals that are uneven in duration.

Dataset ID: WCMC-027

Other access/use constraints: None

Contact organisation: UN Environment World Conservation Monitoring Centre

Organisation type: Custodian

Acronym: UNEP-WCMC

Name: Lauren Weatherdon

Position: Senior Programme Officer

City: Cambridge

Country: United Kingdom

E-mail: lauren.weatherdon@unep-wcmc.org

Web site: www.unep-wcmc.org

Data format(s): Access database (.accdb), KML, Vector (point; .shp), Vector (polygon; .shp), WMS

Distribution format(s): Access database (.accdb), KML, Vector (point; .shp), Vector (polygon; .shp), WMS

Dataset size (uncompressed): 2.11 GB

Webpage and/or download: http://data.unep-wcmc.org/datasets/43

Other webpage: http://www.arcgis.com/home/item.html?id=5e53621170494edab5a1970ffa61a313

Web map service: https://gis.unep-wcmc.org/arcgis/rest/services/marine/WCMC_027_Saltmarsh_WMS/MapServer

Factsheet: http://wcmc.io/saltmarsh

Resolution, scale: Between 1:10,000 to 1:4,000

Reference system: WGS 1984

West bounding: -179.1

East bounding: 178.9

South bounding: -54.8

North bounding: 75.7

Metadata standard: UNEP-WCMC Specific

Date of metadata: 21/12/2017
Global Distribution of Sea Turtle Nesting Sites (1999)

Description: This dataset shows the known locations of sea turtle nesting sites, for all seven species: hawksbill turtle (Eretmochelys imbricata), Kemp’s ridley turtle (Lepidochelys kempii), leatherback turtle (Dermochelys coriacea), green turtle (Chelonia mydas), loggerhead turtle (Caretta caretta), olive ridley turtle (Lepidochelys olivacea), and flatback turtle (Natator depressus).


Temporal range: 1949-1993

Geographical range: Global

Supplementary information: This dataset is the only 'line' dataset of observed nesting occurrence. The 'State of the World’s Sea Turtles' (SWOT) database (http://seamap.env.duke.edu/dataset/545) is a more up to date alternative source on nesting site locations (point data).


Purpose of creation: At the time of compilation, the dataset was the only global source of sea turtle nesting sites.

Creation methodology: The dataset was compiled by UNEP World Conservation Monitoring Centre over a number of years. Information was obtained from published and unpublished sources (see "Turtle_sources.xlsx"), and through liaison with turtle fieldworkers.

Version: 1.1 (May 2015)

Data lineage: This version of the dataset (1.1) includes each species’ designated global threat status and year (IUCN Red List of Threatened Species, Version 2014.3), which were incorporated by UNEP-WCMC and released in May 2015. This dataset supersedes version 1.0, originally released in 1999.

Category: Species habitat
Keywords: coastal, marine, turtle, habitat, IUCN, threatened, habitat, nesting, UNEP-WCMC

Similar datasets: WCMC-006

Limitations: This legacy dataset is no longer being maintained and must be used with caution.

It was originally fitted to the best shoreline data available at the time (1999), i.e. ESRI's "Digital Chart of the World" and "MundoCart digital database" (both derived from Operational Navigation Charts). The dataset is known to show placement errors when mapped onto recent shoreline datasets (e.g. GSHHD, Open Street Map).

The global IUCN Red List threat status may differ at the regional-level.

Maintenance frequency: Data are not being updated.


Other access/use constraints: None

Contact organisation: UN Environment World Conservation Monitoring Centre

Organisation type: Owner

Name: Lauren Weatherdon
City: Cambridge
E-mail: lauren.weatherdon@unep-wcmc.org
Web site: www.unep-wcmc.org

Data format(s): Vector (polyline; .shp)

Distribution format(s): Vector (polyline; .shp)  Dataset size (uncompressed): 16 Mb

Webpage and/or download: http://data.unep-wcmc.org/datasets/22

Other webpage: http://www.arcgis.com/home/item.html?id=077d7f2343674a8cbb4cdf3a6816f022

Web map service: https://gis.unep-wcmc.org/arcgis/rest/services/marine/WCMC_007_TurtleNesting1999/MapServer

Factsheet: http://wcmc.io/turtle-nesting-site

Resolution, scale: Not applicable  Reference system: WGS 1984
West bounding: -175.1  East bounding: 180.0
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A Modelled Global Distribution of the Seagrass Biome

Description: Seagrasses form one of the most ecologically important and productive three-dimensional habitats in coastal seas. Knowing the global distribution of seagrass meadows is essential for conservation and blue carbon estimates.

This dataset represents a MaxEnt modelled map of habitat suitability for seagrasses globally. Species occurrence records were extracted from the Global Biodiversity Information Facility (GBIF), United Nations Environment Programme-World Conservation Monitoring Centre (UNEP-WCMC) Ocean Data Viewer and Ocean biogeographic information system (OBIS).

The dataset predicts that the seagrass biome may occupy 1,646,788 square kilometres globally, more than double previous global estimates.

Citation(s): Jayathilake D.R.M., Costello M.J. (2018.) A modelled global distribution of the seagrass biome. Biological Conservation 226: 120-126. doi: https://doi.org/10.1016/j.biocon.2018.07.009

Temporal range: 1900 - 2017

Geographical range: Global

Supplementary information: See Jayathilake and Costello (2018) for a full description of the dataset creation.

Existing seagrass distribution datasets are known to have spatial gaps in knowledge. For instance, the north-east Pacific, the coastal area of Scandinavia and the Northern African coast are currently characterised by point occurrence records, yet extensive meadows are known to occur in these locations. Point occurrence datasets cannot be used in area surface calculations as they do not indicate the spatial extent of seagrass beds. In the absence of in-situ mapping of seagrass extent at a global scale, existing occurrence data can be used in species distribution models to map the potential biome in unsurveyed areas, and indeed some regional attempts have been made.

This polygon layer is a result of a MaxEnt model of the global distribution of seagrass using all available point records.

Creation methodology: Species occurrence records were extracted from the Global Biodiversity Information Facility, United Nations Environment Programme-World Conservation Monitoring Centre Ocean Data Viewer and Ocean biogeographic information system.
Facility (GBIF; www.gbif.org), UN Environment World Conservation Monitoring Centre's (UNEP-WCMC's) Ocean Data Viewer (http://data.unep-wcmc.org, and IOC-UNESCO's Ocean Biogeographic Information System (OBIS; www.iobis.org). After data cleaning, 39,045 occurrence records (combining all seagrass species) were used in species distribution model. 13 environmental variables from Global Marine Environment Datasets (GMED) were interpolated into 30 arc seconds resolution (1 km at the equator) and used in species distribution models. MaxEnt models were generated using 10 cross-validate replicate runs with parameters: convergence threshold = 10^-5, regularization multiplier = 1, maximum number of background points = 10,000 and maximum iterations = 1000.

The methodology is fully described in the paper Jayathilake and Costello (2018).

Version: 1.0 (2018)

Data lineage: Seagrass distribution data were extracted from the Global Biodiversity Information Facility (GBIF, 2017), Ocean Biogeographic Information System (OBIS, 2017), and UNEP-WCMC and Short (2016) (a superseded version of WCMC-013-014).

Category: Species habitat

Keywords: marine, ocean, seagrass, biome, habitat, MaxEnt

Similar datasets: WCMC-013-014, WCMC-015

Limitations: The spatial resolution of the map is plus or minus 1 km (30 arc second). The predicted extent is based on past data records and environmental distribution modelling. The present distribution at local scales would need confirmation from field observations.

The methods to create this layer should be repeated as more primary data become available, especially on the western coast of South American, Africa, Indian Ocean and Indo-Pacific region. Furthermore, the map only indicates the potential distribution and whether seagrass still occurs in these areas should be validated using more recent distribution data. Thus the map represents the potential geographic extent of seagrass should other variables (e.g. human impacts due to dredging or sediment runoff) not be limiting its occurrence.

Maintenance frequency: Data are not being updated.

Main access/use constraint: Creative Commons Attribution 4.0 Unported (CC BY 4.0). See https://creativecommons.org/licenses/by/4.0/ for details. Free to (1) copy and redistribute the material in any medium or format, (2) remix, transform, and build upon the material for any purpose, even commercially. You must give appropriate credit, provide a link to the license, and indicate if changes were made. You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use. You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits.

Other access/use constraints: None.
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<td>Contact organisation:</td>
</tr>
<tr>
<td>Institute of Marine Science, University of Auckland, Auckland</td>
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<table>
<thead>
<tr>
<th>Name:</th>
<th>M. Costello; D. Jayathilake</th>
<th>Position:</th>
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Global Distribution of Sea Turtle Feeding Sites (1999)

Description: This dataset shows the known locations of sea turtle feeding sites, for five of the seven species: hawksbill turtle (Eretmochelys imbricata), leatherback turtle (Dermochelys coriacea), green turtle (Chelonia mydas), loggerhead turtle (Caretta caretta), and olive ridley turtle (Lepidochelys olivacea).


Temporal range: 1993

Geographical range: Global

Supplementary information: Please note that the illustrative map contains overlapping polygons.


Purpose of creation: The dataset is the only global source of sea turtle feeding sites.

Creation methodology: The dataset was compiled by UNEP World Conservation Monitoring Centre over a number of years. Information was obtained from published and unpublished sources (see "Turtle_sources.xlsx"), and through liaison with turtle fieldworkers.

Version: 1.1 (May 2015)

Data lineage: This version of the dataset (1.1) includes each species' designated global threat status and year (IUCN Red List of Threatened Species, Version 2014.3), which were incorporated by UNEP-WCMC and released in May 2015. This dataset supersedes version 1.0, originally released in 1999.

Category: Species habitat

Keywords: coastal, marine, turtle, habitat, IUCN, threatened, habitat, feeding, UNEP-WCMC

Similar datasets: WCMC-007
Limitations: This legacy dataset is no longer being maintained and must be used with caution.

As the dataset contains overlapping polygons, a dissolve operation (within a GIS) might be needed before surface area calculations are carried out.

The global IUCN Red List threat status may differ at the regional-level.

Maintenance frequency: Data are not being updated.


Other access/use constraints: None

Contact organisation: UN Environment World Conservation Monitoring Centre

Organisation type: Owner

Acronym: UNEP-WCMC

Name: Lauren Weatherdon

Position: Senior Programme Officer

City: Cambridge

Country: United Kingdom

E-mail: lauren.weatherdon@unep-wcmc.org

Web site: www.unep-wcmc.org

Data format(s): Vector (polygon; .shp)

Distribution format(s): Vector (polygon; .shp)

Dataset size (uncompressed): 3 Mb

Webpage and/or download: http://data.unep-wcmc.org/datasets/21

Other webpage: http://www.arcgis.com/home/item.html?id=5857609a6cda4e8cb331adabb3a6f18f

Web map service: https://gis.unep-wcmc.org/arcgis/rest/services/marine/WCMC_006_TurtleFeeding1999/MapServer

Factsheet:

Resolution, scale: Not applicable

Reference system: WGS 1984

West bounding: -175.4

East bounding: 180.0

South bounding: -35.3

North bounding: 27.4

Metadata standard: UNEP-WCMC Specific

Date of metadata: 17/08/2015
Migratory Connectivity in the Ocean (MiCo)

Description: MiCO, Migratory Connectivity in the Ocean, is developing a system that aggregates and generates actionable knowledge to support worldwide conservation efforts for numerous migratory species and the oceans on which they depend.

MiCO is an invaluable knowledge discovery tool for informing conservation and sustainable use efforts for migratory species, fueled by information shared by our growing network of contributors. As such, MiCO has two main audiences: knowledge consumers and knowledge producers.

Citation(s): The following two references must be included in any publication, product, or commercial application that made use of MiCO products (“Nodes”, “Corridors”, or summary statistics):


Temporal range: Unknown
Geographical range: Global
Supplementary information: None.
Purpose of creation: Advancements in animal tracking technology are enabling far greater data collection on migration patterns than ever before.

These data continue to broaden our understanding of the connectivity generated by migratory marine species—the critical habitats they depend on throughout their
life cycles, and the pathways between them.

However, while the amount of data continues to grow exponentially, efforts to synthesize and provide access to information on migratory connectivity for management and policy has lagged behind. By transforming these data into actionable knowledge, it can more effectively be incorporated into international management and policy frameworks to aid in the conservation and sustainable use of migratory species.

Migratory Connectivity in the Ocean (MiCO) is a consortium developing an extensive open-access system with the end goal of connecting global processes with actionable knowledge on migratory connectivity to inform worldwide conservation and sustainable use efforts.

Creation methodology: More information on MiCo can be found in the following brochure: https://duke.box.com/shared/static/t1dc2l9yrpsrl022vn9bwnbwcqfu0t.pdf.

Version: N/A

Data lineage:

Category: Species distribution

Keywords: Connectivity, migratory species, marine mammals, birds

Similar datasets: BirdLife-002

Limitations: Not reported.

Maintenance frequency: Data are updated in intervals that are uneven in duration.

Main access/use constraint: See 'Other access/use constraint(s)'.

Other access/use constraints: For full terms of use, please visit: https://mico.eco/terms/. For terms of reference for data providers to MiCo, please visit: https://mico.eco/terms-of-reference/.

Contact organisation: Marine Geospatial Ecology Lab, Duke University

Organisation type: Custodian

Acronym: MICO

Name:

City: info@mico.eco

E-mail: https://mico.eco/

Web site: Data format(s): Online database, Online maps, Vector (polygon; .shp)

Distribution format(s): Online database, Online maps

Dataset size (uncompressed): Not reported

Dataset ID: Duke-001

Webpage and/or download: https://mico.eco/
Other webpage:
Web map service:

Factsheet:
Resolution, scale: Unknown  
Reference system: Not applicable
West bounding: -180.0  
East bounding: 180.0
South bounding: -60.0  
North bounding: 60.0
Metadata standard: UNEP-WCMC Specific  
Date of metadata: 03/03/2019
Movebank

Description: As of January 2019, the Repository contains 117 curated, publicly archived datasets containing over 56 million locations describing movements of 5,119 animals and representing 106 species. These data underlie 177 peer-reviewed papers published in 67 journals by over 400 data authors.

Citation(s): If you refer to data from the Movebank Data Repository in a publication, you should always cite the published dataset, including the associated DOI or DOIs, and any publications that describe the data in the dataset. If you are referring to only one file within a data package, then you should cite the component DOI for that file; otherwise you should cite the DOI for the data package. In addition, we request that you cite Movebank or mention in the text that the data were accessed through the Movebank Data Repository (this helps us to show current and potential funding organizations why Movebank is important).

Temporal range: Variable
Geographical range: Global
Supplementary information: None.
Purpose of creation: The Movebank Data Repository is a special part of Movebank designed for long-term data archiving. The Repository is hosted at the Library of the University of Konstanz and complements Movebank’s flexible tools for sharing, managing, and analyzing animal movement data throughout all stages of research by providing a way to formally publish completed research datasets. The data in Movebank are unique observations of animal movements that can never be reproduced—our goal is to make sure these datasets will be available to answer new questions decades from now.

Collecting animal tracking data takes enormous time, effort, and funding, and also impacts the animals who carry tracking tags. We believe that these data provide invaluable records about nature and should be preserved for future generations. These studies are often taxpayer-funded; however, after a paper about the study is published, these data are often privately stored and never used again. Archiving these data and making them accessible provides public access to these data and allows the data to be used again to address new questions. In addition, publishing datasets in the Movebank format facilitates combining multiple datasets, for example to do comparative analyses or to increase sample sizes, and allows them...
to be analyzed using tools developed for working with Movebank-format data.

The main goals of Movebank are to:
- archive animal movement data for future use, as controlled by the data owners.
- enable collaborations between researchers, students, conservation organizations and governments who are interested in animal movement.
- help scientists address new questions by combining data sets from separate studies to test ideas related to ecological patterns, evolutionary processes and disease spread.
- promote open access to animal movement data collected by researchers, in particular when the data collection is publicly funded.
- allow the public to explore the amazing animal movements recorded by animal trackers.

Creation methodology: The database is designed for datasets that include multiple locations of individual animals, commonly referred to as tracking data. It also supports data collected by other bio-logging sensors attached to animals as well as information about animals, tags and deployments. Movebank has grown dramatically since its inception, due to both growth in the number of users and changes in technology that allow the collection of increasingly high-resolution data.

Version: The Movebank project started in 2007 and was designed to help researchers effectively use their collected animal movement data and to support permanent public archiving of these data.

Data lineage: The Movebank project started in 2007 and was designed to help researchers effectively use their collected animal movement data and to support permanent public archiving of these data.

Category: Species distribution

Keywords: Migratory species, biogeography, distribution

Similar datasets: Duke-001

Limitations: To be published in the Movebank Data Repository, a dataset in Movebank undergoes an official review process and, when accepted, is granted a unique identifier (DOI) and license and is made publicly available.

The Movebank Data Repository includes .csv files of animal movement data that have been imported into Movebank and are thus in the Movebank data format, along with associated data files that may include raw data files, reference data, and additional descriptive information. The repository consists primarily of datasets that are described in peer-reviewed journal articles. We will consider the publication of other datasets on a case-by-case basis.

Maintenance frequency: Data are updated in intervals that are uneven in duration.

Main access/use constraint: Creative Commons Attribution 3.0 Unported (CC BY 3.0). See http://creativecommons.org/licenses/by/3.0/ for details. Free to (1) copy/distribute/transmit the work, (2) adapt the work, and (3) make commercial use of the work.
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This disclaimer shall be regarded as part of the website from which reference to this page is made. Should parts of the text or any wording therein not, not fully, or no longer comply with applicable law, this shall not affect the validity or the content of the remaining parts of the document.

Contact organisation: Max Planck Institute for Ornithology

Organisation type: Resource provider

Acronym: Movebank Data Curator

Name: Movebank Data Curator

Position: Movebank Data Curator

City: Country:

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Global Biodiversity Information Facility (GBIF)

Description: GBIF—the Global Biodiversity Information Facility—is an international network and research infrastructure funded by the world’s governments and aimed at providing anyone, anywhere, open access to data about all types of life on Earth.

Coordinated through its Secretariat in Copenhagen, the GBIF network of participating countries and organizations, working through participant nodes, provides data-holding institutions around the world with common standards and open-source tools that enable them to share information about where and when species have been recorded. This knowledge derives from many sources, including everything from museum specimens collected in the 18th and 19th century to geotagged smartphone photos shared by amateur naturalists in recent days and weeks.

Citation(s):
Citing the GBIF website:

Citing data downloads:
Please use the citation referred to in the confirmation email received once the dataset has been downloaded.

Citing individual datasets:
Please use the citation associated with that dataset.

For full citation guidelines, please visit: https://www.gbif.org/citation-guidelines.

Temporal range: Variable
Geographical range: Global
Supplementary information: The OECD panel specifically recommended the establishment of a Global Biodiversity Information Facility, to:

“enable users to navigate and put to use vast quantities of biodiversity information, advancing scientific research ... serving the economic and quality-of-life interests of society, and providing a basis from which our knowledge of the natural world can...
grow rapidly and in a manner that avoids duplication of effort and expenditure.”

**Creation methodology:**

The GBIF network draws all these sources together through the use of the Darwin Core standard, which forms the basis of GBIF.org’s index of hundreds of millions of species occurrence records. Publishers provide open access to their datasets using machine-readable Creative Commons licence designations, allowing scientists, researchers and others to apply the data in hundreds of peer-reviewed publications and policy papers each year. Many of these analyses—which cover topics from the impacts of climate change and the spread of invasive and alien pests to priorities for conservation and protected areas, food security and human health—would not be possible without this.

**Version:** 2017

**Data lineage:** GBIF arose from a 1999 recommendation by the Biodiversity Informatics Subgroup of the Organization for Economic Cooperation and Development’s Megascience Forum. This report concluded that “An international mechanism is needed to make biodiversity data and information accessible worldwide”, arguing that this mechanism could produce many economic and social benefits and enable sustainable development by providing sound scientific evidence.

**Category:** Species distribution

**Keywords:** Taxonomy, biogeography, global

**Similar datasets:** OBIS-003

**Limitations:** GBIF does not guarantee the accuracy of the biodiversity data served through GBIF.org and web services. Use of data accessed through the portal and web services is at the user’s own risk.

To share data through GBIF.org, publishers typically have to collate or transform existing datasets into a standardized format. This work may include additional processing, content editing and mapping a dataset’s content into one of the available data transfer formats, as well as publication through one of the available data publishing tools, such as GBIF’s free, open-source Integrated Publishing Toolkit or IPT.

Once published, GBIF’s real-time infrastructure ‘indexes’ or ‘harvests’ new datasets, integrating them into a common access system where users can retrieve any and all data through common search and download services. As datasets are indexed, GBIF.org performs additional checks, interpretation and conversion routines to ensure that data are interoperable and comply with minimum standards of data formats, data quality and fitness for use. Many criteria for quality and usability of data, however, are best and most easily handled when addressed at their source: the individual dataset.

For more information regarding data quality, please visit: https://www.gbif.org/data-quality-requirements. For more information regarding standards used by GBIF—including Darwin Core, Ecological Metadata Language (EML), and BioCASe—please visit: https://www.gbif.org/standards.
Maintenance frequency: Data are repeatedly and frequently updated.

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Other access/use constraints: Data accessed through the GBIF network is free for all—but not free of obligations. Under the terms of the GBIF data user agreement (https://www.gbif.org/terms/data-user), users who download individual datasets or search results and use them in research or policy agree to cite them using a DOI, or Digital Object Identifier.

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- CC BY-NC, under which data are made available for any use provided that attribution is appropriately given and provided the use is not for commercial purposes

For more information regarding terms of use, please visit: https://www.gbif.org/terms.

Contact organisation: Global Biodiversity Information Facility

Organisation type: Resource provider
Acronym: GBIF

Name:
City: Copenhagen
Position:
Country: Denmark
E-mail: info@gbif.org
Web site: www.gbif.org
Data format(s): Online database, Online maps

Distribution format(s): API, Online database, Online maps, Tabular (.xls, .csv, or .tab)
Dataset size (uncompressed): Variable

Webpage and/or download: http://www.gbif.org
Other webpage:
Web map service:

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Ocean Biogeographic Information System (OBIS)

Description: The Ocean Biogeographic Information System (OBIS; www.iobis.org) aims to build and maintain a global alliance that collaborates with scientific communities to facilitate free and open access to, and application of, biodiversity and biogeographic data and information on marine life. Currently, OBIS offers over 43 million records found in more than 1,800 datasets.

There are also regional and thematic OBIS nodes throughout the world, including the Mediterranean, the Black Sea, Malaysia, South Korea, Japan, the Indian Ocean, the Caribbean, Canada, Australia, Argentina, and the Arctic, among other locations. For more information, please see: http://www.iobis.org/community/.

Citation(s): To cite data retrieved from OBIS: [Dataset citation available from metadata] [Data provider details] [Dataset] (Available: Ocean Biogeographic Information System. Intergovernmental Oceanographic Commission of UNESCO. http://www.iobis.org. Accessed: YYYY-MM-DD).

When data represents a subset of many datasets taken from the integrated OBIS database, you can, in addition to cite the individual datasets (and taking into account the restrictions set at each dataset level), also cite the OBIS database as follows: OBIS [year] [Data e.g. Distribution records of Eledone cirrhosa (Lamarck, 1798)] [Dataset] (Available: Ocean Biogeographic Information System. Intergovernmental Oceanographic Commission of UNESCO. http://www.iobis.org. Accessed: YYYY-MM-DD).

The derived information products from OBIS are published under the CC-0 license (https://creativecommons.org/about/cc0) and can be cited as follows: OBIS [year] [Information product e.g. Global map showing the Hulbert index in a gridded view of hexagonal cells] [Map] (Available: Ocean Biogeographic Information System. Intergovernmental Oceanographic Commission of UNESCO. http://www.iobis.org. Accessed: YYYY-MM-DD).

Dataset ID: OBIS-003


Temporal range: Variable
Geographical range: Global

Supplementary information:

Purpose of creation: OBIS was established as a project of the Census of Marine Life (CoML) to help facilitate global enfranchisement of data within the scientific community. The goal of OBIS was simple: to create "an online, user-friendly system for absorbing, integrating, and accessing data about life in the oceans" (Grassle 2000). The system intends to stimulate taxonomic and systematic research and generate new hypotheses concerning evolutionary processes, factors related to maintenance of species distributions, and roles of marine organisms in marine ecosystem function (Grassle 2000).

Creation methodology: For the last decade, the OBIS community has worked to ensure that all data contributed to OBIS from hundreds of providers are available to the public through the search interface.

OBIS provides a portal or gateway to many datasets containing information on where and when marine species have been recorded. The datasets are integrated so that they may be searched seamlessly by species name, higher taxonomic level, geographic area, depth, and time. These may then be mapped with environmental data related to these locations.

Version:
Data lineage:

Category: Species distribution
Keywords: marine, coastal, pelagic, benthic, high seas, deep sea, biogeography, taxonomy

Similar datasets: FishBase-001, SLBase-001, CoL-001

Limitations: Appropriate caution is necessary in the interpretation of results derived from OBIS. Users must recognize that the analysis and interpretation of data require background knowledge and expertise about marine biodiversity (including ecosystems and taxonomy). Users should be aware of possible errors, including in the use of species names, geo-referencing, data handling, and mapping. They should crosscheck their results for possible errors, and qualify their interpretation of any results accordingly.

Unless data are collected through activities funded by IOC/IODE, neither UNESCO, IOC, IODE, the OBIS Secretariat, nor its employees or contractors, own the data in OBIS and they take no responsibility for the quality of data or products based on OBIS, or the use or misuse.

For more information regarding quality control: http://www.iobis.org/node/47.

Data are updated a few times per year.


OBIS Secretariat, Intergovernmental Oceanographic Commission (UNESCO)

Organisation type: Custodian
Acronym: OBIS, IOC

Name: Mr Ward Appeltans
Position: Project Manager
City: Oostende
Country: Belgium
E-mail: w.appeltans@unesco.org
Web site: www.iobis.org
Data format(s): Online database
Distribution format(s): Online database
Dataset size (uncompressed): Variable

Webpage and/or download: http://www.iobis.org
Other webpage:
Web map service:

Factsheet:
Resolution, scale: 
Reference system: Not applicable
West bounding: -180.0
East bounding: 180.0
South bounding: -90.0
North bounding: 90.0
Metadata standard: UNEP-WCMC Specific
Date of metadata: 17/08/2015
Description: OBIS-SEAMAP (Ocean Biogeographic Information System Spatial Ecological Analysis of Megavertebrate Populations), is a spatially referenced online database, aggregating marine mammal, seabird, sea turtle and ray and shark observation data from across the globe.

OBIS is one of the projects of Census of Marine Life.

Citation(s): Citation for OBIS-SEAMAP:

Example citation for a dataset (Dataset ID: 1201):

Temporal range: Variable
Geographical range: Global
Supplementary information: None.
Purpose of creation:
OBIS-SEAMAP is aimed at augmenting our understanding of the distribution and the ecology of marine mammals, seabirds, sea turtles and rays and sharks by the following approaches:

- Quantify the global patterns of marine species distribution and biodiversity;
- Design and implement standard databases and innovative sampling techniques;
- Emphasize time series / comparative studies;
- Facilitate study of status and impacts on threatened species;
- Enhance ability to test hypotheses about biogeographic and biodiversity models; and
- Support modeling of shifting species distributions in response to environmental change.

Creation methodology:

The observation data held by OBIS-SEAMAP are collected from various data providers worldwide. They are registered into the OBIS-SEAMAP database and presented on the web site upon data providers’ permission. The ownership of the data belongs to the data providers.

The front page of the OBIS-SEAMAP web site provides convenient tools to explore the data.

The [Browse Datasets] button on the front page allows you to quickly browse datasets by data provider. Alternatively, you can see a list of providers by clicking [Browse Contributors] button. A selection of a provider in the grid visualizes the data provided by provider on the map above. The i icon forwards you to the provider’s information page. If you prefer a more static list of providers, go to Contributor list page.

The [Browse Species] button shows the taxonomic tree that OBIS-SEAMAP holds data for. You can select a taxon at any rank (e.g. Mysticeti of the family rank or Megaptera novaangliae of the species rank) to visualize the data of the taxon. If you explore more for the taxon, click the link on the scientific name.

If you would like to explore data across multiple datasets or species at a region of interest, visit Advanced Search where you can set variety of criteria to extract the data. Once you set up you criteria and visualizing settings, you can start the download processes. Those data under CC-BY, CC-BY-NC or public domain can be downloaded immediately.

Version: Updated regularly
Data lineage: Not reported.
Category: Species distribution
Keywords: Marine megavertebrates, biogeography, OBIS

Similar datasets: Duke-001
Limitations: OBIS-SEAMAP requires that all data be searchable by taxon name and by geographic coordinates.

The minimum data requirements for a record are the “what”, “where” and “when” of an observation:

- What=SPECIES IDENTIFICATION: A scientific name (Genus species) is preferred, however data at higher taxonomic levels, such as genus, family or order is also allowable. If you record species codes, please provide a key.
- Where=LOCATION: The latitude/longitude coordinates of the observation. The coordinates can be in decimal degrees or degrees/minutes/seconds. Positive values for negative latitudes and longitudes are acceptable as long as they are labeled with the correct N/S, E/W designation. Other formats are also acceptable as OBIS-SEAMAP converts them during data processing. Because the accuracy of the geographical position of different records may differ, information on the spatial resolution will be included in the metadata.
- When=DATE/TIME: The date and time of the observation should be provided. Almost any format is acceptable.

**Maintenance frequency:** Data are updated in intervals that are uneven in duration.

**Main access/use constraint:** See 'Other access/use constraint(s)'.

**Other access/use constraints:** The use of the data is subject to the OBIS-SEAMAP Terms of Use (http://seamap.env.duke.edu/content/content/termsofuse). Please contact the data provider(s) before you use the data under "permission required" policy downloaded from OBIS-SEAMAP for any product or publication.

Except for data under CC0 sharing policy, proper credit/citations for all individual datasets are required, even when multiple datasets are used together. The citation section in the metadata of individual Dataset Page(s) should be used as the proper credit/citations. For your convenience, the zipped file for download data includes datasets_and_citations.csv that lists all the datasets, their citations and links to online metadata (notes: datasets_and_citations.csv has only one row for the dataset when users downloaded data with "Dataset on Dataset Page" option. For other options, the csv file lists all the datasets that provided data users downloaded),

**Contact organisation:** Marine Geospatial Ecology Lab, Duke University

**Organisation type:** Resource provider

**Acronym:**

**Name:**

**Position:**

**City:**

**Country:**

**E-mail:** info@mico.eco

**Web site:** https://mico.eco/

**Data format(s):** Online database, Online maps

**Distribution format(s):** KML, Online database, Online maps, Tabular (.xls, .csv, or .tab), Vector (point; .shp), Vector

**Webpage and/or download:** http://seamap.env.duke.edu

**Other webpage:**

**Web map service:**

**Resolution, scale:** Variable

**Reference system:** WGS 1984

**West bounding:** -180.0

**East bounding:** 180.0

**South bounding:** -60.0

**North bounding:** 60.0

**Metadata standard:** UNEP-WCMC Specific

**Date of metadata:** 04/03/2019
Global Distribution of Northern Fur Seals (2013)

Description: This dataset shows the modelled distribution of Northern fur seals (Callorhinus ursinus). AquaMaps (www.aquamaps.org) is a species distribution modelling approach that provides standardised range maps for marine species using available information on species occurrence. IUCN status: Vulnerable (Red List of Threatened Species).


Temporal range: 2013
Geographical range: Global

Supplementary information: The dataset contains continuous probabilities of occurrence as a global grid of 0.5 dd resolution. Field information: scientific name (Genus, Species); center latitude of 0.5 dd cell (Center Lat); center longitude of 0.5 dd cell (Center Long); unique cell identifier following the c-squares code system (C-Square Code; see http://www.cmar.csiro.au/csquares/about-csquares.htm for more information); total predicted relative environmental suitability based on envelope settings (Overall Probability).

Predicted distributions often include the potential environmental niche of a species, including historical occurrence. Validation analysis has shown that relative probabilities >=0.4 correspond more closely to the utilised niche of this species: this is the recommended threshold to be used to delineate the core range of this species (precautionary setting). Detailed dataset-specific information (provided by K. Kaschner) is also available.

Purpose of creation: AquaMaps is a tool for generating model-based, large-scale predictions of natural occurrences of species. The maps can be used to inform environmental impact assessments.

Creation methodology: The modelled distribution was generated using the AquaMaps online species distribution model. Methodological notes (provided by K. Kaschner) are also available. Observed occurrence records (280 cells; FAO areas: 18, 61, 67, 71, 77, 87) were obtained (August 2013) from the Global Biodiversity Information Facility.
These were supplemented by additional information obtained through online species databases such as FishBase (www.fishbase.org) and SealifeBase (www.sealifebase.org), as well as published information on species-specific habitat usage and expert knowledge. The distribution model was based on five environmental variables (depth, temperature, salinity, primary production, and sea ice concentration), and details of the species envelope are in the dataset-specific information (provided by K. Kaschner).

Version: 1.0 (August 2013)

Data lineage: In acknowledgement that predicted distributions reflect the current state of knowledge, AquaMaps predictions are not a permanent, fixed output, but instead will be revised and updated as new data or information become available or additional experts provide new input.


Category: Species distribution

Keywords: marine, coastal, model, high seas, pelagic

Similar datasets: None

Limitations: Excluded from the model: species misidentifications, fossil records and outliers. An additional record from the Beaufort Sea was manually excluded (unrepresentative vagrant) based on available information about regular species occurrences.

The modelled distribution has been expert-reviewed by Kristin Kaschner (15 December 2013), and the quality of predictions ranks 3 out of 5 (see www.aquamaps.org/rating.html for further details). Expert comment: "Predictions match known occurrence well, except for false predicted presences in the Sea of Okhotsk (known absence might be due to interspecific competition) and low predicted probabilities in the Yellow Sea. Test of original 'Relative Environmental Suitability' predictions showed strong positive correlation with observed sightings (Kaschner et al., 2006). Based on the review of more recent occurrence data sets and after the exclusion of a single outlier record in the Beaufort Sea, depth envelope settings were extended into deeper waters and upper SST range was manually decreased to capture known southern limits of geographic range. The map would be improved by use of seasonal predictions".


Maintenance frequency: Data are updated in intervals that are uneven in duration.

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Interested users of the dataset should contact Kristin Kaschner who will identify and provide, where appropriate, the most recent updated data.

For commercial use, please contact business-support@unep-wcmc.org.

Albert-Ludwigs-University of Freiburg

Owner

Dr. Kristin Kaschner

Freiburg

Kristin.Kaschner@biologie.uni-freiburg.de

www.uni-freiburg.de

Raster (ESRI Grid), Tabular (.xls, .csv, or .tab), Vector (point; .shp)

Tabular (.xls, .csv, or .tab)

723 Kb

http://www.aquamaps.org

http://data.unep-wcmc.org/datasets/35

http://library.oceanplus.org
Global Distribution of Hawaiian Monk Seals (2013)

Description: This dataset shows the modelled distribution of Hawaiian monk seals (Monachus schauinslandi). AquaMaps (www.aquamaps.org) is a species distribution modelling approach that provides standardised range maps for marine species using available information on species occurrence. IUCN status: Critically Endangered (Red List of Threatened Species).


Temporal range: 2013
Geographical range: Global
Supplementary information: The dataset contains continuous probabilities of occurrence as a global grid of 0.5 dd resolution. Field information: scientific name (Genus, Species); center latitude of 0.5 dd cell (Center Lat); center longitude of 0.5 dd cell (Center Long); unique cell identifier following the c-squares code system (C-Square Code; see http://www.cmar.csiro.au/csquares/about-csquares.htm for more information); total predicted relative environmental suitability based on envelope settings (Overall Probability).

Predicted distributions often include the potential environmental niche of a species, including historical occurrence. Validation analysis has shown that relative probabilities >=0.4 correspond more closely to the utilised niche of this species: this is the recommended threshold to be used to delineate the core range of this species (precautionary setting). Detailed dataset-specific information (provided by K. Kaschner) is also available.

Purpose of creation: AquaMaps is a tool for generating model-based, large-scale predictions of natural occurrences of species. The maps can be used to inform environmental impact assessments.

Creation methodology: The modelled distribution was generated using the AquaMaps online species distribution model. Methodological notes (provided by K. Kaschner) are also available. Observed occurrence records (< 10 cells; FAO areas: 61, 77, 71) were obtained (August 2013) from the Global Biodiversity Information Facility (GBIF;
www.gbif.org). These were supplemented by additional information obtained through online species databases such as FishBase (www.fishbase.org) and SealifeBase (www.Sealifebase.org), as well as published information on species-specific habitat usage and expert knowledge. The distribution model was based on three environmental variables (depth, temperature, salinity, and distance to land), and details of the species envelope are in the dataset-specific information (provided by K. Kaschner).

**Version:** 1.0 (August 2013)

**Data lineage:** In acknowledgement that predicted distributions reflect the current state of knowledge, AquaMaps predictions are not a permanent, fixed output, but instead will be revised and updated as new data or information become available or additional experts provide new input.


**Category:** Species distribution

**Keywords:** marine, coastal, model, pelagic

**Similar datasets:** None

**Limitations:** Excluded from the model: species misidentifications, fossil records and outliers. For this species, there are less than 10 “good cells” (i.e. Presence records in cells known to fall within the geographic range of the species) and therefore insufficient data to calculate envelopes from occurrence records. All envelope settings are therefore based on expert knowledge only.

The modelled distribution has been expert-reviewed by Kristin Kaschner (15 December 2013), and the quality of predictions ranks 3 out of 5 (see www.aquamaps.org/rating.html for further details). Expert comment: "Relatively good match of known distribution, although species is currently not known to occur in large numbers around the southeastern Hawaiian islands. Therefore predictions are probably more representative of historical distribution of the species prior to population decline associated with anthropogenic impacts. Some false predicted absences along the Hawaiian island chain, due to upper depth range setting, but an upward adjustment results in an increase of false predicted presence in deeper offshore waters where species is not known to occur regularly. Envelopes are based on expert knowledge only as there are less than 10 occurrence records/good cells available through GBIF".

**Maintenance frequency:** Data are updated in intervals that are uneven in duration.

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**Other access/use constraints:** Interested users of the dataset should contact Kristin Kaschner who will identify and provide, where appropriate, the most recent updated data.
For commercial use, please contact business-support@unep-wcmc.org.

Contact organisation: Albert-Ludwigs-University of Freiburg

Organisation type: Owner

Name: Dr. Kristin Kaschner
City: Freiburg
E-mail: Kristin.Kaschner@biologie.uni-freiburg.de
Web site: www.uni-freiburg.de

Data format(s): Raster (ESRI Grid), Tabular (.xls, .csv, or .tab), Vector (point; .shp)

Distribution format(s): Tabular (.xls, .csv, or .tab)

Dataset size (uncompressed): 90 Kb

Webpage and/or download: http://www.aquamaps.org

Other webpage: http://data.unep-wcmc.org/datasets/34

Web map service:

Factsheet:
Resolution, scale: 0.5 dd
Reference system: WGS 1984
West bounding: -147.0
East bounding: 175.0
South bounding: 12.0
North bounding: 90.0
Metadata standard: UNEP-WCMC Specific
Date of metadata: 29/05/2015
Global Distribution of Grey Seals (2013)

Description: This dataset shows the modelled distribution of grey seals (Halichoerus grypus). AquaMaps (www.aquamaps.org) is a species distribution modelling approach that provides standardised range maps for marine species using available information on species occurrence. IUCN status: Least Concern (Red List of Threatened Species).


Temporal range: 2013

Geographical range: Global

Supplementary information: The dataset contains continuous probabilities of occurrence as a global grid of 0.5 dd resolution. Field information: scientific name (Genus, Species); center latitude of 0.5 dd cell (Center Lat); center longitude of 0.5 dd cell (Center Long); unique cell identifier following the c-squares code system (C-Square Code; see http://www.cmar.csiro.au/csquares/about-csquares.htm for more information); total predicted relative environmental suitability based on envelope settings (Overall Probability).

Predicted distributions often include the potential environmental niche of a species, including historical occurrence. Validation analysis has shown that relative probabilities >=0.4 correspond more closely to the utilised niche of this species: this is the recommended threshold to be used to delineate the core range of this species (precautionary setting). Detailed dataset-specific information (provided by K. Kaschner) is also available.

Purpose of creation: AquaMaps is a tool for generating model-based, large-scale predictions of natural occurrences of species. The maps can be used to inform environmental impact assessments.

Creation methodology: The modelled distribution was generated using the AquaMaps online species distribution model. Methodological notes (provided by K. Kaschner) are also available. Observed occurrence records (512 cells; FAO areas: 21, 27, 31, 34) were obtained (August 2013) from the Global Biodiversity Information Facility (GBIF; www.gbif.org). These were supplemented by additional information obtained.
through online species databases such as FishBase (www.fishbase.org) and SealifeBase (www.Sealifebase.org), as well as published information on species-specific habitat usage and expert knowledge. The distribution model was based on five environmental variables (depth, temperature, salinity, primary production, and sea ice concentration), and details of the species envelope are in the dataset-specific information (provided by K. Kaschner).

Version: 1.0 (August 2013)

Data lineage: In acknowledgement that predicted distributions reflect the current state of knowledge, AquaMaps predictions are not a permanent, fixed output, but instead will be revised and updated as new data or information become available or additional experts provide new input.


Category: Species distribution

Keywords: marine distribution

Limitations: Excluded from the model: species misidentifications, fossil records and outliers.

The modelled distribution has been expert-reviewed by Kristin Kaschner (15 December 2013), and the quality of predictions ranks 3 out of 5 (see www.aquamaps.org/rating.html for further details). Expert comment: "Good fit with known species' distribution. Modification of temperature and ice envelopes to better fit with known species' distribution. Predicted presence at the coast of Russia might be a bit too far east and species is only vagrant in Greenland waters".

Maintenance frequency: Data are updated in intervals that are uneven in duration.

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Other access/use constraints: Interested users of the dataset should contact Kristin Kaschner who will identify and provide, where appropriate, the most recent updated data.

For commercial use, please contact business-support@unep-wcmc.org.

Contact organisation: Albert-Ludwigs-University of Freiburg

Organisation type: Owner

Acronym:
Name: Dr. Kristin Kaschner  
Position: Research Affiliate  
City: Freiburg  
Country: Germany  
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Web site: www.uni-freiburg.de  
Data format(s): Raster (ESRI Grid), Tabular (.xls, .csv, or .tab), Vector (point; .shp)  
Distribution format(s): Tabular (.xls, .csv, or .tab)  
Dataset size (uncompressed): 235 Kb  
Webpage and/or download: http://www.aquamaps.org  
Other webpage: http://data.unep-wcmc.org/datasets/33  
Web map service: 

Factsheet:  
Resolution, scale: 0.5 dd  
West bounding: -180.0  
South bounding: 0.0  
Metadata standard: UNEP-WCMC Specific  
Reference system: WGS 1984  
East bounding: 180.0  
North bounding: 90.0  
Date of metadata: 29/05/2015
Global Distribution of Hector's Dolphins (2013)

Description: This dataset shows the modelled distribution of Hector's dolphins (Cephalorhynchus hectori). AquaMaps (www.aquamaps.org) is a species distribution modelling approach that provides standardised range maps for marine species using available information on species occurrence. IUCN status: Endangered (Red List of Threatened Species).


Temporal range: 2013
Geographical range: Global
Supplementary information: The dataset contains continuous probabilities of occurrence as a global grid of 0.5 dd resolution. Field information: scientific name (Genus, Species); center latitude of 0.5 dd cell (Center Lat); center longitude of 0.5 dd cell (Center Long); unique cell identifier following the c-squares code system (C-Square Code; see http://www.cmar.csiro.au/csquares/about-csquares.htm for more information); total predicted relative environmental suitability based on envelope settings (Overall Probability).

Detailed dataset-specific information (provided by K. Kaschner) is also available.

Purpose of creation: AquaMaps is a tool for generating model-based, large-scale predictions of natural occurrences of species. The maps can be used to inform environmental impact assessments.

Creation methodology: The modelled distribution was generated using the AquaMaps online species distribution model. Methodological notes (provided by K. Kaschner) are also available. Observed occurrence records (< 10 cells; FAO areas: 81) were obtained (August 2013) from the Global Biodiversity Information Facility (GBIF; www.gbif.org). These were supplemented by additional information obtained through online species databases such as FishBase (www.fishbase.org) and SealifeBase (www.sealifebase.org), as well as published information on species-specific habitat usage and expert knowledge. The distribution model was based on four environmental variables (depth, temperature, salinity, and primary
production), and details of the species envelope are in the dataset-specific information (provided by K. Kaschner).

**Version:** 1.0 (August 2013)

**Data lineage:** In acknowledgement that predicted distributions reflect the current state of knowledge, AquaMaps predictions are not a permanent, fixed output, but instead will be revised and updated as new data or information become available or additional experts provide new input.


**Category:** Species distribution

**Keywords:** marine, coastal, model, pelagic

**Similar datasets:** None

**Limitations:** Excluded from the model: species misidentifications, fossil records and outliers. For this species, there are less than 10 “good cells” (i.e. Presence records in cells known to fall within the geographic range of the species) and therefore insufficient data to calculate envelopes from occurrence records. All envelope settings are therefore based on expert knowledge only.

The modelled distribution has been expert-reviewed by Kristin Kaschner (15 December 2013), and the quality of predictions ranks 4 out of 5 (see www.aquamaps.org/rating.html for further details). Expert comment: "Good representation of known occurrence of species, except for false predicted presences around Stewart Island and other offshore shallow banks southwest of New Zealand and off the eastern and southern coast of the North Island, which are not supported by data. Also distribution of North Island subpopulation (Maui's dolphin) along the West coast underestimated and predicted concentrations in South Taranaki Bight more representative of historic range (currently highest numbers between Taranaki & Ninety Mile Beach)."

**Maintenance frequency:** Data are updated in intervals that are uneven in duration.

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**Other access/use constraints:** Interested users of the dataset should contact Kristin Kaschner who will identify and provide, where appropriate, the most recent updated data.

For commercial use, please contact business-support@unep-wcmc.org.
Dataset ID: Kaschner-004

Contact organisation: Albert-Ludwigs-University of Freiburg

Organisation type: Owner

Acronym: Research Affiliate

Name: Dr. Kristin Kaschner

City: Freiburg

Country: Germany

E-mail: Kristin.Kaschner@biologie.uni-freiburg.de

Web site: www.uni-freiburg.de

Data format(s): Raster (ESRI Grid), Tabular (.xls, .csv, or .tab), Vector (point; .shp)

Distribution format(s): Tabular (.xls, .csv, or .tab)

Dataset size (uncompressed): 14 Kb

Webpage and/or download: http://www.aquamaps.org

Other webpage: http://data.unep-wcmc.org/datasets/32

Web map service:

Factsheet:

Resolution, scale: 0.5 dd
West bounding: 160.0
South bounding: -90.0
Metadata standard: UNEP-WCMC Specific

Reference system: WGS 1984
East bounding: 180.0
North bounding: 0.0
Date of metadata: 29/05/2015
Global Distribution of Atlantic Spotted Dolphins (2013)

Description: This dataset shows the modelled distribution of Atlantic spotted dolphins (Stenella frontalis). AquaMaps (www.aquamaps.org) is a species distribution modelling approach that provides standardised range maps for marine species using available information on species occurrence. IUCN status: Data Deficient (Red List of Threatened Species).


Temporal range: 2013
Geographical range: Global

Supplementary information: The dataset contains continuous probabilities of occurrence as a global grid of 0.5 dd resolution. Field information: scientific name (Genus, Species); center latitude of 0.5 dd cell (Center Lat); center longitude of 0.5 dd cell (Center Long); unique cell identifier following the c-squares code system (C-Square Code; see http://www.cmar.csiro.au/csquares/about-csquares.htm for more information); total predicted relative environmental suitability based on envelope settings (Overall Probability).

Predicted distributions often include the potential environmental niche of a species, including historical occurrence. Validation analysis has shown that relative probabilities >=0.6 correspond more closely to the utilised niche of this species: this is the recommended threshold to be used to delineate the core range of this species (precautionary setting). Detailed dataset-specific information (provided by K. Kaschner) is also available.

Purpose of creation: AquaMaps is a tool for generating model-based, large-scale predictions of natural occurrences of species. The maps can be used to inform environmental impact assessments.

Creation methodology: The modelled distribution was generated using the AquaMaps online species distribution model. Methodological notes (provided by K. Kaschner) are also available. Observed occurrence records (235 cells; FAO areas: 21, 27, 31, 34, 41, 47) were obtained (August 2013) from the Global Biodiversity Information Facility.
Dataset ID: Kaschner-011

(GBIF; www.gbif.org). These were supplemented by additional information obtained through online species databases such as FishBase (www.fishbase.org) and SealifeBase (www.Sealifebase.org), as well as published information on species-specific habitat usage and expert knowledge. The distribution model was based on four environmental variables (depth, temperature, salinity, and primary production), and details of the species envelope are in the dataset-specific information (provided by K. Kaschner).

Version: 1.0 (August 2013)

Data lineage: In acknowledgement that predicted distributions reflect the current state of knowledge, AquaMaps predictions are not a permanent, fixed output, but instead will be revised and updated as new data or information become available or additional experts provide new input.


Category: Species distribution

Keywords: marine, coastal, model, pelagic, high seas, deep sea

Similar datasets: None

Limitations: Excluded from the model: species misidentifications, fossil records and outliers.

The modelled distribution has been expert-reviewed by Kristin Kaschner (15 December 2013), and the quality of predictions ranks 2 out of 5 (see www.aquamaps.org/rating.html for further details). Expert comment: "Relatively good correspondence with known species’ distribution, particularly in the Gulf of Mexico where there seems to be the largest concentration of sightings, but there is a trade-off between trying to capture observed records in the western north Atlantic along the US coast which leads to large areas of false predicted presences in the eastern Atlantic (i.e., southern Spain, Morocco). Adjustment of minimum temperature limit and upper salinity limit to better capture species’ range. Introduction of southern limit in bounding box was necessary to limit predictions to match reported southern range limit."

Maintenance frequency: Data are updated in intervals that are uneven in duration.

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Other access/use constraints: Interested users of the dataset should contact Kristin Kaschner who will identify and provide, where appropriate, the most recent updated data.

For commercial use, please contact business-support@unep-wcmc.org.
Dataset ID: Kaschner-011

Contact organisation: Albert-Ludwigs-University of Freiburg

Organisation type: Owner
Acronym:

Name: Dr. Kristin Kaschner
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E-mail: Kristin.Kaschner@biologie.uni-freiburg.de
Web site: www.uni-freiburg.de
Data format(s): Raster (ESRI Grid), Tabular (.xls, .csv, or .tab), Vector (point; .shp)

Distribution format(s): Tabular (.xls, .csv, or .tab)
Dataset size (uncompressed): 1.1 Mb

Webpage and/or download:
http://www.aquamaps.org

Other webpage: http://data.unep-wcmc.org/datasets/30
Web map service:

Factsheet:
Resolution, scale: 0.5 dd
West bounding: -180.0
South bounding: -21.0
Metadata standard: UNEP-WCMC Specific

Reference system: WGS 1984
East bounding: 18.0
North bounding: 90.0
Date of metadata: 29/05/2015
Global Distribution of Northern Bottlenose Whales (2013)

**Description:** This dataset shows the modelled distribution of Northern bottlenose whales (Hyperoodon ampullatus). AquaMaps (www.aquamaps.org) is a species distribution modelling approach that provides standardised range maps for marine species using available information on species occurrence. IUCN status: Data Deficient (Red List of Threatened Species).


**Temporal range:** 2013

**Geographical range:** Global

**Supplementary information:** The dataset contains continuous probabilities of occurrence as a global grid of 0.5 dd resolution. Field information: scientific name (Genus, Species); center latitude of 0.5 dd cell (Center Lat); center longitude of 0.5 dd cell (Center Long); unique cell identifier following the c-squares code system (C-Square Code; see http://www.cmar.csiro.au/csquares/about-csquares.htm for more information); total predicted relative environmental suitability based on envelope settings (Overall Probability).

Predicted distributions often include the potential environmental niche of a species, including historical occurrence. Validation analysis has shown that relative probabilities >=0.4 correspond more closely to the utilised niche of this species: this is the recommended threshold to be used to delineate the core range of this species (precautionary setting). Detailed dataset-specific information (provided by K. Kaschner) is also available.

**Purpose of creation:** AquaMaps is a tool for generating model-based, large-scale predictions of natural occurrences of species. The maps can be used to inform environmental impact assessments.

**Creation methodology:** The modelled distribution was generated using the AquaMaps online species model.
distribution model. Methodological notes (provided by K. Kaschner) are also available. Observed occurrence records (142 cells; FAO areas: 21, 27, 31, 34, 37, 41) were obtained (August 2013) from the Global Biodiversity Information Facility (GBIF; www.gbif.org). These were supplemented by additional information obtained through online species databases such as FishBase (www.fishbase.org) and SealifeBase (www.Sealifebase.org), as well as published information on species-specific habitat usage and expert knowledge. The distribution model was based on five environmental variables (depth, temperature, salinity, primary production, and sea ice concentration), and details of the species envelope are in the dataset-specific information (provided by K. Kaschner).

Version: 1.0 (August 2013)

Data lineage: In acknowledgement that predicted distributions reflect the current state of knowledge, AquaMaps predictions are not a permanent, fixed output, but instead will be revised and updated as new data or information become available or additional experts provide new input.


Category: Species distribution

Keywords: marine, coastal, model, pelagic, high seas

Similar datasets: None

Limitations: Excluded from the model: species misidentifications, fossil records and outliers.

The modelled distribution has been expert-reviewed by Kristin Kaschner (15 December 2013), and the quality of predictions ranks 3 out of 5 (see www.aquamaps.org/rating.html for further details). Expert comment: "Good match with known sightings and relative occurrences and represents a good compromise capturing both northern and southern maximum migration range extents including the few documented records from the Mediterranean and as far south as the Canary and Cape Verde islands. Adjustment of salinity minimum and maximum thresholds to exclude species from Black Sea and most of Mediterranean. Adjustment of preferred minimum and maximum temperature range to compensate for data availability bias towards more temperate waters in GBIF (whaling records and expert knowledge support a concentration in polar to subpolar waters). Migratory species, thus predictions would be improved by incorporation of seasonality".

Maintenance frequency: Data are updated in intervals that are uneven in duration.

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Other access/use constraints: Interested users of the dataset should contact Kristin Kaschner who will identify and provide, where appropriate, the most recent updated data.
Dataset ID: Kaschner-005

For commercial use, please contact business-support@unep-wcmc.org.

Contact organisation: Albert-Ludwigs-University of Freiburg

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<td>Research Affiliate</td>
<td>Germany</td>
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<td><a href="mailto:Kristin.Kaschner@biologie.uni-freiburg.de">Kristin.Kaschner@biologie.uni-freiburg.de</a></td>
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Webpage and/or download: [http://www.aquamaps.org](http://www.aquamaps.org)

Other webpage: [http://data.unep-wcmc.org/datasets/29](http://data.unep-wcmc.org/datasets/29)

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Global Distribution of Sperm Whales (2013)

Description: This dataset shows the modelled distribution of sperm whales (Physeter macrocephalus). AquaMaps (www.aquamaps.org) is a species distribution modelling approach that provides standardised range maps for marine species using available information on species occurrence. IUCN status: Vulnerable (Red List of Threatened Species).


Temporal range: 2013
Geographical range: Global
Supplementary information: The dataset contains continuous probabilities of occurrence as a global grid of 0.5 °dd resolution. Field information: scientific name (Genus, Species); center latitude of 0.5 °dd cell (Center Lat); center longitude of 0.5 °dd cell (Center Long); unique cell identifier following the c-squares code system (C-Square Code; see http://www.cmar.csiro.au/csquares/about-csquares.htm for more information); total predicted relative environmental suitability based on envelope settings (Overall Probability).

Predicted distributions often include the potential environmental niche of a species, including historical occurrence. Validation analysis has shown that relative probabilities >=0.4 correspond more closely to the utilised niche of this species: this is the recommended threshold to be used to delineate the core range of this species (precautionary setting). Detailed dataset-specific information (provided by K. Kaschner) is also available.

Purpose of creation: AquaMaps is a tool for generating model-based, large-scale predictions of natural occurrences of species. The maps can be used to inform environmental impact assessments.

Creation methodology: The modelled distribution was generated using the AquaMaps online species distribution model. Methodological notes (provided by K. Kaschner) are also available. Observed occurrence records (1,820 cells; FAO areas: 18, 21, 27, 31, 34, 37, 41, 47, 48, 51, 57, 58, 61, 67, 71, 77, 81, 87, 88) were obtained (August 2013).
from the Global Biodiversity Information Facility (GBIF; www.gbif.org). These were supplemented by additional information obtained through online species databases such as FishBase (www.fishbase.org) and SeaLifeBase (www.Sealifebase.org), as well as published information on species-specific habitat usage and expert knowledge. The distribution model was based on five environmental variables (depth, temperature, salinity, primary production, and sea ice concentration), and details of the species envelope are in the dataset-specific information (provided by K. Kaschner).

**Version:** 1.0 (August 2013)

**Data lineage:** In acknowledgement that predicted distributions reflect the current state of knowledge, AquaMaps predictions are not a permanent, fixed output, but instead will be revised and updated as new data or information become available or additional experts provide new input.


**Category:** Species distribution

**Keywords:** marine, coastal, model, pelagic, high seas, deep sea

**Similar datasets:** Kaschner-007

**Limitations:** Excluded from the model: species misidentifications, fossil records and outliers.

The modelled distribution has been expert-reviewed by Kristin Kaschner (15 December 2013), and the quality of predictions ranks 4 out of 5 (see www.aquamaps.org/rating.html for further details). Expert comment: "Good fit with known species’ occurrence and predictions have been successfully validated in some areas using independent sighting data (Kaschner et al. 2006). Predicted distribution includes northern and southern known maximum range extents of migration of large males. Females and immature animals mostly remain below about 40°N and above 40°S. Minor modification to upper salinity threshold to capture the species’ regular occurrence in the Mediterranean. Occurrence in the Red Sea is not supported by published data. Depth preference of species may be less oceanic in some areas (e.g. Gulf of Mexico). Migratory species, therefore predictions would be improved by the incorporation of seasonality". Kaschner K, Watson R, Trites AW, Pauly D (2006). Mapping worldwide distributions of marine mammals using a Relative Environmental Suitability (RES) model. Marine Ecology Progress Series 316: 285-310

**Maintenance frequency:** Data are updated in intervals that are uneven in duration.

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**Other access/use constraints:** Interested users of the dataset should contact Kristin Kaschner who will identify and provide, where appropriate, the most recent updated data.
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Webpage and/or download: [http://www.aquamaps.org](http://www.aquamaps.org)

Other webpage: [http://data.unep-wcmc.org/datasets/10](http://data.unep-wcmc.org/datasets/10)

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Global Distribution of Bowhead Whales (2013)

Description: This dataset shows the modelled distribution of bowhead whales (Balaena mysticetus). AquaMaps (www.aquamaps.org) is a species distribution modelling approach that provides standardised range maps for marine species using available information on species occurrence. IUCN status: Least Concern, though some subpopulations are listed as Endangered and Critically Endangered (Red List of Threatened Species).


Temporal range: 2013
Geographical range: Global

Supplementary information: The dataset contains continuous probabilities of occurrence as a global grid of 0.5 dd resolution. Field information: scientific name (Genus, Species); center latitude of 0.5 dd cell (Center Lat); center longitude of 0.5 dd cell (Center Long); unique cell identifier following the c-squares code system (C-Square Code; see http://www.cmar.csiro.au/csquares/about-csquares.htm for more information); total predicted relative environmental suitability based on envelope settings (Overall Probability).

Predicted distributions often include the potential environmental niche of a species, including historical occurrence. Validation analysis has shown that relative probabilities >=0.2 correspond more closely to the utilised niche of this species: this is the recommended threshold to be used to delineate the core range of this species (precautionary setting). Detailed dataset-specific information (provided by K. Kaschner) is also available.

The map was published in: Foote et al. (2013). Ancient DNA reveals that bowhead whale lineages survived Late Pleistocene climate change and habitat shifts. Nature Communications 4: 1677

Purpose of creation: AquaMaps is a tool for generating model-based, large-scale predictions of natural occurrences of species. The maps can be used to inform environmental impact assessments.
The modelled distribution was generated using the AquaMaps online species distribution model. Methodological notes (provided by K. Kaschner) are also available. Observed occurrence records (41 cells; FAO areas: 18, 21, 27, 61,67) were obtained (August 2013) from the Global Biodiversity Information Facility (GBIF; www.gbif.org). These were supplemented by additional information obtained through online species databases such as FishBase (www.fishbase.org) and SealifeBase (www.Sealifebase.org), as well as published information on species-specific habitat usage and expert knowledge. The distribution model was based on five environmental variables (depth, temperature, salinity, primary production, and sea ice concentration), and details of the species envelope are in the dataset-specific information (provided by K. Kaschner).

Version: 1.0 (August 2013)

Data lineage: In acknowledgement that predicted distributions reflect the current state of knowledge, AquaMaps predictions are not a permanent, fixed output, but instead will be revised and updated as new data or information become available or additional experts provide new input.


Category: Species distribution

Keywords: marine, coastal, model, pelagic, high seas, deep sea

Similar datasets: None

Limitations: Excluded from the model: species misidentifications, fossil records and outliers.

The modelled distribution has been expert-reviewed by Kristin Kaschner and Randall Reeves (01 October 2012), and the quality of predictions ranks 3 out of 5 (see www.aquamaps.org/rating.html for further details). Expert comment: "Final predictions match known occurrence of species, based on e.g. Comparison with IUCN range descriptions, quite well. Environmental envelopes were re-calculated after manually excluding all GBIF records in the North Sea (n=6), which represented fossil occurrences of the species. Upper limits of SST, Primary Production and Salinity ranges where then extended to capture known distribution of Okhotsk Sea population. Areas of predicted high suitability east of Franz-Josef-Land probably represent false predicted presences and occurrence of species in the Sea of Okhotsk might be underestimated. Predictions represent a compromise between summer and winter occurrence and may be improved by the incorporation of seasonal aspects. See also most recent map in (Reeves et al. 2014)."

Reeves RR et al. (2014). Distribution of endemic cetaceans in relation to hydrocarbon development and commercial shipping in a warming Arctic. Marine Policy 44: 375-389

Maintenance frequency: Data are updated in intervals that are uneven in duration.

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commercial purposes.

**Other access/use constraints:** Interested users of the dataset should contact Kristin Kaschner who will identify and provide, where appropriate, the most recent updated data.

For commercial use, please contact business-support@unep-wcmc.org.

**Contact organisation:** Albert-Ludwigs-University of Freiburg

**Organisation type:** Owner

**Acronym:**

**Name:** Dr. Kristin Kaschner

**Position:** Research Affiliate

**City:** Freiburg

**Country:** Germany

**E-mail:** Kristin.Kaschner@biologie.uni-freiburg.de

**Web site:** [www.uni-freiburg.de](http://www.uni-freiburg.de)

**Data format(s):** Raster (ESRI Grid), Tabular (.xls, .csv, or .tab), Vector (point; .shp)

**Distribution format(s):** Tabular (.xls, .csv, or .tab)

**Dataset size (uncompressed):** 638 Kb

**Webpage and/or download:** [http://www.aquamaps.org](http://www.aquamaps.org)

**Other webpage:** [http://data.unep-wcmc.org/datasets/28](http://data.unep-wcmc.org/datasets/28)

**Web map service:**

**Factsheet:**

**Resolution, scale:** 0.5 dd

**Reference system:** WGS 1984

**West bounding:** -180.0

**East bounding:** 180.0

**South bounding:** 0.0

**North bounding:** 90.0

**Metadata standard:** UNEP-WCMC Specific

**Date of metadata:** 29/05/2015
Global Distribution of Sei Whales (2013)

Description: This dataset shows the modelled distribution of sei whales (Balaenoptera borealis). AquaMaps (www.aquamaps.org) is a species distribution modelling approach that provides standardised range maps for marine species using available information on species occurrence. IUCN status: Endangered (Red List of Threatened Species).


Temporal range: 2013

Geographical range: Global

Supplementary information: The dataset contains continuous probabilities of occurrence as a global grid of 0.5 dd resolution. Field information: scientific name (Genus, Species); center latitude of 0.5 dd cell (Center Lat); center longitude of 0.5 dd cell (Center Long); unique cell identifier following the c-squares code system (C-Square Code; see http://www.cmar.csiro.au/csquares/about-csquares.htm for more information); total predicted relative environmental suitability based on envelope settings (Overall Probability).

Predicted distributions often include the potential environmental niche of a species, including historical occurrence. Validation analysis has shown that relative probabilities >=0.4 correspond more closely to the utilised niche of this species: this is the recommended threshold to be used to delineate the core range of this species (precautionary setting). Detailed dataset-specific information (provided by K. Kaschner) is also available.

Purpose of creation: AquaMaps is a tool for generating model-based, large-scale predictions of natural occurrences of species. The maps can be used to inform environmental impact assessments.

Creation methodology: The modelled distribution was generated using the AquaMaps online species distribution model. Methodological notes (provided by K. Kaschner) are also available. Observed occurrence records (663 cells; FAO areas: 18, 21, 27, 31, 34, 37, 41, 47, 48, 51, 57, 58, 61, 67, 71, 77, 81) were obtained (August 2013) from the
Global Biodiversity Information Facility (GBIF; www.gbif.org). These were supplemented by additional information obtained through online species databases such as FishBase (www.fishbase.org) and SeaLifeBase (www.Sealifebase.org), as well as published information on species-specific habitat usage and expert knowledge. The distribution model was based on five environmental variables (depth, temperature, salinity, primary production, and sea ice concentration), and details of the species envelope are in the dataset-specific information (provided by K. Kaschner).

Version: 1.0 (August 2013)

Data lineage: In acknowledgement that predicted distributions reflect the current state of knowledge, AquaMaps predictions are not a permanent, fixed output, but instead will be revised and updated as new data or information become available or additional experts provide new input.


Category: Species distribution

Keywords: marine, coastal, model, pelagic, high seas, deep sea

Similar datasets: Kaschner-010

Limitations: Excluded from the model: species misidentifications, fossil records and outliers.

The modelled distribution has been expert-reviewed by Kristin Kaschner (15 December 2013), and the quality of predictions ranks 2 out of 5 (see www.aquamaps.org/rating.html for further details). Expert comment: "Relatively good match of known maximum range extent of species, however relative occurrence within the range is suboptimal at this stage. Records available for envelope calculations are non-representative of the distribution of this species, which is known to be oceanic and less polar than most other baleen whales (see e.g. IWC whaling records for comparison), and preferred minimum temperature of envelope was therefore adjusted. In addition, the maximum primary production threshold was downward adjusted to capture known occurrences better. Even after adjustments, there are large areas of false predicted presence, in particular in the Sea of Japan and some likely areas of false predicted absence in tropical waters (except for the Northern Indian Ocean). This is highly migratory species with different habitat usage during different seasons and in different hemispheres, which cannot be captured adequately using an generic annual average model. Hence, predictions would be likely be much improved by the incorporation of seasonality".

Maintenance frequency: Data are updated in intervals that are uneven in duration.

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Interested users of the dataset should contact Kristin Kaschner who will identify and provide, where appropriate, the most recent updated data.

For commercial use, please contact business-support@unep-wcmc.org.

Contact organisation: Albert-Ludwigs-University of Freiburg

Organisation type: Owner

Name: Dr. Kristin Kaschner
City: Freiburg
E-mail: Kristin.Kaschner@biologie.uni-freiburg.de
Web site: www.uni-freiburg.de
Data format(s): Raster (ESRI Grid), Tabular (.xls, .csv, or .tab), Vector (point; .shp)

Distribution format(s): Tabular (.xls, .csv, or .tab)

Dataset size (uncompressed): 10.2 Mb

Webpage and/or download: http://www.aquamaps.org

Other webpage: http://data.unep-wcmc.org/datasets/11

Web map service: 

Factsheet:

Resolution, scale: 0.5 dd  Reference system: WGS 1984
West bounding: -180.0  East bounding: 180.0
South bounding: -90.0  North bounding: 90.0
Metadata standard: UNEP-WCMC Specific  Date of metadata: 29/05/2015
Global Distribution of Melon-Headed Whales (2013)

Description: This dataset shows the modelled distribution of melon-headed whales (Peponocephala electra). AquaMaps (www.aquamaps.org) is a species distribution modelling approach that provides standardised range maps for marine species using available information on species occurrence. IUCN status: Least Concern (Red List of Threatened Species).


Temporal range: 2013
Geographical range: Global
Supplementary information: The dataset contains continuous probabilities of occurrence as a global grid of 0.5 dd resolution. Field information: scientific name (Genus, Species); center latitude of 0.5 dd cell (Center Lat); center longitude of 0.5 dd cell (Center Long); unique cell identifier following the c-squares code system (C-Square Code; see http://www.cmar.csiro.au/csquares/about-csquares.htm for more information); total predicted relative environmental suitability based on envelope settings (Overall Probability).

Predicted distributions often include the potential environmental niche of a species, including historical occurrence. Validation analysis has shown that relative probabilities >=0.4 correspond more closely to the utilised niche of this species: this is the recommended threshold to be used to delineate the core range of this species (precautionary setting). Detailed dataset-specific information (provided by K. Kaschner) is also available.

Purpose of creation: AquaMaps is a tool for generating model-based, large-scale predictions of natural occurrences of species. The maps can be used to inform environmental impact assessments.

Creation methodology: The modelled distribution was generated using the AquaMaps online species distribution model. Methodological notes (provided by K. Kaschner) are also available. Observed occurrence records (235 cells; FAO areas: 21, 27, 31, 34, 41, 47,
51, 57, 61, 67, 71, 77, 81, 87) were obtained (August 2013) from the Global Biodiversity Information Facility (GBIF; www.gbif.org). These were supplemented by additional information obtained through online species databases such as FishBase (www.fishbase.org) and SeaLifeBase (www.sealifebase.org), as well as published information on species-specific habitat usage and expert knowledge. The distribution model was based on four environmental variables (depth, temperature, salinity, and primary production), and details of the species envelope are in the dataset-specific information (provided by K. Kaschner).

Version: 1.0 (August 2013)

Data lineage: In acknowledgement that predicted distributions reflect the current state of knowledge, AquaMaps predictions are not a permanent, fixed output, but instead will be revised and updated as new data or information become available or additional experts provide new input.


Category: Species distribution

Keywords: marine, coastal, model, pelagic, high seas, deep sea

Similar datasets: None

Limitations: Excluded from the model: species misidentifications, fossil records and outliers, and some additional records along the northern coast of the US (based on available information about regular species occurrences).

The modelled distribution has been expert-reviewed by Kristin Kaschner (15 December 2013), and the quality of predictions ranks 3 out of 5 (see www.aquamaps.org/rating.html for further details). Expert comment: "Good correspondence with known species’ distribution range, but dearth of available data makes assessment of quality of predictions difficult. Possibly false predicted absence from the coast of Peru and Namibia. Adjustment of lower temperature limit to better capture this species’ range and underestimation of species occurrence around areas associated with low salinity and high primary productivity (e.g. Northern Bay of Bengal etc)."

Maintenance frequency: Data are updated in intervals that are uneven in duration.

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Other access/use constraints: Interested users of the dataset should contact Kristin Kaschner who will identify and provide, where appropriate, the most recent updated data.

For commercial use, please contact business-support@unep-wcmc.org.
Dataset ID: Kaschner-012

Contact organisation: Albert-Ludwigs-University of Freiburg

Organisation type: Owner

Name: Dr. Kristin Kaschner

City: Freiburg

E-mail: Kristin.Kaschner@biologie.uni-freiburg.de

Web site: www.uni-freiburg.de

Data format(s): Raster (ESRI Grid), Tabular (.xls, .csv, or .tab), Vector (point; .shp)

Distribution format(s): Tabular (.xls, .csv, or .tab)

Dataset size (uncompressed): 4.4 Mb

Webpage and/or download: http://www.aquamaps.org

Other webpage: http://data.unep-wcmc.org/datasets/31

Web map service:

Factsheet:

Resolution, scale: 0.5 dd

West bounding: -180.0

South bounding: -90.0

Metadata standard: UNEP-WCMC Specific

Reference system: WGS 1984

East bounding: 180.0

North bounding: 90.0

Date of metadata: 29/05/2015
Spatial Data for the Red List of Threatened Species

Description: This dataset contains distribution information on species assessed for The IUCN Red List of Threatened Species™. The IUCN Red List of Threatened Species (http://www.iucnredlist.org) is a dynamic knowledge product derived from assessment of species extinction risk against the IUCN Red List Categories and Criteria. The maps contained within this dataset are developed as part of a comprehensive assessment of global biodiversity in order to highlight taxa threatened with extinction, and thereby promote their conservation.

Citation(s): For individual species maps, credit information is provided in the Citation field of the attribute data which accompanies each shapefile. This information should be used in conjunction with the credit information for the spatial data set as a whole using the following format:

To provide credit to the dataset as a whole (or in general) or to substantial portions of the dataset the following citation should be used:

Other cited reference(s):

Temporal range: Variable
Geographical range: Global
Supplementary information: For further information, see: http://www.iucnredlist.org/technical-documents/spatial-data

Purpose of creation: The IUCN Red List of Threatened Species assessment data are made freely available for non-commercial use to help inform conservation planning and other decision making processes. For more information about the assessment process and the
underlying data, please see the IUCN Red List website (www.iucnredlist.org/). The IUCN Red List of Threatened Species is a dynamic knowledge product. It is important to note that some species such as those listed as ‘Data Deficient’ are not mapped and subspecies are mapped within the parental species.

Creation methodology:
These data are maintained in an underlying database, the Species Information Service (SIS). Of the species assessed, approximately two-thirds have spatial data which is categorised in comprehensively assessed taxonomic groups. The data is available as ESRI shapefiles format and contains the known range of each species. Ranges are depicted as polygons, except for the freshwater HydroSHED tables. The shapefiles contain taxonomic information, distribution status, IUCN Red List category, sources and other details about the maps (see metadata document).

Version: v5.1
Data lineage: These data are an update from previous versions.
Category: Species distribution
Keywords: marine, coastal, pelagic, benthic, high seas, deep sea, species, habitat, biodiversity

Similar datasets:
Limitations: Please check on the IUCN Red List website "Spatial Resources" page for an updated version of the metadata: http://www.iucnredlist.org/technical-documents/red-list-training/iucnspatialresources.

Maintenance frequency: Data are updated in intervals that are uneven in duration.
Main access/use constraint: IUCN Red List Terms and Conditions of Use (version 2.1). See http://www.iucnredlist.org/info/terms-of-use for details.

Other access/use constraints: Datasets are freely available for non-commercial use according to published terms (http://www.iucnredlist.org/info/terms-of-use), and under data licence for commercial use through IBAT (https://www.ibatforbusiness.org/). These data and any derivatives may not be used for commercial or any revenue generating activities without prior written permission from IUCN. All forms of reposting, sublicensing, reselling or other forms of redistribution of these data in their original format are also prohibited without prior written permission from IUCN. Please refer to the Terms and Conditions of Use.

Contact organisation: International Union for Conservation of Nature
Organisation type: Creator
Acronym: IUCN
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<td>Web map service:</td>
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<td>Metadata standard: UNEP-WCMC Specific Date of metadata: 25/01/2017</td>
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Corrected and Refined Mangrove Species Ranges (2014)

Description:
This dataset shows corrected and refined ranges for 68 mangrove species, based on known areas of mangrove occurrence (as per Giri et al. 2011; dataset WCMC-010), and ranges originally created by IUCN in 2009 (IUCN 2014; dataset IUCN-001) and published in Polidoro et al. (2010).

Citation(s):
IUCN and UNEP-WCMC (2014). Corrected and refined IUCN mangrove species ranges, based on known areas of mangrove occurrence (as per Giri et al., 2011). Version 1.0. Cambridge (UK): IUCN and UNEP World Conservation Monitoring Centre

Other cited references:


Temporal range: 2014
Geographical range: Global
Supplementary information: The data pack also contains a species richness map (pictured here; 1 sq-km resolution; 1.3 Gb in raster format) derived from these corrected/refined ranges, as well as the Python scripts used to create the corrected/refined ranges.

At the time of writing, 4 species (species IDs are 178847, 178848, 178849, 178850) need re-processing, and all the ranges re-projeting from Mercator to WGS 1984.

Purpose of creation: The original ranges extend significantly offshore in deep waters (this was used as a visual trick to make them more visible in global-scale maps). Also, the original ranges do not extend enough inland, meaning that ranges do not completely
overlap with known areas of mangrove occurrence. The corrected/refined dataset solves both issues.

It is hoped that the corrected/refined ranges will be used in the upcoming threat status reassessment.

Creation methodology:

To address the incomplete overlap of original ranges with known areas of mangrove occurrence, the boundaries of ranges were buffered by 10 km (spot checks having established that this distance was adequate). The corrected ranges were then refined by clipping them with known areas of mangrove occurrence.

The GIS process for correction/refinement was automated in Python language (ArcMap 10.0, Python v 2.6.5), with each species taking approximately 20 min to process. The script can be amended to use other available global distributions of mangrove such as that of Spalding et al (2010; dataset WCMC-011).

Version: 1.0 (December 2014)

Data lineage: IUCN carried out a first attempt early in 2014, without first correcting the ranges. IUCN identified the need to use the 'dice' tool in ArcGIS to speed up processing time.

Category: Species distribution

Keywords: mangrove, coastal, range

Similar datasets: IUCN-001

Limitations: The dataset used to locate known areas of mangrove occurrence was derived from earth observation satellite imagery (see limitations detailed in the metadata for dataset WCMC-010). Furthermore, users should be aware that the dataset shows species ranges, not actual presence on the ground of the various species.

Maintenance frequency: Data are updated in intervals that are uneven in duration.

Main access/use constraint: IUCN Red List Terms and Conditions of Use (version 2.1). See http://www.iucnredlist.org/info/terms-of-use for details.

Other access/use constraints: Interested users should contact marine@unep-wcmc.org in the first instance. Permission to access the data will require permission from both IUCN and UNEP-WCMC.

Contact organisation: UN Environment World Conservation Monitoring Centre

Organisation type: Custodian

Acronym: UNEP-WCMC
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<tbody>
<tr>
<td><strong>Name:</strong> Lauren Weatherdon</td>
</tr>
<tr>
<td><strong>City:</strong> Cambridge</td>
</tr>
<tr>
<td><strong>E-mail:</strong> <a href="mailto:lauren.weatherdon@unep-wcmc.org">lauren.weatherdon@unep-wcmc.org</a></td>
</tr>
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<td><strong>Metadata standard:</strong> UNEP-WCMC Specific</td>
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Global Patterns of Marine Biodiversity (2010)

The dataset shows the global patterns of marine biodiversity (species richness) across 13 major species groups ranging from zooplankton to marine mammals (11,567 species in total). These groups include marine zooplankton (foraminifera and euphausiids), plants (mangroves and seagrasses), invertebrates (stony corals, squids and other cephalopods), fishes (coastal fishes, tunas and billfishes, oceanic and non-oceanic sharks), and mammals (cetaceans and pinnipeds). Two major patterns emerged from this work: coastal species showed maximum diversity in the Western Pacific, whereas oceanic groups consistently peaked across broad mid-latitudeal bands in all oceans. The findings indicate a fundamental role of temperature in structuring cross-taxon marine biodiversity, and indicate that changes in ocean temperature, in conjunction with other human impacts, may ultimately rearrange the global distribution of life in the ocean.

Citation(s):

Temporal range: OBIS data obtained up to 2009
Geographical range: Global

Supplementary information:
WCMC-019-PatternsBiodiversity2010-AcrossTaxa.shp: This subset contains the underlying data used to create Figure 2 from Tittensor et al. (2010) and consists of gridded cross-taxon species richness. Attribute table: code for the individual grid cell (GRIDCODE); longitude of the cell mid-point (XCOORD); latitude of the cell mid-point (YCOORD); summed species richness across all taxa (Figure 2a; AllTaxa); normalized species richness across taxa (Figure 2b; AllNorm - displayed here); normalized species richness for coastal taxa only (Figure 2c; CoastNorm); normalized species richness for oceanic taxa only (Figure 2d; OceanNorm).

WCMC-019-PatternsBiodiversity2010-IndivTaxa: This subset contains the underlying data used to create Figure 1 from Tittensor et al. (2010) and consists of gridded species richness for each taxon. Attribute table: code for the individual grid cell (GRIDCODE); longitude of the cell mid-point (XCOORD); latitude of the cell mid-point (YCOORD); derived coral species richness (Coral); derived cetacean species richness (Cetacean); derived pinniped
species richness (Pinniped); derived mangrove species richness (Mangrove); derived seagrass species richness (Seagrass); derived squid species richness (Squid); derived coastal fish species richness (co-kriged; CoasFishCK); derived non-oceanic shark species richness (NonOcShark); derived non-squid cephalopod species richness (NonSqCeph); derived tuna & billfish species richness (Tuna&Blffish); derived oceanic shark species richness (OceanShark); derived euphausiid species richness (Euphausiid); derived foraminifera species richness (co-kriged; ForamCK).

For both subsets, grid cells are equal-area, with cell size of 880 km (approx. 8 degrees at the equator).

**Purpose of creation:**

The dataset was created alongside the publication by Tittensor et al. (2010a), to address the need for understanding on the distribution and drivers of marine biodiversity.

**Creation methodology:**

The analysis built on the decade-long effort by the Census of Marine Life to compile occurrence records for marine species in an Ocean Biogeographic Information System (www.iobis.org). Relationships between species richness and environmental predictors (e.g. coastline length, sea surface temperature, oxygen, primary productivity, etc) were modelled using both generalised linear models and multivariate spatial linear models. Full details of the methodology (including data processing and cleaning) can be found in Tittensor et al. (2010).

**Version:**

**Data lineage:**

**Category:** Biodiversity metric

**Keywords:** coastal, marine, high seas, model, COML, OBIS, species richness, biodiversity

**Similar datasets:**

**Limitations:** Species included in the analysis of richness were limited to taxa for which sufficient records were accessible to determine global distribution. For example, data on deep-sea diversity and marine invertebrates are limited, and microbes and viruses were excluded.

**Maintenance frequency:** Data are not being updated.

**Main access/use constraint:** UNEP-WCMC General Data Licence (excluding WDPA). See www.unep-wcmc.org/policies/general-data-license-excluding-wdpa#data_policy and www.unep-wcmc.org/policies. For commercial use, please contact business-support@unep-wcmc.org.

**Other access/use constraints:** Full Terms and Conditions can be found in the file "TermsConditionsOfUseForDataSources.pdf" distributed with the dataset. Use of the dataset constitutes acceptance of these Terms and Conditions. The dataset may not be used for commercial or revenue-generating activities.

If working with individual taxa (rather than cross-taxon), consider using the original data sources, as they tend to be of higher spatial resolution. In this case, individual
data sources should be credited appropriately (see files "Metadata for Tittensor10Nature_across_taxa.pdf" and "MetadataTittensor10Nature_individual_taxa.pdf" for lists).

Contact organisation: UN Environment World Conservation Monitoring Centre

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</tr>
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<tbody>
<tr>
<td>Name</td>
<td>Dr. Derek Tittensor</td>
<td>Senior Marine Scientist</td>
</tr>
<tr>
<td>City</td>
<td>Cambridge</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>E-mail</td>
<td><a href="mailto:derek.tittensor@unep-wcmc.org">derek.tittensor@unep-wcmc.org</a></td>
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Webpage and/or download: [http://data.unep-wcmc.org/datasets/17](http://data.unep-wcmc.org/datasets/17)

Other webpage: [http://www.arcgis.com/home/item.html?id=0118186f2e144cb38579e477e10e2221](http://www.arcgis.com/home/item.html?id=0118186f2e144cb38579e477e10e2221)

Web map service: [https://gis.unep-wcmc.org/arcgis/rest/services/marine/WCMC_019_PatternsBiodiversity2010/Map Server](https://gis.unep-wcmc.org/arcgis/rest/services/marine/WCMC_019_PatternsBiodiversity2010/Map Server)

Factsheet: [http://wcmc.io/biodiversity-metric](http://wcmc.io/biodiversity-metric)

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Global Map of Shannon's Index of Biodiversity (OBIS)

Description: The dataset shows a global map of Shannon's index of biodiversity, calculated based on data held in the Ocean Biogeographic Information System (OBIS). OBIS (www.iobis.org) is a global network that integrates marine species distribution data from various sources. OBIS was the data integration component of the Census of Marine Life project (www.coml.org), and is the marine sister-network of the Global Biodiversity Information Facility (GBIF; www.gbif.org), and the biodiversity data management component of the Intergovernmental Oceanographic Commission (IOC; http://ioc.unesco.org/).


Temporal range: Up to 26 February 2014

Geographical range: Global

Supplementary information:

Purpose of creation: Grid cells with less than 50 records were coded as 'no data'.

A diversity index is a mathematical measure of species diversity, which provides more information than simply species richness (i.e. the number of species present). For instance, a diversity index provides information about rarity and commonness of species in a given community.

Creation methodology:

Diversity is a function of two factors: number of species ('species richness') and number (i.e. abundance) of specimens belonging to these species ('evenness'). Several indices measuring diversity have been proposed, giving more or less weight to either of these two factors.

Shannon's index takes into account both abundance and evenness of species present in a given community. Here, the index was calculated for 50 records. A high value of the index is representative of a diverse and equally distributed community, and lower values represent less diverse community. A value of 0 represents a community with just one species.
Dataset ID: OBIS-001
Version: 2014

Data lineage:

Category: Biodiversity metric
Keywords: coastal, marine, high seas, species richness, biodiversity, metric, OBIS, UNESCO, COML, GBIF, IOC

Similar datasets: OBIS-002

Limitations: The index is based on records collated from various sources and is thus prone to error in species identification, although only data from authoritative scientists and science organizations approved by OBIS are served. Major gaps in data and knowledge about the oceans are reflected in OBIS' data coverage (see www.iobis.org/data/policy/disclaimer for further details). The content of OBIS is suitable for the study of broad patterns of the distribution of biodiversity; it is not sufficient to allow a detailed analysis on a regional scale, or to study the distribution patterns of individual taxa.

Maintenance frequency: Data are updated in intervals that are uneven in duration.

Main access/use constraint: See 'Other access/use constraint(s)'.

Other access/use constraints: Data use conditions can be accessed at www.iobis.org/data/policy/disclaimer. Data and maps must be cited as per www.iobis.org/about/citation.

Contact organisation: OBIS Secretariat, Intergovernmental Oceanographic Commission (UNESCO)

Organisation type: Resource provider
Acronym: OBIS, IOC

Name: Mr Ward Appeltans
City: Oostende
Email: w.appeltans@unesco.org
Web site: www.iobis.org

Data format(s): Web map service

Distribution format(s): Web map service
Dataset size (uncompressed): Not applicable

Webpage and/or download: http://data.unep-wcmc.org/datasets/15
Other webpage: www.iobis.org/node/214
Web map service: http://iobis.org/geoserver/wms

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<td>North bounding: 90.0</td>
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<td>Date of metadata: 03/11/2015</td>
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Global Map of Hurlbert's Index of Biodiversity (OBIS)

Description: The dataset shows a global map of Hurlbert's index of biodiversity, calculated based on data held in the Ocean Biogeographic Information System (OBIS). OBIS (www.iobis.org) is a global network that integrates marine species distribution data from various sources. OBIS was the data integration component of the Census of Marine Life project (www.coml.org), and is the marine sister-network of the Global Biodiversity Information Facility (GBIF; www.gbif.org), and the biodiversity data management component of the Intergovernmental Oceanographic Commission (IOC; http://ioc.unesco.org/).


Temporal range: Up to 26 February 2014

Geographical range: Global

Supplementary information: Grid cells with less than 50 records were coded as 'no data'.

Purpose of creation: A diversity index is a mathematical measure of species diversity, which provides more information than simply species richness (i.e. the number of species present). For instance, a diversity index provides information about rarity and commonness of species in a given community.

Creation methodology: Diversity is a function of two factors: number of species ('species richness') and number (i.e. abundance) of specimens belonging to these species ('evenness'). Several indices measuring diversity have been proposed, giving more or less weight to either of these two factors.

Hurlbert’s index of biodiversity, also known as ES for 'Expected number of Species', is the expected number of species for a given number of records. It is hence a sample-size independent proxy for species richness that is relatively insensitive to observation bias.

Dataset ID: OBIS-002

Version: 2014

Data lineage:

Category: Biodiversity metric

Keywords: coastal, marine, high seas, metric, species richness, biodiversity, UNESCO, OBIS, GBIF, COML

Similar datasets: OBIS-001

Limitations: The index is based on records collated from various sources and is thus prone to error in species identification, although only data from authoritative scientists and science organizations approved by OBIS are served. Major gaps in data and knowledge about the oceans are reflected in OBIS' data coverage (see www.iobis.org/data/policy/disclaimer for further details). The content of OBIS is suitable for the study of broad patterns of the distribution of biodiversity; it is not sufficient to allow a detailed analysis on a regional scale, or to study the distribution patterns of individual taxa.

Maintenance frequency: Data are updated in intervals that are uneven in duration.

Main access/use constraint: See 'Other access/use constraint(s)'.

Other access/use constraints: Data use conditions can be accessed at www.iobis.org/data/policy/disclaimer. Data and maps must be cited as per www.iobis.org/about/citation.

Contact organisation: OBIS Secretariat, Intergovernmental Oceanographic Commission (UNESCO)

Organisation type: Resource provider

Acronym: OBIS, IOC

Name: Mr Ward Appeltans

Position: Project Manager

City: Oostende

Country: Belgium

E-mail: w.appeltans@unesco.org

Web site: www.iobis.org

Data format(s): Web map service

Distribution format(s): Web map service

Dataset size (uncompressed): Not applicable

Webpage and/or download: http://data.unep-wcmc.org/datasets/16

Other webpage: www.iobis.org/node/214

Web map service: http://iobis.org/geoserver/wms

Factsheet:
Dataset ID: OBIS-002

Resolution, scale: 1 dd  Reference system: WGS 1984
West bounding: -180.0  East bounding: 180.0
South bounding: -90.0  North bounding: 90.0
Metadata standard: UNEP-WCMC Specific  Date of metadata: 03/11/2015
Global Seagrass Species Richness (2003)

Description: This dataset shows the global distribution of seagrass species richness, or global seagrass biodiversity.


Temporal range: 2003

Geographical range: Global

Supplementary information: Attribute table: number of seagrass species (gridcode).

Purpose of creation: The ranges of individual seagrass species were combined so as to produce a layer showing the number of species present in given areas.

Version: 1.0

Data lineage:

Category: Biodiversity metric

Keywords: coastal, marine, blue carbon, seagrass, habitat, biodiversity, species richness

Similar datasets: WCMC-013-014, Mediseh-002

Limitations: The boundaries do not represent actual ranges as seagrass are distributed in waters shallow enough for sunlight to penetrate. No surface area calculations should be attempted.

Maintenance frequency: Data are not being updated.

Other access/use: None

Contact organisation: UN Environment World Conservation Monitoring Centre

Organisation type: Custodian

Name: Lauren Weatherdon

City: Cambridge

E-mail: lauren.weatherdon@unep-wcmc.org

Web site: www.unep-wcmc.org

Data format(s): Vector (polygon; .shp)

Distribution format(s): Vector (polygon; .shp)

Dataset size (uncompressed): 12.8 Mb

Webpage and/or download: http://data.unep-wcmc.org/datasets/9

Other webpage: http://www.arcgis.com/home/item.html?id=602b6f6acb674774925f47e6fb2a61bd

Web map service: https://gis.unep-wcmc.org/arcgis/rest/services/marine/WCMC_015_SeagrassRichness2003/MapServer

Factsheet: http://wcmc.io/biodiversity-metric

Resolution, scale: Not applicable

West bounding: -180.0

South bounding: -48.7

Metadata standard: UNEP-WCMC Specific

Reference system: WGS 1984

East bounding: 180.0

North bounding: 67.4

Date of metadata: 14/09/2015
**ProtectedSeas Marine Area Map**

**Description:**
To maintain long-term ocean health, we need marine managed areas to ensure that special places and life forms are available for future generations. This interactive mapping application provides detailed information on over 7,000 managed saltwater and coastal areas worldwide.

**Citation(s):**
Anthropocene Institute (year). ProtectedSeas Marine Area Map. Available at: https://mpa.protectedseas.net/.

**Temporal range:** Not reported

**Geographical range:** Global

**Supplementary information:**
List of attributes:
- Site ID; Site Name; Zone Name; Website; Country; State; Managing Authority; Level of Government; Designation; Categories; S-57 Category; IUCN Category; WDPA ID; Year Established; Purpose; Restrictions; Allowed; Regulation Name; Regulation URL; Season; Effective From; Effective To; Report Violations; Latest Updates; Protection Focus; Species of Concern.

List of coded activities:
- Removal of Marine Life; Entry; Speed; Discharge; Diving; Removal of Historic Artifacts; Stopping; Anchoring; Landing; Dragging; Dredging; Industrial or Mineral Exploration; Construction; Drilling; Overflight or Drones; Tribal Exemptions; Bottom Trawling; Gillnetting; Hook and Line; Trolling; Nets; Traps and Pots; Spear Fishing; Longlining; Miscellaneous Gear; Recreational Fishing; Commercial Fishing.

Further details:
- Other Helpful Links; Last Attributes Update; Site Location; Boundary Source; Modification Level; Total Area - sq. km; Percent Marine Area; Total Marine Area - sq. km; Last Boundary Update.

For more information, please visit: https://protectedseas.net/mpa-dataset-attribute-list.

**Purpose of creation:**
The goal of our effort is to provide a helpful resource for fishermen and mariners to use on the water and to enhance situational awareness of regulations and conservation measures for long-term marine management. Our U.S. contribution is depicted in this chart, but we could not do it alone. A large portion of boundary
data in our datasets is compiled from federal and state agencies that created the data for marine managed areas under their jurisdiction.

ProtectedSeas is a private effort to encourage ocean conservation and stewardship. Our Marine Managed Area effort is a public-private partnership with the NOAA Marine Protected Area Center.

This map is designed to provide access to boundary and regulation information for areas in U.S. waters that manage extraction of natural living resources (i.e. fishing and take). Primarily intended for mariners and ocean users, these data allow for real-time access to place-based regulation information and details on the variety of prohibitions and restrictions that apply throughout U.S. ocean waters.

We are continually seeking additional contributors and partners to expand the dataset and make it more robust. If you have marine managed areas that you would like included in our datasets, please see our Submit Data page for instructions on how to contribute. Or, if you would like to distribute this data or if you have feedback about existing data, please contact support@protectedseas.net.

### Creation methodology:

ProtectedSeas uses a standardized process to collect, synthesize, and map marine managed areas.

**Restrictions:** The restricted activities listed for each managed area provide a summary of regulations (particular to extraction of natural, living resources) cited in official legislation and do not present the regulations in their entirety. For complete description of the regulations, users need to consult the official record, federal register notice or state/federal code (provided as URL links when available).

**Boundaries:** When available, the boundary data are obtained from the managing agency or authoritative source referenced for each managed area. When these data are not available, have not been drawn or are out-of-date, the boundaries are drafted from coordinates and boundary descriptions cited in state or federal code. Links to online sources/code are provided for each managed area in the site attributes.

Managed area boundaries are created for use at specific spatial scales. State and regional boundaries that cover large areas will often use a low-moderate resolution shoreline to depict the landward boundary of an MPA, while local boundaries that cover small areas will use a higher resolution shoreline. In areas where local and regional scale boundaries overlap, discrepancies between these shorelines (mapped at different scales) will be apparent.

### Version:

Updated monthly

### Data lineage:

The database that supports this application is updated monthly with new boundaries, boundary modifications, updates to regulations and other information obtained through feedback provided from users. Changes made between versions are recorded and published with the downloadable data. If you notice errors for an area, use the feedback button in the area details to let us know!

### Category:

Protected areas and areas of biodiversity importance
Keywords: Marine managed areas, level of protection

Similar datasets: MCI-001, WCMC-016

Limitations:

- Boundaries are approximate. Because GIS projection and topology functions can change or generalize coordinates, the spatial boundaries depicted are considered to be approximate representations and are not an official record for the exact regulated area boundaries.
- Not intended for enforcement purposes. Data are provided as a guide and for informational purposes only, as site boundaries and restrictions may not be up-to-date.
- Regulations are summarized. The information on restricted activities is a distilled summary and does not represent the complete official regulations as cited in the legislative code. Users must refer to the official legislative code (link provided) for the complete official description of regulations and restrictions.
- Multiple restrictions may apply at once. Areas and their related restrictions are not listed in a hierarchical order based on level of restrictions. In areas where there are discrepancies among regulations across varying jurisdictions, it should be assumed that the most restrictive regulations apply.
- Only marine (saltwater/coastal) areas are included. Boundaries and regulations for Inland managed areas are not included in this application.
- Conservation Focus. Areas managed for extraction of natural living resources like fishing and take are the focus of this application. Military closures, vessel traffic areas and areas managed for mainly for recreational and industrial uses may not be included unless they also manage extraction in some form.

Maintenance frequency: Data are updated on a monthly basis.

Main access/use constraint: See 'Other access/use constraint(s)'.

Other access/use constraints: Our full Marine Area Database is available for download in various GIS formats by region under a simple, free license. To learn more or to download the data, please visit our Ocean Data page.

For full 'terms and conditions', please visit: https://protectedseas.net/request-data.

Contact organisation: Anthropocene Institute
Organisation type: Custodian
Acronym: 

Name: City: E-mail: Web site: California support@protectedseas.net https://protectedseas.net/

Position: Country: USA

**Dataset ID:** ProSeas-001

**Data format(s):**
- Online maps, Vector (point; .shp), Vector (polygon; .shp), Vector (polyline; .shp), WMS

**Distribution format(s):**
- Online maps, Vector (point; .shp), Vector (polygon; .shp), Vector (polyline; .shp), WMS

**Webpage and/or download:**
- [https://protectedseas.net/](https://protectedseas.net/)

**Other webpage:** [https://protectedseas.net/mpa-download-data/](https://protectedseas.net/mpa-download-data/)

**Web map service:** [https://services9.arcgis.com/lm7wE8a9YA9rKfzy/arcgis/rest/services/ps_mpa_usa_083018_attributes_text_final_2/FeatureServer](https://services9.arcgis.com/lm7wE8a9YA9rKfzy/arcgis/rest/services/ps_mpa_usa_083018_attributes_text_final_2/FeatureServer)

**Factsheet:**

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<td>UNEP-WCMC Specific</td>
<td>Date of metadata:</td>
<td>04/03/2019</td>
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World Database on Protected Areas

Description:
The World Database on Protected Areas (WDPA) is a joint project between the United Nations Environment Programme (UNEP) and the International Union for Conservation of Nature (IUCN), managed by UNEP World Conservation Monitoring Centre (UNEP-WCMC).

The dataset described here shows the global distribution of terrestrial and marine protected areas as well as sites that do not meet the standard definition of a protected area but do achieve conservation in the long-term, generically referred to as other effective area-based conservation measures (OECMs). Throughout this metadata document, protected areas and OECMs are collectively referred to as conservation areas.

The dataset contains protected areas designated at the national level and under regional and international conventions and agreements. International designations include those under the Ramsar Convention, the World Heritage Convention (United Nations Educational, Scientific and Cultural Organization, UNESCO), and sites under the UNESCO’s Man and the Biosphere Programme (MAB). Regional agreements include sites under the Natura 2000 network (European), as well as Marine Protected Areas designated under regional conventions such as the Convention for the Protection of the marine Environment of the North-East Atlantic (OSPAR) and many others. It also contains data on protected areas and OECMs established by other means.

Citation(s):

Other cited reference(s):


Thomas H.L., et al. (2014). Evaluating official marine protected area coverage for...
Aichi Target 11: appraising the data and methods that define our progress. Aquatic Conservation: Marine and Freshwater Ecosystems 24 (suppl. 2)


Temporal range: 1819 - present

Geographical range: Global, marine, terrestrial

Supplementary information: A WDPA Manual (UNEP-WCMC 2015) is provided with the dataset which includes a data dictionary and guide to interpreting the WDPA attributes. The WDPA can be viewed at, and downloaded from, Protected Planet (www.protectedplanet.net). Juffe-Bignoli et al. (2014) and Deguignet et al. (2014) provide global statistics for protected areas globally in 2014. The methodology used to calculate surface area statistics for terrestrial protected areas is available in Juffe-Bignoli et al. (2014). Thomas et al. (2014) describe the methodology used to calculate surface area statistics for marine protected areas.

Purpose of creation: The WDPA has been in existence since 1981, and is the most comprehensive global database on terrestrial and marine conservation areas, comprising both spatial data (i.e. boundaries) and attribute data (i.e. descriptive information). The mandate of the database dates from 1959 when the United Nations (UN) Economic and Social Council called for a list of national parks and equivalent reserves in recognition that they ‘are valuable for economic and scientific reasons and also as areas for the future preservation of fauna and flora and geologic structures in their natural state’ Resolution 713 (XXVIII). The first UN List of Protected Areas, as it became known, was subsequently published in 1962. The database is also used to generate indicators to track progress towards the Convention on Biological Diversity Aichi Targets and the UN Millennium Development Goals. In March 2015 the WDPA expanded to record OECMs. This allows it to capture other conservation areas that do not meet the standard protected area definition but do achieve conservation in the long-term.

Creation methodology: Data for conservation area records in the WDPA have been obtained from over 600 sources. Along with information on the data verifier, these sources are listed in the source table ("WDPA_Source_Table") that is included in the file geodatabase with each monthly release. Data for protected areas designated under international agreements and conventions have been sourced from the relevant convention secretariats. Data for national-level conservation areas have been sourced from national authorities wherever possible. Information may also be supplemented by data from other agencies, organisations or individuals. All data in the WDPA has been verified either by the national authorities or by non-government expert partners.

Protected areas and OECMs can be differentiated in the database using the PA_DEF (protected area definition) field. A value of 1 indicates compliance with the standard definition of a protected area. A value of 0 indicates that the site does not
meet this definition, but instead qualifies as an OECM.

For detailed information on the WDPA attributes and verification processes the WDPA manual (UNEP-WCMC 2015) should be consulted.

Version: Released monthly

Data lineage: Note that the map shown in the metadata sheet is using the April 2015 release. ProtectedPlanet.net displays the latest version of the dataset.

Category: Protected areas and areas of biodiversity importance

Keywords: Protected Areas, Other Effective Area-based Conservation Measures, Conservation Areas

Similar datasets: None

Limitations: The WDPA dataset is not necessarily a complete representation of all the conservation areas which have been designated in country; the quality of the WDPA depends on the accessibility of accurate, comprehensive, up-to-date conservation areas information from data holders. Thus, mismatches between on the ground conservation areas and conservation areas in the WDPA may be due to a number of reasons that include but are not restricted to: new data being quality checked to fit the WDPA standards, data not submitted to the WDPA yet, new conservation area boundaries not being accurately digitised or simply not yet being digitised. In many areas, several (up to eight) designations overlap; it is hence necessary to dissolve the dataset before any surface area calculation are carried out. Details on the common issues and quality limitations of the WDPA are described in detail in the WDPA Manual (UNEP-WCMC 2015).

The boundaries, names and designations used in this dataset do not imply official endorsement nor acceptance by the United Nations and contributory organisations.

Maintenance frequency: Data are updated on a monthly basis.

Main access/use constraint: UNEP-WCMC WDPA Data Licence. See www.unep-wcmc.org/policies/wdpa-data-licence#data_policy and www.unep-wcmc.org/policies. For commercial use, please contact business-support@unep-wcmc.org.

Other access/use constraints: None

Contact organisation: UN Environment World Conservation Monitoring Centre

Organisation type: Custodian

Acronym: UNEP-WCMC

Name: Dr. Brian MacSharry

Position: PA Information Coordinator

City: Cambridge

Country: United Kingdom

E-mail: protectedareas@unep-wcmc.org

Web site: www.unep-wcmc.org

Data format(s): File geodatabase (.fgdb), KML (.kml or .kmz), Tabular (.xls, .csv, or .tab)
Dataset ID: WCMC-016

Distribution format(s): File geodatabase (.fgdb), KML (.kml or .kmz), Tabular (.xls, .csv, or .tab)

Dataset size (uncompressed): 1.05 Gb (file geodatabase)

Webpage and/or download: http://www.protectedplanet.net/

Other webpage: http://data.unep-wcmc.org/datasets/12
Web map service: https://gis.unep-wcmc.org/arcgis/rest/services/wdpa/wdpa/MapServer

Factsheet: http://wcmc.io/MPA

Resolution, scale: Not applicable
Reference system: WGS 1984
West bounding: -180.0
East bounding: 180.0
South bounding: -90.0
North bounding: 90.0
Metadata standard: UNEP-WCMC Specific
Date of metadata: 29/05/2015
Global Database on Protected Areas Management Effectiveness (GD-PAME)

Description: The Global Database on Protected Area Management Effectiveness (GD-PAME) is the most comprehensive database on protected area management effectiveness (PAME) information. Originally developed at the University of Queensland, it is now a joint effort between the IUCN World Commission on Protected Areas (WCPA) and UN Environment, and is managed by UNEP-WCMC. The aim of the GD-PAME is to compile PAME evaluations for all countries in the world from governments and other authoritative organisations, referred to as data providers. The GD-PAME is hosted on the Protected Planet website, along with the World Database on Protected Areas (WDPA) (www.protectedplanet).

Protected Area Management Effectiveness (PAME) evaluations, can be defined as: “the assessment of how well protected areas are being managed – primarily the extent to which management is protecting values and achieving goals and objectives” (Hockings et al. 2006). Evaluation of management effectiveness is recognised as a vital component of responsive, pro-active protected area management, and the need for national and regional datasets on protected area management effectiveness is reflected in conservation policy.

Citation(s): The following citation should always be clearly reproduced in any publication, presentation or analysis involving the GD-PAME:

UNEP-WCMC and IUCN. (year). Protected Planet: The Global Database on Protected Area Management Effectiveness (GD-PAME) [On-line], [insert month/year of the version downloaded]. Cambridge, UK: UNEP-WCMC. Available at: www.protectedplanet.net

Temporal range: 1966-2014
Geographical range: Global
Supplementary information: None.
Purpose of creation: Evaluation of management effectiveness is recognised as a vital component of responsive, pro-active protected area management. The need for national and regional data sets on protected area management effectiveness is reflected in conservation policy. For example, the Convention on Biological Diversity (CBD) Conference of the Parties (COP) 10 Decision X/31 calls for “…Parties to expand and institutionalize management effectiveness assessments to work towards assessing
60 per cent of the total area of protected areas by 2015 using various national and regional tools, and report the results into the global database on management effectiveness", while Decision XIII/2 encourages Parties to provide management effectiveness information to the Global database on Protected Areas.

Information reported in the Global Database on Protected Area Management Effectiveness (GD-PAME) complements information stored in the World Database on Protected Areas, and helps us to begin assessing the 'effectively managed' aspect of the CBD's Aichi Target 11 on protected areas. While there is now a good understanding of where protected areas are located, information on their effectiveness is much more limited. Countries' PAME information stored in GD-PAME is therefore essential to build knowledge on this aspect of the target, and to evaluate whether gaps in the management of protected areas are being addressed to ensure successful management and biodiversity outcomes.

**Creation methodology:**

**Version:** 1.0 (2018)

**Data lineage:** The GD-PAME was originally developed in 2006 as a research database at the University of Queensland and UNEP-WCMC under a programme jointly funded by WWF and The Nature Conservancy. Since 2014, the database has been compiled and managed by UNEP-WCMC and IUCN-WCPA in collaboration with data providers from governments, non-governmental organisations, academia and industry.

**Category:** Protected areas and areas of biodiversity importance

**Keywords:** Management effectiveness, protected area

**Similar datasets:** WCMC-016

**Limitations:** At present, the database is still incomplete. It must be used with caution and a full understanding of the caveats and fitness for use of the database. Raw assessments provided by countries will not be made available unless permission for sharing is given by the data provider. In addition, it is important to understand that PAME evaluations are specific to a protected area, and it might not always be relevant and accurate to compare PAME evaluations of different protected areas located in different biomes and managed under different context.

**Maintenance frequency:** Data are updated in intervals that are uneven in duration.

**Main access/use constraint:** UNEP-WCMC WDPA Data Licence. See www.unep-wcmc.org/policies/wdpa-data-licence#data_policy and www.unep-wcmc.org/policies. For commercial use, please contact business-support@unep-wcmc.org.

**Other access/use constraints:** Currently subject to review by contributing countries. Not scheduled to be available until June 2018. Data contributors who provide PAME evaluations for inclusion in the GD-PAME are requested to sign the 'GD-PAME Data Contributor Agreement'.

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This ensures that there is a written record of the agreement for the data to be included in the GD-PAME, and allows the data provider to specify the terms under which the data are made available. The agreement specifically states how the data provided will be used and that redistribution or use of the data by third parties will be subject to the Protected Planet Terms of Use.

Contact organisation: UN Environment World Conservation Monitoring Centre

Organisation type: Custodian
Acronym: UNEP-WCMC

Name: Marine Deguignet
Position: Programme Officer
City: Cambridge
Country: United Kingdom
E-mail: protectedareas@unep-wcmc.org
Web site: www.unep-wcmc.org

Data format(s): SQL database

Distribution format(s): Online database, Tabular (.xls, .csv, or .tab)

Dataset size (uncompressed): Not reported

Webpage and/or download: http://www.protectedplanet.net
Other webpage:
Web map service:

Factsheet: Not reported
Resolution, scale: Not applicable
Reference system: Not applicable
West bounding: -180.0
East bounding: 180.0
South bounding: -90.0
North bounding: 90.0
Metadata standard: UNEP-WCMC Specific
Date of metadata: 13/03/2018
Global Distribution of Key Biodiversity Areas

Description:
The dataset shows the global distribution of Key Biodiversity Areas (KBA), Important Bird and Biodiversity Areas (IBA) and Alliance for Zero Extinction (AZE) sites, with a marine component. Under the 'umbrella term', KBA are marine, freshwater and terrestrial sites which contribute significantly to the global persistence of biodiversity at the genetic, species and ecosystem levels. The "KBA network" hence encompasses sites of high biodiversity value of global significance.

The map displays the 2016 version.

Citation(s):
Birdlife International, Conservation International [year]. Global distribution of Key Biodiversity Areas (KBA), Important Bird Areas (IBA) and Alliance for Zero Extinction (AZE) sites. Cambridge (UK): Birdlife International. URL: www.birdlife.org

Other cited references:


Temporal range: 2005-
Geographical range: Global

Supplementary information:
The dataset consists of one polygon layer and one point layer, covering the terrestrial and marine realms. In the 2013 release, points accounted for 7.4% of the sites. In this same release, most 'marine' sites were IBAs. The attribute table does not provide a field to discriminate marine versus terrestrial sites, although marine sites located in the 'high seas' (i.e. in areas beyond national jurisdiction) are marked as 'Marine' (field: REGION) and 'High Seas' (field: COUNTRY).

Attribute table: site record ID number (SITRECID); region of the globe (REGION); country name (COUNTRY); country code (ISO3); national-level site name (NATNAME); international site name (INTNAME, in many cases identical to NATNAME); site code (FINCODE; site ID which encompasses a 2-digit code for the

Purpose of creation:
Key Biodiversity Areas (KBAs) are sites contributing significantly to the global persistence of biodiversity. They are identified by assessment of sites against standard criteria for the presence of threshold levels of significance for threatened biodiversity (based on Red Lists), range-restricted biodiversity, ecological integrity, and biological process. The KBA process is data-driven and species-based, meaning that it can transparently support the identification of marine key biodiversity areas, and help minimise political bias in the planning of marine protected area networks for biodiversity conservation.

Creation methodology:
Although designated at national level, KBA identification follows a set of globally accepted and standardised criteria and thresholds described in IUCN (2016).

AZEs are an important subset of KBAs and are delineated because they contain at least 95% of the known population of one or more Critically Endangered (CE) or Endangered (EN) species (as per IUCN’s Red List of Threatened Species). They are therefore indicative of where a species’ extinction may be imminent if degradation of that area occurs, or threats to the population exist.

Version: 2016

Data lineage: The identification and delineation of KBAs are on-going processes, particularly in the marine realm, and updated versions featuring newly designated sites will be released in the future.

Earlier versions of the dataset contained trigger(s) for the designation (TRIGGERS; VU, endemic, migratory birds/congregations, CR/EN, other, in various combinations).

Category: Protected areas and areas of biodiversity importance
Keywords: coastal, marine, KBA, IBA, AZE, BirdLife International, Conservation International

Similar datasets:

Limitations: Marine KBA identification is complete or in progress in several regions, including the Philippines (where it is complete).

As the dataset may contain overlapping polygons, a dissolve operation (within a GIS) might be needed before surface area calculations are carried out.

Maintenance frequency: Data are updated in intervals that are uneven in duration.

Main access/use constraint: Terms of use for IBA data can be found at www.birdlife.org/datazone/info/dataterms. Commercial use is prohibited without prior written permission of BirdLife International. GIS data requests can be made online at: www.birdlife.org/datazone/info/ibadownload

Other access/use constraints: Terms of use for AZE data can be found at www.zeroextinction.org/pdf/TermsofUseAZEdata_2011.pdf. Commercial use is prohibited without prior written permission of the Alliance. For other KBA data, contact Birdlife International (birdlife@birdlife.org) for terms of use.

Contact organisation: Birdlife International

Name: Custodian

City: Cambridge

E-mail: birdlife@birdlife.org

Web site: www.birdlife.org

Data format(s): Vector (point; .shp), Vector (polygon; .shp)

Distribution format(s): Vector (point; .shp), Vector (polygon; .shp)

Dataset size (uncompressed): 315 Mb

Webpage and/or download: http://www.keybiodiversityareas.org/site/mapsearch

Other webpage: http://maps.birdlife.org/marineIBAs/default.html

Web map service:

Factsheet: http://wcmc.io/KBA

Resolution, scale: Reference system: WGS 1984

West bounding: -180.0

East bounding: 180.0

South bounding: -69.4

North bounding: 81.4

Metadata standard: UNEP-WCMC Specific

Date of metadata: 10/03/2017
Description: This screening layer shows the global spatial distribution of likely or potential Critical Habitat, as defined by the International Finance Corporation’s Performance Standard 6 (IFC PS6) criteria.

The composite Critical Habitat layer draws on 20 global-scale datasets, of which 12 datasets support screening of Critical Habitat in the terrestrial realm and 15 datasets support screening in the marine realm. Datasets were disaggregated into subsets if the underlying attributes aligned with different Critical Habitat criteria.

The raster layer attributes each grid cell (1x1 km) as likely or potential Critical Habitat, or unclassified based on a classification scheme reflecting biodiversity data layer alignment with IFC-PS6 Critical Habitat criteria/scenarios and inherent degree of certainty (in terms of presence on the ground).

Information on underlying trigger features is recorded within the layer attribute table, allowing users to "drill down" into the composite data layer to extract the trigger behind a likely or potential Critical Habitat value.


Other cited reference(s):


Temporal range: 2017
Geographical range: Global
Supplementary information:

Attribute table: CRIT_HAB ; CRITERIA ; C1 ; C2 ; C3 ; C4 ; SC_A ; SC_B. A detailed description of attribute fields and accepted values is included in the metadata supplement. The supplement is provided within the data pack and can be downloaded through the Ocean Data Viewer (http://data.unep-wcmc.org/datasets/44).

Additional information resources can be found at:


Purpose of creation:

The International Finance Corporation’s (IFC’s) Performance Standard 6 (PS6) is one of the most influential biodiversity standards of current time, particularly within large-scale infrastructure and the extractive sector.

Within PS6, biodiversity significance is articulated through the concept of “Critical Habitat,” a definition developed by the IFC and detailed through criteria aligned with those that support internationally accepted biodiversity designations. Critical Habitat criteria identify habitats of significant importance to threatened, endemic, congregatory and migratory species, threatened or unique ecosystems, and key evolutionary processes. PS6 requires projects to achieve net gains in the biodiversity values for which Critical Habitat is identified.

The global screening layer has been developed to assess the likelihood of sites or operations being located within PS6-defined Critical Habitat in the early project scoping phases.

Creation methodology:

Data layers suitable for inclusion in the screening layer were identified based on a global data inventory for the marine realm (Martin et al, 2015) and through expert consultation for the terrestrial realm (Brauneder et al., 2017). Datasets were selected if they met three key criteria: (i) direct relevance to one or more IFC PS6 Critical Habitat criteria/ scenarios, (ii) global extent, and (iii) the best available data of those identified for the purposes of this approach.

Datasets retained for the analysis were classified as likely or potential Critical Habitat based on two variables: alignment of the dataset with the Critical Habitat definition, and certainty of the datasets indicating presence on the ground (i.e. spatial resolution, methodological approach).

Raster and vector data layers identified during the screening exercise were converted into raster layers of 1 km grid-cell size in cylindrical equal-area projection, and classified as likely or potential Critical Habitat. Grid-cell values were assigned upon intersection with the relevant biodiversity features, irrespective of the area of overlap.

The final map is a composite of all underlying layers produced by successively combining individual rasters and retaining the highest class for overlapping grid cells, in order: Likely (purple), potential (Pink) and Unclassified (Grey).
Dataset ID: WCMC-043

Version: 1.0 (2017)

Data lineage: The Global Critical Habitat screening layer results from the amalgamation of two data products which were developed consecutively: the marine component (Martin et al., 2015) and the terrestrial component (Brauneder et al., 2018).

Category: Protected areas and areas of biodiversity importance

Keywords: International Finance Corporation Performance Standard 6, Critical Habitat, Biodiversity safeguards, Key Biodiversity Areas, Protected Areas, Conservation

Similar datasets: WCMC-029

Limitations: Data gaps may occur in terms of completeness and representativeness of underlying datasets. All datasets are subject to errors of commission (stating a feature occurs when it does not) and errors of omission (stating a feature does not occur when it does).

Areas classified as likely or potential Critical Habitat therefore require on-ground validation to confirm screening results and unambiguously determine the presence or absence of Critical Habitat.

Similarly, unclassified areas may include locations for which there are no data available to indicate Critical Habitat, and locations which are not Critical Habitat based on the lower biodiversity values located in that area.

Maintenance frequency: Corrections are made on an ad-hoc basis.


Other access/use constraints: This screening layer is a composite of multiple input layers. For use of individual layers, please refer to the original sources and their respective use restrictions.

Contact organisation: UN Environment World Conservation Monitoring Centre

Organisation type: Custodian

Acronym: UNEP-WCMC

Name: Annelisa Grigg

Position: Head of Programme

City: Cambridge

Country: United Kingdom

E-mail: businessandbiodiversity@unep-wcmc.org

Web site: https://www.unep-wcmc.org/

Data format(s): Raster (ESRI Grid)

Distribution format(s): Raster (ESRI Grid)

Dataset size (uncompressed): 1.94 Gb
Dataset ID: WCMC-043
Webpage and/or download: https://wcmc.io/WCMC_043
Web map service: https://gis.unep-wcmc.org/arcgis/rest/services/marine/WCMC_043_GlobalCH_IFCPS6_2017/MapServer

Factsheet: http://biodiversitya-z.org/content/critical-habitat
Resolution, scale: 1 km (30 arc seconds) Reference system: Cylindrical Equ. Ar.
West bounding: -180.0 East bounding: 180.0
South bounding: -90.0 North bounding: 90.0
Metadata standard: UNEP-WCMC Specific Date of metadata: 22/01/2019
Global Distribution of Vulnerable Marine Ecosystems (VMEs)

Description: This dataset shows the global distribution of Vulnerable Marine Ecosystems (VMEs) in relation to deep-sea fishing activities. Vulnerability is related to the likelihood that a population, community, or habitat will experience substantial alteration from short-term or chronic disturbance, and the likelihood that it would recover and in what time frame. These are, in turn, related to the characteristics of the ecosystems themselves, especially biological and structural aspects. VME features may be physically or functionally fragile. The most vulnerable ecosystems are those that are both easily disturbed and very slow to recover, or may never recover.


Temporal range: 2003 - present
Geographical range: Global
Supplementary information: Attribute table: VME_ID (ID containing owner and unique ID number), OWNER (Owner of the dataset), START_YEAR, END_YEAR, LOCAL_NAME (Name of VME), GLOB_TYPE (Global type e.g. VME), GLOB_NAME (Global name e.g. VME Close Areas), REG_TYPE (Regulation type), REG_NAME (Regulation name) and AREA_SQKM (Surface area covered by VME in square kilometers).

Purpose of creation: In 2006, the FAO was invited by the UN General Assembly to create a global database of information on Vulnerable Marine Ecosystems (VME) in marine Areas Beyond National Jurisdiction (ABNJ), to assist States in assessing any impacts of bottom fisheries on these benthic ecosystems.

Creation methodology: Specific criteria to assist States in defining what VMEs comprise, how to identify...
them and what actions to take once they are identified can be found in FAO (2009).


**Version:** 1.0

**Data lineage:** The database took a few years to develop, and was finally released in 2015. VME's have since been updated.

**Category:** Protected areas and areas of biodiversity importance

**Keywords:** marine, high seas, benthic, pelagic, VME

**Similar datasets:** NEAFC-001

**Limitations:** The following Regional Fisheries Management Organisations (RFMOs) have provided boundary data for VMEs for their areas of competence: Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR), General Fisheries Commission for the Mediterranean (GFCM), Northwest Atlantic Fisheries Organisation (NAFO), North East Atlantic Fisheries Commission (NEAFC), North Pacific Fisheries Commission (NPFC), South East Atlantic Fisheries Organisation (SEAFO) and South Pacific Regional Fisheries Management (SPRFMO).

**Maintenance frequency:** Data are updated in intervals that are uneven in duration.

**Main access/use constraint:** For details regarding FAO Terms and Conditions, please visit: http://www.fao.org/contact-us/terms/en/

**Other access/use constraints:** Please contact Fabio Carocci, Food and Agriculture Organization (FAO) 

**Contact organisation:** Food and Agriculture Organization of the United Nations

**Organisation type:** Custodian

**Acronym:** FAO

**Name:** Fabio Carocci

**Position:** Fishery Research Assistant

**City:** Rome

**Country:** Italy

**E-mail:** Fabio.Carocci@fao.org

**Web site:** www.fao.org

**Data format(s):** Vector (polygon; .shp)

**Distribution format(s):** Vector (polygon; .shp)

**Dataset size (uncompressed):** 561 Kb

**Webpage and/or download:** http://www.fao.org/in-action/vulnerable-marine-ecosystems/background/vme-tools/en/#download_shapefiles
Dataset ID: FAO-002

Web map service:

Factsheet: http://wcmc.io/VME
Resolution, scale: Reference system: WGS 1984
West bounding: -180.0 East bounding: 180.0
South bounding: -90.0 North bounding: 90.0
Metadata standard: UNEP-WCMC Specific Date of metadata: 23/01/2017
Global Distribution of Ecologically or Biologically Significant Marine Areas (EBSAs)

Description: Based on seven scientific criteria, Ecologically or Biologically Significant Marine Areas (EBSAs) delineate specific ocean areas in need of protection. EBSAs are defined as “geographically or oceanographically discrete areas that provide important services to one or more species/populations of an ecosystem or to the ecosystem as a whole, compared to other surrounding areas or areas of similar ecological characteristics, or otherwise meet the [EBSA] criteria” (Secretariat of the Convention on Biological Diversity, 2008).

Citation(s): Secretariat of the Convention on Biological Diversity (CBD) (2015). Areas Meeting the EBSA (Ecologically or Biologically Significant Marine Areas) Criteria (Annex I of Conference of the Parties (COP) 09 Decision IX/20). Compiled by the Marine Geospatial Ecology Laboratory (MGEL), Duke University. URL: https://www.cbd.int/ebsa/


Temporal range: 2008 - present
Geographical range: Global

Supplementary information: Attribute table: NAME (Name of the EBSA), WORKSHOP (Name of Regional Workshop in which the EBSA was designated), EBSA_ID (ID number for EBSA), AREA_MW_KM (Area covered by the EBSA) and GLOBAL_ID (Combination of EBSA_ID and EBSA region).
Contracting Parties of the Convention of Biological Diversity (CBD) are encouraged to apply the scientific criteria and guidance to identify marine areas which are ecologically or biologically significant and/or vulnerable and in need of protection. This process, combined with the use of the best available data and the precautionary and ecosystem approaches, aims to contribute to halting or reducing the rapid loss of marine biodiversity in open ocean waters and deep sea habitats.

There are seven scientific criteria to identify EBSAs in the marine realm: (1) uniqueness or rarity, (2) special importance for life history of species, (3) importance for threatened, endangered or declining species and/or habitats, (4) vulnerability, fragility, sensitivity, slow recovery, (5) biological productivity, (6) biological diversity, and (7) naturalness. Further details can be found in Secretariat of the Convention on Biological Diversity (CBD) (2008) and Ardron et al. (2009).

The 'identification' of EBSAs as part of regional workshops is ongoing. The present dataset contains areas that have been 'described' (in 2015) by Contracting Parties as meeting the EBSA criteria. More EBSAs are expected to be 'described' by Contracting Parties during the upcoming CBD Conference of the Parties in Mexico (2016).

The identification of EBSAs and the selection of conservation and management measures is a matter for States and competent intergovernmental organizations, in accordance with international law, including the UN Convention on the Law of the Sea. Currently, none of the identified EBSAs have a management plan. To be noted is the existence of EBSAs in some territorial waters, e.g. Canada.

Data are updated in intervals that are uneven in duration.

For details regarding CBD Terms of Use for EBSA, please visit: https://www.cbd.int/terms/

Secretariat of the Convention on Biological Diversity

Resource provider | CBD Secretariat - Marine tech | Montreal | Canada | secretariat@cbd.int | www.cbd.int | Vector (polygon; .shp)
Dataset ID: CBD-001

| Distribution format(s): | Vector (polygon; .shp) | Dataset size (uncompressed): | 5.37 Mb |

Webpage and/or download:  [https://www.cbd.int/ebsa/](https://www.cbd.int/ebsa/)
Other webpage: 
Web map service: 

Factsheet:  [http://wcmc.io/EBSA](http://wcmc.io/EBSA)

| Resolution, scale: | Not applicable | Reference system: | WGS 1984 |
| West bounding: | -180.0 | East bounding: | 180.0 |
| South bounding: | -90.0 | North bounding: | 90.0 |
| Metadata standard: | UNEP-WCMC Specific | Date of metadata: | 19/07/2016 |
Global Distribution of Particularly Sensitive Sea Areas (PSSA)

Description: This dataset shows the distribution of 13 Particularly Sensitive Sea Areas (PSSAs). PSSAs are areas designated by the International Maritime Organisation (IMO) and are intended to protect certain marine areas from damage by international maritime activities, such as shipping. The IMO is the United Nations specialised agency for developing and adopting global regulations to prevent marine pollution from ships, with 170 member governments.

A PSSA is an area that needs special protection through action by the IMO because of its significance for recognised ecological, socio-economic, or scientific attributes where such attributes may be vulnerable to damage by international maritime activities.

Citation(s): International Maritime Organisation (2014). Global distribution of Particularly Sensitive Sea Areas (PSSA). URL: http://pssa.imo.org; http://www.maritimemaps.co.uk

Temporal range: Global
Geographical range:
Supplementary information: Attribute table: ID, text, letter, PSSA (Name of PSSA), Latitude, Longitude, Point

Purpose of creation: This dataset was created to show the geographical locations of PSSAs.

Creation methodology: The designation of an area as a PSSA must be proposed by a Member Government (or Governments) to the IMO. Proposal must meet three requirements: (1) the proposal must include information and supporting documentation to show that the proposed area has recognised ecological, socio-economic, or scientific attributes; (2) the proposal must include information and supporting documentation to show that the area is vulnerable from shipping activities; (3) the proposal must state that "associated protective measures" within the competence of the IMO are available to prevent, reduce or eliminate the risk of pollution from shipping activities.

Version: 2016
Data lineage:
Category: Protected areas and areas of biodiversity importance
Keywords: marine, coastal, designation, PSSA

Similar datasets:

Limitations:

Maintenance frequency:

Main access/use constraint: Data are updated in intervals that are uneven in duration.

See 'Other access/use constraint(s)'.

Other access/use constraints: Please contact Andy Hamilton (info@claymoreclan-design.com).

Contact organisation: Claymoreclan Design

Organisation type: Creator

Acronym:

Name: Andy Hamilton

Position: Director

City: Horley

Country: United Kingdom

E-mail: info@claymoreclan-design.com

Web site: www.claymoreclan-design.com

Data format(s): Vector (point; .shp), Vector (polygon; .shp), Vector (polyline; .shp)

Distribution format(s): Vector (point; .shp), Vector (polygon; .shp), Vector (polyline; .shp)

Dataset size (uncompressed): 30 Kb

Webpage and/or download: http://pssa.imo.org

Web map service:

Factsheet: http://wcmc.io/PSSA

Resolution, scale:

Reference system: WGS 1984

West bounding: -179.5

East bounding: 154.0

South bounding: -24.5

North bounding: 67.2

Metadata standard: UNEP-WCMC Specific

Date of metadata: 10/11/2016
Areas of Particular Environmental Interest (APEI)

Description: This dataset shows the distribution of Areas of Particular Environmental Interest (APEI), provisionally adopted by the ISA in 2013 in the Clarion–Clipperton Fracture Zone. The Clarion–Clipperton fracture zone (CCZ) in the equatorial North Pacific is a focal area for mining interests, and is located beyond national jurisdictions. APEIs are a system of deep-sea marine protected areas to safeguard biodiversity and ecosystem function in an abyssal Pacific region targeted for nodule mining.

Citation(s): International Seabed Authority (2012). Areas of Particular Environmental Interest (APEI) as per Decision of the Council relating to an environmental management plan for the Clarion-Clipperton Zone (ISBA/18/C22). URL: https://www.isa.org.jm

Other cited references:

Temporal range: 2012
Geographical range: North Pacific
Supplementary information:
Attribute table: APEI (Unique number for APEI in specific CORNER), LONGITUDE, LATITUDE, CORNER (Geographical location e.g. North-west).

Purpose of creation: The International Seabed Authority (ISA) has been tasked with developing rules and regulations for exploration and extraction of minerals from the deep sea, using the precautionary approach.

Creation methodology: Please refer to Wedding et al. (2013) for details of the expert-driven systematic conservation planning process applied to inform science-based recommendations to the International Seabed Authority.

The spatial dataset was created by UNEP-WCMC using the coordinates specified in ISA (2012; ISBA/18/C22 annex).
Dataset ID: ISA-001

Version: 1.0 (2012)

Data lineage:

Category: Protected areas and areas of biodiversity importance

Keywords: marine, deep sea, high seas

Similar datasets:

Limitations: The dataset has sites only in one region (Pacific), but more sites are anticipated to be designated in the coming years.

Maintenance frequency: Data are updated in intervals that are uneven in duration.

Main access/use constraint: See 'Other access/use constraint(s)'.

Other access/use constraints: Interested users should contact marine@unep-wcmc.org in the first instance.

Contact organisation: International Seabed Authority

Organisation type: Owner

Acronym: ISA

Name: Sandor Mulsow
City: Kingston
E-mail: Sandor.Mulsow@isa.org.jm
Web site: https://www.isa.org.jm

Data format(s): Vector (polygon; .shp)

Distribution format(s): Vector (polygon; .shp)

Dataset size (uncompressed): 26.2 Kb

Webpage and/or download: https://www.isa.org.jm

Other webpage:


Factsheet:

Resolution, scale:

West bounding: -155.1
South bounding: 2.9

Metadata standard: UNEP-WCMC Specific

Reference system: WGS 1984

East bounding: -119.6
North bounding: 20.7

Date of metadata: 25/06/2015

Global Shark Distribution Database (2011)

Description: Sharks are one of the most threatened groups of marine animals, as high exploitation rates coupled with low resilience to fishing pressure have resulted in population declines worldwide. Designing conservation strategies for this group depends on basic knowledge of the geographic distribution and diversity of known species. So far, this information has been fragmented and incomplete.

This represents the first global database of shark distributions.

Citation(s): To cite the original paper: Lucifora LO, García VB, Worm B. (2011). Global diversity hotspots and conservation priorities for sharks. PLOS ONE 6(5): e19356. doi: 10.1371/journal.pone.0019356

To cite the database: Lucifora LO, García VB, Worm B. (2011). The Global Shark Distribution Database.

Temporal range: 1878 - Present

Geographical range:

Supplementary information:

Purpose of creation: Here we (1) determine global richness and endemism hotspots for sharks and evaluate their usefulness for area prioritization for conservation; (2) compare global shark richness hotspots with hotspots for species threatened by the fin trade; (3) determine global hotspots for shark functional diversity – as measured by the richness of shark ecomorphotypes (see methods) – and (4) discuss conservation measures required to preserve sharks at the global scale.

Creation methodology: The authors' synthesized the first global shark diversity pattern from a new database of published sources, including all 507 species described at present, and identified hotspots of shark species richness, functional diversity and endemicity from these data. They evaluated the congruence of these diversity measures and demonstrate their potential use in setting priority areas for shark conservation. Their results show that shark diversity across all species peaks on the continental shelves and at mid-latitudes (30–40 degrees N and S). Global hotspots of species richness, functional diversity and endemicity were found off Japan, Taiwan, the East and West coasts of Australia, Southeast Africa, Southeast Brazil and Southeast USA.
Moreover, some areas with low to moderate species richness such as Southern Australia, Angola, North Chile and Western Continental Europe stood out as places of high functional diversity. Finally, species affected by shark finning showed different patterns of diversity, with peaks closer to the Equator and a more oceanic distribution overall. The results show that the global pattern of shark diversity is uniquely different from land, and other well-studied marine taxa, and may provide guidance for spatial approaches to shark conservation. However, similar to terrestrial ecosystems, protected areas based on hotspots of diversity and endemism alone would provide insufficient means for safeguarding the diverse functional roles that sharks play in marine ecosystems.

For a detailed methodology, please see Lucifora et al. (2011).

Version: 2011
Data lineage: Original dataset developed and published by Lucifora et al. (2011).
Category: Protected areas and areas of biodiversity importance
Keywords: sharks, diversity, biogeography, species richness, endemicity, functional diversity

Similar datasets: GBIF-001, OBIS-003

Limitations: Several caveats apply to our approach, which is necessarily based on existing, published knowledge. Most importantly, the existing knowledge is biased towards well-known species and regions. Our database reveals low data density and resulting increased uncertainty in the deep-sea and open ocean. Much more work is needed to resolve fine-scale distribution patterns in those habitats. We further note that our results should be applied cautiously with respect to reserve design. In addition to the abovementioned uncertainties we have not incorporated important ecological (e.g. dispersal and connectivity) or human-related variables (e.g. levels of exploitation) that may affect reserve design, and have not explicitly considered the costs and benefits of different conservation solutions. Nevertheless, our results do suggest that protected areas designed to conserve different shark communities would likely need to be very large, especially in oceanic waters. The inclusion of additional ecological criteria, such as connectivity among reserves, may lead to even larger priority areas, perhaps beyond the possibility of effective enforcement.

For more information, please see Lucifora et al. (2011).

Maintenance frequency: Data are not being updated.
Main access/use constraint: Creative Commons Attribution 3.0 Unported (CC BY 3.0). See http://creativecommons.org/licenses/by/3.0/ for details. Free to (1) copy/distribute/transmit the work, (2) adapt the work, and (3) make commercial use of the work.

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Large Marine Ecosystems of the World (2013)

Description: This dataset shows the boundaries of the 66 Large Marine Ecosystems (LMEs) of the world. LMEs are natural regions of ocean space encompassing coastal waters from river basins and estuaries to the seaward boundary of continental shelves and the outer margins of coastal currents.

Citation(s): NOAA Fisheries (2013). Large Marine Ecosystems (LMEs) of the World (66). Large Marine Ecosystem Program, Narragansett Laboratory, Rhode Island (USA). URL: http://www.lme.noaa.gov

Other cited references(s): Skjoldal HR, Mundy P (2013). Large Marine Ecosystems (LMEs) of the Arctic area. Revision of the Arctic LME map. PAME (Protection of the Arctic Marine Environment) and Arctic Council.

Temporal range: 2013
Geographical range: Global
Supplementary information: Attribute table: LME identification number (LME_NUMBER), LME name (LME_NAME).

Purpose of creation: Since 1984, the NOAA Fisheries Service's Large Marine Ecosystems (LME) Program has been engaged in the development and implementation of an ecosystem-based approach to support assessment and management of marine resources and habitats. Five linked program modules have been developed for introducing the LME approach: productivity, fish and fisheries, pollution and ecosystem health, socioeconomics, and governance. Taken together, these modules provide time-series measurements used to support actions for the recovery, sustainability, and management of marine resources and habitats. A global effort is underway by NOAA in partnership with the World Conservation Union (IUCN), the UN's Intergovernmental Oceanographic Commission (IOC), and other UN agencies to improve the long-term sustainability of resources and environments of the world's 66 LMEs and linked watersheds. Scientific and technical assistance is provided to developing countries committed to policies and actions for eliminating transboundary environmental and resource-use practices that lead to serious degradation of coastal environments and their linked watersheds, and to losses in biodiversity and food security.
LMEs are relatively large regions of 200,000 sq-km or greater, the natural boundaries of which are based on four ecological criteria: bathymetry, hydrography, productivity, and trophically related populations.

Version: July 2013

Data lineage: In the 2013 release, two new LMEs were added for the Aleutian Islands (LME #65) and the Canadian High Arctic – North Greenland (LME #66). All of the boundaries for the Arctic LMEs were changed to reflect the revisions as outlined in Skjoldal and Mundy (2013).

Category: Biogeographic classification

Keywords: marine, coastal, boundaries, LME

Similar datasets:

Limitations: LME 'coastline' boundaries are relatively coarse.

Maintenance frequency: Data are updated in intervals that are uneven in duration.

Main access/use constraint: See 'Other access/use constraint(s)'.

Other access/use constraints: The dataset must be cited when used. See 'Citation' for guidance.

Contact organisation: Large Marine Ecosystem Program, National Oceanic and Atmospheric Administration-Fisheries

Organisation type: Owner

Acronym: NOAA

Name: Kenneth Sherman

Position: Director

City: Narragansett

Country: Rhode Island (USA)

E-mail: Kenneth.Sherman@NOAA.gov

Web site: www.lme.noaa.gov

Data format(s): Vector (polygon; .shp)

Distribution format(s): Vector (polygon; .shp)

Dataset size (uncompressed): 10.2 Mb

Webpage and/or download: http://www.lme.noaa.gov

Other webpage:

Web map service:

Factsheet:

Resolution, scale: Reference system: WGS 1984

West bounding: -180.0 East bounding: 180.0

South bounding: -85.5 North bounding: 90.0

Metadata standard: UNEP-WCMC Specific

Date of metadata: 25/06/2015
Longhurst Biogeographical Provinces (2006)

Description: The dataset represents the division of the world oceans into provinces as defined by Longhurst (1995; 1998; 2006). The division has been based on the prevailing role of physical forcing as a regulator of phytoplankton distribution. The dataset contains the initial static boundaries developed at the Bedford Institute of Oceanography, Canada.

At the first level of reduction, Longhurst recognised four principal biomes: the Polar biome, the Westerlies biome, the Trade winds biome, and the Coastal biome. These four biomes are recognised in every major ocean basin. At the next level of reduction, the ocean basins are divided into provinces, roughly ten for each basin.


Related publications:

Geographical range: Global

Supplementary information: Full metadata can be found here: http://geonetwork.vliz.be/geonetwork/srv/eng/catalog.search#/metadata/6fba18ff-33c1-4bc7-90da-f3a30f7bd748.
Purpose of creation: These regions provide a template for data analysis or for making parameter assignments on a global scale.

Creation methodology:

1. Information received with the latitudes, longitudes and name of the Longhurst Province.
2. Creation of a 1x1° grid
3. Spatial join between grid and downloaded information
4. Dissolve based on name
5. Erase continents

Version:


Category: Biogeographic classification

Keywords: marine, coastal, maritime zones, biogeography

Similar datasets: WCMC-036

Limitations: The Flanders Marine Institute manages Marine Regions, but is aware that it is not complete and undoubtedly contains errors. The Flanders Marine Institute cannot be made responsible for any errors or misuse of data contained in this register. Comments from our users are more than welcome, so if you come across any error or incomplete information or you are willing to contribute to this initiative please contact us. The data is provided "as is", and no warranty express, implied or otherwise is offered as to the data’s accuracy. The developers do not imply any opinion concerning the legal status of any country, territory or area, or concerning the delimitation of its frontiers or boundaries.

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.

Remarks and corrections can be sent to info@marineregions.org.

Maintenance frequency:

Data are updated in intervals that are uneven in duration.

Main access/use constraint: Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0)
https://creativecommons.org/licenses/by-nc-sa/4.0/

Other access/use constraints: The data can be used for educational, scientific or research purposes but should not be used for legal, commercial/ economical (exploration of natural resources), military or navigational purposes. Anyone can download this data but it is for the sole use of the organization or individual downloading the data. The geodata may not be redistributed without the permission of the Flanders Marine Institute (VLIZ).

The geodata may be used in a Value-Added Software Application (like web services), on condition that the Flanders Marine Institute is acknowledged as the source of the data. Redistribution rights are granted for hard-copy renditions or static, electronic map images (e.g., jpeg, gif, etc.) that are plotted, printed or
publicly displayed with reference to the Flanders Marine Institute.

For redistribution rights of derived products, please contact us at info@marineregions.org

**Contact organisation:** Flanders Marine Institute

**Organisation type:** Resource provider

**Acronym:** VLIZ

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<th>Position</th>
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Webpage and/or download: [http://www.marineregions.org](http://www.marineregions.org)

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Web map service: [http://geonetwork.vliz.be/geonetwork/srv/eng/catalog.search-/metadata/6fba18ff-33c1-4bc7-90da-f3a30f7bd748](http://geonetwork.vliz.be/geonetwork/srv/eng/catalog.search-/metadata/6fba18ff-33c1-4bc7-90da-f3a30f7bd748)

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This dataset combines two separately published datasets: the “Marine Ecoregions Of the World” (MEOW; 2007) and the “Pelagic Provinces Of the World” (PPOW; 2012). These datasets were developed by Mark Spalding and colleagues in The Nature Conservancy. Alongside the individual authors, partners for the MEOW layer included WWF, Ramsar, WCS, and UNEP-WCMC. The ecoregions and pelagic provinces are broadly aligned with each other and are non-overlapping.

The MEOW dataset shows a biogeographic classification of the world's coastal and continental shelf waters, following a nested hierarchy of realms, provinces and ecoregions. It describes 232 ecoregions, which lie within 62 provinces and 12 large realms. The regions aim to capture generic patterns of biodiversity across habitats and taxa, with regions extending from the coast (intertidal zone) to the 200 m depth contour (extended beyond these waters out by a 5 km buffer).

The PPOW dataset shows a biogeographic classification of the surface pelagic (i.e. epipelagic) waters of the world's oceans. It describes 37 pelagic provinces of the world, nested into four broad realms. A system of seven biomes are also identified ecologically, and these are spatially disjoint but united by common abiotic conditions, thereby creating physiognomically similar communities.

Citation:

Citations for the separate entities:

Spalding MD, Agostini VN, Rice J, Grant SM (2012). Pelagic provinces of the world):

Temporal range: 2007 and 2012
Geographical range: Global
Supplementary information: Attribute table: MEOW or PPOW (TYPE); realm name (REALM); province name (PROVINC); MEOW name (ECOREGION); PPOW biome (BIOME). The dataset is provided in two versions: one clipped to a coastline (version 2.3.4 of UniHaw-001) and one left extending onto land masses (so that users can clip it to their preferred coastline).

Purpose of creation: This dataset was developed to address the need for a detailed, biogeographic system to classify the oceans. It provides better spatial resolution than earlier global systems, but may also be cross-referenced to many regional biogeographic classifications.

Creation methodology: MEOW: The classification was partly derived from existing classifications. Full methodology is given in Spalding et al (2007).
PPOW: The classification draws both on known taxonomic biogeography, and on the oceanographic forces which are major drivers of ecological patterns. Full methodology is given in Spalding et al (2012).
MEOW+PPOW: The MEOW and PPOW datasets were combined such that the MEOW dataset takes precedence, and the PPOW dataset appears outside the MEOW dataset (i.e. everywhere where the MEOW data is not present).

Version: 1.0 (May 2015)
Data lineage: In May 2015, UNEP-WCMC combined the "Marine Ecoregions of the World" (MEOW; WCMC-017) with the "Pelagic Provinces of the World" (PPOW; WCMC-018), so as to create a single dataset (MEOW+PPOW); WCMC-036), distributed on the Ocean Data Viewer. This combined dataset (version 1.0) should be used for all purposes, particularly spatial analyses.

UNEP-WCMC also corrected a number of geographic errors in WCMC-036 (e.g. spaces between vertices prevented the map from projecting correctly into projections where the earth’s outline is curved; geographic extent, etc). These errors have not been corrected in WCMC-017 and WCMC-018.

Category: Biogeographic classification
Keywords: marine, coastal, high seas, pelagic
Similar datasets: WCMC-017, WCMC-018, VLIZ-007, WWF-001
Limitations: The proposed boundaries represent approximate boundaries of habitats or community composition, which might shift depending on weather and oceanographic conditions, seasons, or longer term climate change.
There is a possible mismatch involving where the East Siberian Sea meets the Chukchi Sea.

There may be overlapping polygons (consider dissolving before spatial analyses).

Maintenance frequency: Data are not being updated.


Other access/use constraints: None

Contact organisation: The Nature Conservancy

Organisation type: Resource provider

Acronym: TNC

Name: Mark Spalding
City: Cambridge
E-mail: mspalding@TNC.org
Web site: http://www.nature.org/
Data format(s): Vector (polygon; .shp)
Distribution format(s): Vector (polygon; .shp)
Dataset size (uncompressed): 274 Mb

Webpage and/or download: http://dx.doi.org/10.1641/B570707; 10.1016

Other webpage: http://dx.doi.org/10.1016/j.ocecoaman.2011.12.016

Web map service: https://gis.unep-wcmc.org/arcgis/rest/services/marine/WCMC_036_MEOW_PPOW_2007_2012/MapServer

Factsheet: http://wcmc.io/PPOW

Resolution, scale: Not applicable
West bounding: -180.0
South bounding: -90.0
Metadata standard: UNEP-WCMC Specific

Reference system: WGS 1984
East bounding: 180.0
North bounding: 90.0
Date of metadata: 29/01/2016
Description: To develop marine biogeographic realms, the distribution of 65,000 species of marine animals and plants were analyzed, distinguishing 30 distinct marine realms -- a similar proportion per area as found for land. On average, 42% of species are unique to the realms. This dataset identifies 18 continental-shelf and 12 offshore deep-sea realms, reflecting the wider ranges of species in the pelagic and deep-sea compared to coastal areas. The most widespread species identified were pelagic microscopic plankton and megafauna, with an analysis of pelagic species recognizing five realms within which other realms are nested. These maps integrate the biogeography of coastal and deep-sea, pelagic and benthic environments, and show how land-barriers, salinity, depth, and environmental heterogeneity relate to the evolution of biota.


Temporal range: 1756 - 2009
Geographical range: Global

Supplementary information: For Further supplementary information see :
Supplementary information : https://static-content.springer.com/esm/art%3A10.1038%2Fs41467-017-01121-2/MediaObjects/41467_2017_1121_MOESM1_ESM.pdf

Peer review file: https://static-content.springer.com/esm/art%3A10.1038%2Fs41467-017-01121-2/MediaObjects/41467_2017_1121_MOESM2_ESM.pdf

Description of Additional Supplementary Files: https://static-content.springer.com/esm/art%3A10.1038%2Fs41467-017-01121-2/MediaObjects/41467_2017_1121_MOESM3_ESM.pdf

Supplementary Data: https://static-content.springer.com/esm/art%3A10.1038%2Fs41467-017-01121-2/MediaObjects/41467_2017_1121_MOESM4_ESM.csv
These maps integrate the biogeography of coastal and deep-sea, pelagic and benthic environments, and show how land-barriers, salinity, depth, and environmental heterogeneity relate to the evolution of biota. The realms have applications for marine reserves, biodiversity assessments, and as an evolution relevant context for climate change studies.

For full methodology, please refer to Costello et al. (2017).

Creation methodology:

For full methodology, please refer to Costello et al. (2017).

Version: 1.0 (2017)

Data lineage: This dataset uses data records extracted from OBIS, up to 2009.

Category: Biogeographic classification

Keywords: marine, coastal, habitat, realm, biogeography, biodiversity, ecoregion

Similar datasets: WCMC-017, WCMC-018, WCMC-036

Limitations: All measures of endemicity are indices that are sensitive to the dataset from which they have been calculated. Further sampling may find endemic species to be more widespread, but it will also find more species, and the number of endemics increases with species richness as found in the present study.

Sampling effort is known to be very unequal between regions of the ocean, and tens of thousands of species remain to be discovered in some of the most species-rich areas of the oceans. These yet to be discovered species will generally be more endemic, because widespread species are discovered earlier. Thus, they may subdivide and refine the boundaries of the realms found here rather than change their general location.

Additionally, marine species may be reclassified under new genera multiple times by different authors. As a consequence, using higher taxa may add error to analyses of biogeographic endemicity.

It may also be argued that ocean biogeography should be considered in four dimensions (e.g. latitude, longitude, depth, and time) rather than the two-dimensional approach taken here.

For full limitations and discussions, please refer to Costello et al. (2017).

Maintenance frequency: Data are not being updated.

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Dataset ID: UniAuk-001

**Other access/use constraints:** None.

**Contact organisation:** Institute of Marine Science, University of Auckland, Auckland

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<tr>
<th>Name:</th>
<th>Mark J. Costello</th>
<th>Position:</th>
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<tr>
<td>E-mail:</td>
<td><a href="mailto:m.costello@auckland.ac.nz">m.costello@auckland.ac.nz</a></td>
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**Webpage and/or download:** [https://figshare.com/articles/GIS_shape_files_of_realm_maps/5596840](https://figshare.com/articles/GIS_shape_files_of_realm_maps/5596840)

**Other webpage:**

**Web map service:**

**Factsheet:** [http://www.biodiversitya-z.org/content/biogeographic-classification-marine](http://www.biodiversitya-z.org/content/biogeographic-classification-marine)

**Resolution, scale:** 10 degrees

**Reference system:** WGS 1984

**West bounding:**

**East bounding:**

**South bounding:**

**North bounding:**

**Metadata standard:** UNEP-WCMC Specific

**Date of metadata:** 22/01/2019
Seafloor Geomorphic Features Map (2014)

Description: Presents the first digital seafloor geomorphic features map (GSFM) of the global ocean. The GSFM includes 131,192 separate polygons in 29 geomorphic feature categories, used here to assess differences between passive and active continental margins as well as between 8 major ocean regions (the Arctic, Indian, North Atlantic, North Pacific, South Atlantic, South Pacific and the Southern Oceans and the Mediterranean and Black Seas).

The GSFM provides quantitative assessments of differences between passive and active margins: continental shelf width of passive margins (88 km) is nearly three times that of active margins (31 km); the average width of active slopes (36 km) is less than the average width of passive margin slopes (46 km); active margin slopes contain an area of 3.4 million km2 where the gradient exceeds 5°, compared with 1.3 million km2 on passive margin slopes; the continental rise covers 27 million km2 adjacent to passive margins and less than 2.3 million km2 adjacent to active margins.

Citation(s):
To cite the dataset:

To cite the paper:

Temporal range: 2014
Geographical range: Global
Supplementary information: None.
Purpose of creation: Examples of specific applications of the GSFM are presented to show that:

1) larger rift valley segments are generally associated with slow-spreading rates and smaller rift valley segments are associated with fast spreading;
2) polar submarine canyons are twice the average size of non-polar canyons and abyssal polar regions exhibit lower seafloor roughness than non-polar regions, expressed as spatially extensive fan, rise and abyssal plain sediment deposits all
of which are attributed here to the effects of continental glaciations; and
3) recognition of seamounts as a separate category of feature from ridges results in
a lower estimate of seamount number compared with estimates of previous
workers.

The GSFM is based on interpretation of the Shuttle Radar Topography Mapping
(SRTM30_PLUS) 30-arc second database (Becker et al., 2009). SRTM30_PLUS data
were supplemented in two areas, around Australia (Whiteway, 2009) and on the
European continental shelf (EMODNet, 2013), with additional data sources (Fig. 1).
In all cases the data were reduced to a uniform grid spacing of 30 arc sec (~ 1 km) to
ensure consistency in the interpretation of the data. Interpretation of geomorphic
features was based on contoured data, false colour shaded relief, analysis of slope
and other tools from ArcGIS as described in detail below for each of the geomorphic
feature types.

The output of this project is a series of ArcGIS data layers; we will refer throughout
this report to geomorphic feature “data layers”, as defined by ArcGIS. Features
were mapped using one or more of three generalised methods: 1) manual
digitisation; 2) algorithm-assisted manual digitisation; and 3) algorithm digitisation
with visual check. Details of the approach taken for each layer are outlined in the
following sections.

Manual digitisation and algorithm-assisted digitisation were carried out at a spatial
scale of 1:500,000 (unless otherwise indicated), guided mainly by bathymetric
contours at 10 m intervals (continental shelf), 50 m intervals (Antarctic continental
shelf) and 100 m intervals (all other ocean areas). The selection of these contour
intervals is based on the vertical resolution of the SRTM30_PLUS, which is ~ 100 m
in deep sea areas where satellite altimeter data are used. The SRTM30_PLUS
bathymetry is based on a new satellite-gravity model where the gravity-to-
topography ratio is calibrated using 298 million edited soundings, which come from
a number of different sources (see Becker et al., 2009, for details). The existing
satellite gravity model (Smith and Sandwell, 1997) is then fitted to the edited
sounding dataset to produce the SRTM30_PLUS grid. The satellite gravity model
extends only to 80° latitude, so the Arctic Ocean bathymetric model of Jakobsson et
al. (2008) is incorporated into the SRTM30_PLUS grid.

Version: 2014
Data lineage: Please refer to Harris et al. (2014).
Category: Biogeographic classification
Keywords: marine, coastal, high seas, deep sea, benthic, geomorphology, bathymetry,
seafloor processes, global

Similar datasets: UniSyd-001
Limitations: Please refer to Harris et al. (2014).

Maintenance frequency:
Main access/use constraint: Creative Commons Attribution 4.0 Unported (CC BY 4.0). See
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redistribute the material in any medium or format, (2) remix, transform, and build upon the material for any purpose, even commercially. You must give appropriate credit, provide a link to the license, and indicate if changes were made. You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use. You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits.

Other access/use constraints: None.

Contact organisation: GRID-Arendal
Organisation type: Creator Acronym:

Name: Position: Country:
City: E-mail:
Web site:
Data format(s): Online maps
Distribution format(s): Online maps, Vector (point; .shp), Vector (polygon; .shp), Vector (polyline; .shp)
Dataset size (uncompressed): 389 MB

Webpage and/or download: http://www.bluehabitats.org/?page_id=58
Other webpage:
Web map service:

Factsheet:
Resolution, scale: 1:500,000 (variable) Reference system: WGS 1984
West bounding: East bounding:
South bounding: North bounding:
Metadata standard: UNEP-WCMC Specific Date of metadata: 04/03/2019

Description: This dataset shows the global distribution of over 1,300 estuaries, including some lagoon systems and fjords. The majority of estuaries are represented by polygons, except for 44 records for which points are available. This dataset was developed by Sea Around Us (www.seaaroundus.org).


Temporal range: 2003
Geographical range:
Supplementary information: Attribute table: estuary ID number (ID Number), estuary name (LABEL), ISO3 country code (COUNTRY), continent (CONTINENT), average discharge in m3.s-1 (cubic metres per second) (DISCHARGE), the years between which the discharge was measured (YEAR_START, YEAR_END), river system (RIVER_SYS), data sources (REF1, REF2).

Data sources can be accessed by matching the number in the attribute table (REF1, REF2) with the associated record in the excel file ("UBC-003-SAU-Estuaries2003-References.xlsx") which accompanies the data.

Purpose of creation: The global estuary database is the first to be designed at a global scale and the first to include digitized shape cells for each estuary. The dataset was created by Sea Around Us (http://www.seaaroundus.org/).

Creation methodology: Water bodies were selected so as to include the estuaries of all the world’s major rivers, as well as the small estuaries of countries without major rivers. As such, no specific minimum size/discharge was applied to determine inclusion of estuaries in the dataset. The information has been gathered from a large number of sources, including reports, journals and electronic resources. Overall, the database accounts
for over 80% of the world's freshwater discharge, and contains information about the name, location, surface area (in km²) and mean freshwater input (in m³.s⁻¹) (cubic metres per second), calculated over a specified number of years.

In 2014, the "Sea Around Us" (University of British Columbia), provided UNEP-WCMC with two spatial datasets: (1) a polygon dataset with no attribute information (apart from ID_NUMBER), and (2) a point dataset with detailed attribute and source information. Using the matching estuary ID numbers, UNEP-WCMC populated the polygon dataset’s attribute table (“UBC-003-SAU-Estuaries2003-Polygons.shp”) with the relevant information from the point dataset. Where an estuary did not have a corresponding polygon, the information has been retained as point data (“UBC-003-SAU-Estuaries2003-Points-woCorrespondingPolygon.shp”): this dataset (and the original point dataset “UBC-003-SAU-Estuaries2003-AllPoints.shp”) are not distributed.

Version: 2.0 (2014)

Data lineage: This is a modified version of the 2003 version of the dataset. See ‘Creation methodology’ for details.

Category: Biogeographic classification

Keywords: Estuaries, coastal, marine

Similar datasets: None

Limitations: There appears to be shifting in some locations. The dataset is not comprehensive and does not include every estuary in the world. The estuaries included are of varying spatial resolutions. These data also include some lagoons and fjords.

Maintenance frequency: Data are not being updated.


Other access/use constraints: Please cite the data source in all publications.

Contact organisation: Sea Around Us, University of British Columbia

Organisation type: Owner

Acronym: UBC

Name: Dr. Dirk Zeller

Position: Senior Researcher

City: Vancouver

Country: Canada

E-mail: d.zeller@fisheries.ubc.ca

Web site: www.seaaroundus.org

Data format(s): Vector (point; .shp), Vector (polygon; .shp)
Dataset ID: UBC-003

| Distribution format(s): | Vector (polygon; .shp) | Dataset size (uncompressed): | 4.8 Mb |

Webpage and/or download:  [http://data.unep-wcmc.org/datasets/23](http://data.unep-wcmc.org/datasets/23)

Other webpage:  [www.searoundus.org](http://www.searoundus.org)

Web map service:  [https://gis.unep-wcmc.org/arcgis/rest/services/marine/UBC_003_SAU_Estuaries/MapServer](https://gis.unep-wcmc.org/arcgis/rest/services/marine/UBC_003_SAU_Estuaries/MapServer)

Factsheet:  [www.marbef.org/wiki/estuaries](http://www.marbef.org/wiki/estuaries)

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Coral Ecoregions of the World (2009)

Description: This dataset shows the global distribution of 141 coral ecoregions, delineated on the basis of known internal faunal and/or environmental uniformity and external distinctiveness from neighbouring regions.


Temporal range: 2009

Geographical range: Global

Supplementary information: Attribute table: ecoregion name (ECONE); total number of coral species (SUMOTOT_S); coral diversity (diversity); coral endemism, level 1 (Endem_1); coral endemism, level 2 (Endem_2); coral endemism, level 3 (Endem_3).

Purpose of creation: The findings reported in the associated peer-reviewed paper provide a clear scientific justification for the Coral Triangle Initiative, arguably one of the world’s most significant reef conservation undertakings.

Creation methodology: The 798 species maps in the "Coral Geographic" database ("TNC-003-CoralEcoregions2009.mdb") were divided into 141 ecoregions. See Veron et al. (2009) for further details.

Version: 1.0

Data lineage: Category: Biogeographic classification

Keywords: marine, corals, ecoregion, endemism

Similar datasets: Limitations: Data are comprehensive to the level of ecoregions, but are insufficient for some regions and are not necessarily representative of subdivisions of ecoregions.
Dataset ID: TNC-003

Maintenance frequency: Data are not being updated.

Main access/use constraint: See 'Other access/use constraint(s)'.

Other access/use constraints: Please contact j.veron@coralreefresearch.com

Contact organisation: Coral Reef Research

Organisation type: Resource provider

Acronym:

Name: John Veron

Position:

City:

Country:

E-mail: j.veron@coralreefresearch.com

Web site:

Data format(s): Vector (polygon; .shp)

Distribution format(s): Vector (polygon; .shp)

Dataset size (uncompressed): 37.1 Mb

Webpage and/or download: https://www.jstage.jst.go.jp/article/galaxea/11/2/11_2_91/_pdf

Other webpage:

Web map service:

Factsheet:

Resolution, scale: Not applicable

Reference system: WGS 1984

West bounding: -180.0

East bounding: 180.0

South bounding: -90.0

North bounding: 90.0

Metadata standard: UNEP-WCMC Specific

Date of metadata: 23/06/2015
**Description:** This dataset shows the global distribution of seamounts and knolls identified using global bathymetric data at 30 arc-sec resolution. A total of 33,452 seamounts and 138,412 knolls were identified, representing the largest global set of identified seamounts and knolls to date. Seamount habitat was found to constitute approximately 4.7% of the ocean floor, whilst knolls covered 16.3%. The research leading to these results received funding from the European Community’s Seventh Framework Programme, and from the International Union for Conservation of Nature (IUCN).


**Temporal range:** 2011

**Geographical range:** Global

**Supplementary information:** The dataset is composed of point and polygon vectors. The polygon subset indicates the location of the base, whilst the point subset is the centroid of that area.

**Purpose of creation:** Seamounts and knolls provide important habitats for marine predators, demersal deep-sea fish and benthic invertebrates. Most seamounts, however, have not been surveyed and their numbers and locations are not well known. Previous efforts to locate and quantify seamounts have used relatively coarse bathymetry grids.

The database of seamounts and knolls resulting from this study will be a useful resource for researchers and conservation planners.

**Creation methodology:** Seamount and knoll locations were inferred, using a searching algorithm, from bathymetric data at 30 arc-sec resolution (SRTM30_PLUS, version 6, which is based on a satellite-gravity model). See Yesson et al. (2011) for full details.
Estimated seamount numbers, locations, and depths were compared with validation sets of seamount data from New Zealand and Azores. This comparison indicated that the method applied found 94% of seamounts, but may have overestimated seamount numbers along ridges and in areas where faulting and seafloor spreading create highly complex topography.

The seamounts and knolls identified herein are significantly geographically biased towards areas surveyed with ship-based soundings. As only 6.5% of the ocean floor has been surveyed with soundings it is likely that new seamounts will be uncovered as surveying improves.

Data are not being updated.

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None.

Institute of Zoology, Zoological Society of London

Tabular (.xls, .csv, or .tab), Vector (point; .shp), Vector (polygon; .shp)

84.5 Mb

http://data.unep-wcmc.org/datasets/41

http://doi.pangaea.de/10.1594/PANGAEA.757564

https://gis.unep-wcmc.org/arcgis/rest/services/marine/ZSL_002_ModelledSeamounts2011/MapServer

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Large Seamount Areas (2004)

Description: This dataset shows over 14,000 large seamounts identified from a mid-resolution bathymetric map, using methods outlined in Kitchingman and Lai (2004).

Citation(s): Kitchingman A, Lai S (2004). Inferences on potential seamount locations from mid-resolution bathymetric data. In T. Morato and D. Pauly, FCRR Seamounts: Biodiversity and Fisheries, Fisheries Centre Research Reports. University of British Columbia. 12: 7-12

Other cited references:

Temporal range: Unknown
Geographical range: Global
Supplementary information: This dataset was developed to provide a conservative estimate of the number of seamounts globally, which are important habitats for aquatic predators, demersal deep-sea fish, and benthic invertebrates.
Purpose of creation: The locations of a subset of the seamounts of the world were identified using two algorithms relying on the depth differences between adjacent cells of a digital global elevation map distributed by the U.S. National Oceanographic and Atmospheric Agency (NOAA). The overlap of both algorithms resulted in a set of approximately 14,000 seamounts, but a different number would have been found had different thresholds been used. Known seamount locations supplied by NOAA and SeamountsOnline (http://seamounts.sdsc.edu) were compared against the corresponding seamounts located by the study, which led to some degree of ground-truthing.

Creation methodology: For detailed methodology, please refer to Kitchingman and Lai (2004). Additional information on seamounts can be found in Kitchingman et al. (2007).
Dataset ID: UBC-004
Version: 1.0

Data lineage:

Category: Biogeographic classification
Keywords: seamounts, habitat, offshore, ABNJ, biodiversity, bathymetry, fisheries

Similar datasets: UniHaw-003, UniCal-001, WCMC-024, ZSL-002

Limitations: Although this dataset is suitable for a generalized global analysis, finer-resolution seamount predictions should be possible with some refinements to the methods used. For a detailed discussion of data quality and limitations, please refer to Kitchingman and Lai (2004).

Maintenance frequency: Data are not being updated.

Main access/use constraint: See 'Other access/use constraint(s)'.

Other access/use constraints: This dataset is not to be further redistributed or used for commercial purposes.

Contact organisation: Sea Around Us, University of British Columbia

Organisation type: Custodian
Acronym: UBC

Name: Dr. Dirk Zeller
City: Vancouver
E-mail: d.zeller@fisheries.ubc.ca
Web site: www.seaaroundus.org

Data format(s): Vector (point; .shp)
Distribution format(s): Vector (point; .shp)
Dataset size (uncompressed): 6.56 Mb

Webpage and/or download: http://www.seaaroundus.org/large-seamount-areas/

Other webpage: http://www.seaaroundus.org/doc/PageContent/LargeSeamountAreas/Kitchingman_Lai-2004-Inferences-Seamounts-FCRR-12-5.pdf

Web map service: actsheet: http://wcmc.io/seamounts

Resolution, scale: Reference system: Unknown
West bounding: -180.0 East bounding: 180.0
South bounding: -90.0 North bounding: 90.0
Metadata standard: UNEP-WCMC Specific Date of metadata: 09/11/2016
Global Distribution of Hydrothermal Vents (2010)

Description: This dataset shows the global distribution of hydrothermal vents that were studied in terms of their biology, as part of the Chemosynthetic Ecosystem Science (ChEss) project. The ChEss project, which was a field project of the Census of Marine Life (CoML) programme, lead to the creation of ChEssBase, an online information system on species distribution from deep-sea chemosynthetic ecosystems. ChEss addressed the main questions of CoML on diversity, abundance and distribution of marine species, focusing on deep-water reducing environments, such as hydrothermal vents, cold seeps, whale falls, sunken wood and areas of low oxygen that intersect with continental margins and seamounts.

Citation(s): Baker MC, Ramirez-Llodra E, Perry D (2010). ChEssBase: an online information system on species distribution from deep-sea chemosynthetic ecosystems. Version 3. Chemosynthetic Ecosystem Science (ChEss) project. Southampton (UK): National Oceanography Centre. URL: www.noc.soton.ac.uk/chess

Temporal range: Unknown
Geographical range: Global
Supplementary information: Attribute table: location (Name); latitude (lat); longitude (lon)

ChEssBase can be searched (taxonomy, site/location, habitat type, references, specimen) at www.noc.soton.ac.uk/chess/database/db_search.php. ChEssBase has been integrated with the Ocean Biogeographic Information System (OBIS; http://www.iobis.org).

Purpose of creation: Only a small fraction of the global ridge system (approx. 65,000 km) and of the vast continental margin regions have been explored and their communities described. The ChEss project aimed to improve knowledge on the diversity, abundance and distribution of species from vents, seeps and other reducing habitats at a global scale, to understand the abiotic and biotic processes that shape and maintain these ecosystems and their biogeography. The field programme aimed to explain the main gaps in our knowledge of the diversity, abundance and distribution of chemosynthetic species globally.

Creation methodology: A centralised geo- and bio-referenced database (ChEssBase) of vent and seep species was created, to incorporate archived and newly-collected biological
material. Additional data were obtained from the literature, and the related references are available in the database.

The ChEss project also developed a long-term field programme to locate potential vent and seep sites. For this, the project used deep-towed, Remotely Operated (ROV) and Autonomous Underwater (AUV) Vehicle technologies to locate, map and sample new chemosynthetic systems. Using optical, chemical and acoustic techniques, ChEss researchers were hence able to gain a better understanding of, not only biogeographical patterns, but also the processes driving these ecosystems.

Version: 3.0
Data lineage:
Category: Biogeographic classification
Keywords: deep sea, high seas, benthic, marine
Similar datasets: IntRid-001
Limitations: ChEssBase has not been updated since mid-2010.
Maintenance frequency: Data are not being updated.
Main access/use constraint: See 'Other access/use constraint(s)'.

Other access/use constraints: The ChEssBase Agreement can be found at: www.noc.soton.ac.uk/chess/database/db_agree.php. ChEssBase data cannot be used for any commercial purposes, and the original data source must be acknowledged in any publications or presentations based on the data held within ChEssBase. ChEssBase should also be acknowledged whenever it is used for analytical purposes within presentations and publications, in which case the citation should be sent to Dr. Maria Baker (mb11@noc.soton.ac.uk).

Contact organisation: University of Southampton, National Oceanography Centre

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<tr>
<td>Custodian</td>
<td>NOC</td>
<td>Dr. Maria Baker</td>
<td>Research Scientist</td>
<td>Southampton</td>
<td>United Kingdom</td>
<td><a href="mailto:mb11@noc.soton.ac.uk">mb11@noc.soton.ac.uk</a></td>
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Webpage and/or download: http://www.noc.soton.ac.uk/chess/science/sci_project.php

Other webpage: http://www.coml.org
Dataset ID: ChEssBase-002

Web map service: [http://arcgis.protectedplanet.net/ags2/rest/services/SeaSketchData/MapServer/7](http://arcgis.protectedplanet.net/ags2/rest/services/SeaSketchData/MapServer/7)

Factsheet: [http://wcmc.io/hydrothermal-vents](http://wcmc.io/hydrothermal-vents)

Resolution, scale: Not applicable  
Reference system: WGS 1984

West bounding: -177.6  
East bounding: 179.0

South bounding: -62.2  
North bounding: 87.0

Metadata standard: UNEP-WCMC Specific  
Date of metadata: 01/07/2015
Global Distribution of Hydrothermal Vent Fields

Description: The InterRidge Vents Database is a global database of submarine hydrothermal vent fields. The InterRidge Vents Database is supported by the InterRidge program for international cooperation in ridge-crest studies (www.interridge.org).

Citation(s): Beaulieu SE et al. (2015). InterRidge global database of active submarine hydrothermal vent fields ("InterRidge Vents Database"; version 3.4); prepared for InterRidge. Beijing (China): InterRidge, Peking University. URL: http://vents-data.interridge.org [YYYY-MM-DD].


Temporal range: 1800-2011

Geographical range: Global

Supplementary information: Main fields of information of the online database (at http://vents-data.interridge.org/ventfields_list_all): name of the vent field (Vent Field Name); activity status (confirmed active, inferred active, inactive); tectonic setting (e.g. Mid-ocean ridge, arc volcano); region of the globe; latitude; longitude; maximum or single reported depth; year and how discovered.

The tabular version of the database (http://vents-data.interridge.org/ventfields_list_all_CSV) contains additional fields of information, including discovery and other references. Details can be accessed at: http://vents-data.interridge.org/about_the_database#Contents.

The database can be viewed interactively at: http://vents-data.interridge.org/ventfields-geofield-map.

The InterRidge Office is based at Peking University (China).

Some attributes of all of the records in the database are also coded in RDF (Resource Description Framework) and available as Linked Open Data.

Purpose of creation: The database aims to provide a comprehensive list of active and inferred active (unconfirmed) submarine hydrothermal vent fields for use in academic research.
and education. It is anticipated that the database will become the international standard for all known sites of submarine hydrothermal activity, which can be updated simply by submitting an electronic message to the InterRidge Office.

**Creation methodology:**
The contents of the InterRidge Vents Database were derived principally from the open literature.

**Version:**
3.4 (October 2015)

**Data lineage:**
Detailed lineage information can be found at the following webpage: http://vents-data.interridge.org/about_the_database#Version3.

A subsequent version (3.3) was released in May 2015, and can be accessed from the InterRidge website.

**Category:**
Biogeographic classification

**Keywords:**
deep sea, high seas, benthic, marine, hydrothermal vent, habitat, ecosystem, InterRidge

**Similar datasets:**
ChEssBase-002

**Limitations:**
Every effort was made to check each entry for any errors that may have occurred during coding, transcription or reformatting, but InterRidge is not responsible for accuracy or completeness in the original data sources.

**Maintenance frequency:**
Data are updated in intervals that are uneven in duration.

**Main access/use constraint:**
Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported (CC BY-NC-SA 3.0). See http://creativecommons.org/licenses/by-nc-sa/3.0/ for details. Free to (1) copy/distribute the work, and (2) adapt the work. The material may not be used for commercial purposes.

**Other access/use constraints:**
User are asked to acknowledge InterRidge when using the database, and to send InterRidge the citations of any publications based on the information contained in the database.

**Contact organisation:**
Institut de Physique du Globe de Paris

**Organisation type:**
Custodian

**Acronym:**
IPGP

**Name:**
Kamil Szafranski

**Position:**
InterRidge Coordinator

**City:**
Paris

**Country:**
France

**E-mail:**
szafranski@ipgp.fr

**Web site:**
www.ipgp.fr/

**Data format(s):**
RDF, Tabular (.xls, .csv, or .tab)

**Distribution format(s):**
Tabular (.xls, .csv, or .tab)

**Dataset size (uncompressed):**
639 Kb
Dataset ID: IntRid-001

Webpage and/or download: [http://vents-data.interridge.org/ventfields_list_all](http://vents-data.interridge.org/ventfields_list_all)

Other webpage: [http://vents-data.interridge.org/about_the_database - Version3](http://vents-data.interridge.org/about_the_database - Version3)

Web map service:

Factsheet: [http://wcmc.io/hydrothermal-vents](http://wcmc.io/hydrothermal-vents)

Resolution, scale: Not applicable  
West bounding: -180.0  
South bounding: -64.5  
Metadata standard: UNEP-WCMC Specific

Reference system: WGS 1984  
East bounding: 179.8  
North bounding: 87.0  
Date of metadata: 01/07/2015
Global Distribution of Cold Seeps (2010)

Description: This dataset shows the global distribution of cold seeps that were studied in terms of their biology, as part of the Chemosynthetic Ecosystem Science (ChEss) project. The ChEss project, which was a field project of the Census of Marine Life (CoML) programme, lead to the creation of ChEssBase, an online information system on species distribution from deep-sea chemosynthetic ecosystems. ChEss addressed the main questions of CoML on diversity, abundance and distribution of marine species, focusing on deep-water reducing environments, such as hydrothermal vents, cold seeps, whale falls, sunken wood and areas of low oxygen that intersect with continental margins and seamounts.

Citation(s): Baker MC, Ramirez-Llodra E, Perry D (2010). ChEssBase: an online information system on species distribution from deep-sea chemosynthetic ecosystems. Version 3. Chemosynthetic Ecosystem Science (ChEss) project. Southampton (UK): National Oceanography Centre. URL: www.noc.soton.ac.uk/chess

Temporal range: Unknown
Geographical range: Global
Supplementary information: Attribute table: location (Name); latitude (lat); longitude (lon)

ChEssBase can be searched (taxonomy, site/location, habitat type, references, specimen) at http://archive.noc.ac.uk/chess/database/db_agree.php. ChEssBase has been integrated with the Ocean Biogeographic Information System (OBIS; http://www.iobis.org).

Purpose of creation: Only a small fraction of the global ridge system (approx. 65,000 km) and of the vast continental margin regions have been explored and their communities described. The ChEss project aimed to improve knowledge on the diversity, abundance and distribution of species from vents, seeps and other reducing habitats at a global scale, to understand the abiotic and biotic processes that shape and maintain these ecosystems and their biogeography. The field programme aimed to explain the main gaps in our knowledge of the diversity, abundance and distribution of chemosynthetic species globally.

Creation methodology: A centralised geo- and bio-referenced database (ChEssBase) of vent and seep species was created, to incorporate archived and newly-collected biological
material. Additional data were obtained from the literature, and the related references are available in the database.

The ChEss project also developed a long-term field programme to locate potential vent and seep sites. For this, the project used deep-towed, Remotely Operated (ROV) and Autonomous Underwater (AUV) Vehicle technologies to locate, map and sample new chemosynthetic systems. Using optical, chemical and acoustic techniques, ChEss researchers were hence able to gain a better understanding of, not only biogeographical patterns, but also the processes driving these ecosystems.

Version: 3.0
Data lineage: 
Category: Biogeographic classification
Keywords: deep sea, high seas, benthic, marine, seep, habitat, ChEssBase

Similar datasets: None
Limitations: ChEssBase has not been updated since mid-2010.
Maintenance frequency: Data are not being updated.
Main access/use constraint: See 'Other access/use constraint(s)'.

Other access/use constraints: The ChEssBase Agreement can be found at: www.noc.soton.ac.uk/chess/database/db_agree.php. ChEssBase data cannot be used for any commercial purposes, and the original data source must be acknowledged in any publications or presentations based on the data held within ChEssBase. ChEssBase should also be acknowledged whenever it is used for analytical purposes within presentations and publications, in which case the citation should be sent to Dr. Maria Baker (mb11@noc.soton.ac.uk).

Contact organisation: University of Southampton, National Oceanography Centre

Organisation type: Custodian
Acronym: NOC
Name: Dr. Maria Baker
Position: Research Scientist
City: Southampton
Country: United Kingdom
E-mail: mb11@noc.soton.ac.uk
Web site: www.noc.soton.ac.uk
Data format(s): Tabular (.xls, .csv, or .tab), Vector (point; .shp)
Distribution format(s): Tabular (.xls, .csv, or .tab)
Dataset size (uncompressed): 202 Kb

Webpage and/or download: http://www.noc.soton.ac.uk/chess/science/sci_project.php

Other webpage: http://www.coml.org

Dataset ID: ChEssBase-001

Web map service: http://arcgis.protectedplanet.net/ags2/rest/services/SeaSketchData/MapServer/0

Factsheet: http://wcmc.io/cold-seep

Resolution, scale: Not applicable
West bounding: -164.1
South bounding: -65.4
Metadata standard: UNEP-WCMC Specific

Reference system: WGS 1984
East bounding: 179.0
North bounding: 72.0
Date of metadata: 01/07/2015
ReefTEMPS: the observation network of the coastal sea waters of the South, West and South-West Pacific

Description: ReefTEMPS is a sensors network initiated in 1958 to monitor the coastal area of the South, West and South-West Pacific. This long-term observatory allows the acquisition of several parameters: Sea temperature, Electrical conductivity / practical salinity, Sea pressure / Waves height & period, Fluorescence, PH / acidity, Turbidity, with frequency running from 1 second to 30 minutes. ReefTEMPS is an observation network operated by the LEGOS since 2018 (and before by GOPS (South Pacific integrated observatory for the environment, terrestrial and marine biodiversity)). Five operators each manage a sub-region: WP1 New-Caledonia (IRD Nouméa), WP2 French Polynesia (SO CORAIL / CRIOBE), WP3 Pacific States (SPC), WP4 Fidji (USP, WPS Futuna (UNC). ReefTemps is part of the French national Research Infrastructure IR I-LICO.

Citation(s): Varillon David, Fiat Sylvie, Magron Franck, Allenbach Michel, Hoibian Thierry, Nyeurt Antoine, Ganachaud Alexandre, Aucan Jérôme, Pelletier Bernard, Hocdé Régis (2018). ReefTEMPS: the observation network of the coastal sea waters of the South, West and South-West Pacific. SEANOE. DOI: http://doi.org/10.17882/55128

Temporal range: 1958 - 2018
Geographical range: South, West and S-W Pacific
Supplementary information: See https://doi.org/10.17882/55128.
Purpose of creation: The main objective is to study the climatic parameters of the tropical ocean with a focus on the coastal sea waters to monitor the long-term effects of the global change and its impacts on the coral reefs and their resources.
Creation methodology: ReefTemps include a sensors-oriented environmental information system. It provides different types of interoperable services (including OGC standard SOS - Sensor Observation Service), each tailored to a specific scientific user community. The measurements provided by sensors, deployed for more than 40 years for some, are stored in a dedicated database designed by US IMAGO in the late 2000s.
Version: 1.0 (2018)
Data lineage: The creation of the ReefTEMPS sensors network was carried out in the framework of the South Pacific integrated observatory for the environment, terrestrial and marine biodiversity (GOPS). The sensors network was also funded by a grant from
the French Ministry for Overseas Territories (“Le Fonds Pacifique”) and by the French Ministry of Higher Education, Research and Innovation (MESRI), the alliance AllEnvi, the French research infrastructure ILICO and the French National Research Institute for Sustainable Development (IRD).

Category: Environment descriptor

Keywords: Coral reefs, temperature

Similar datasets:

Limitations: ReefTEMPS data are published without any warranty, express or implied. The user assumes all risk arising from his/her use of ReefTEMPS data. Data are intended to be research-quality and include estimates of data quality and accuracy, but it is possible that these estimates or the data themselves contain errors. The ReefTEMPS team welcome users to ask questions and report problems.

Maintenance frequency: Data are not being updated.

Main access/use constraint: Creative Commons Attribution 4.0 Unported (CC BY 4.0). See https://creativecommons.org/licenses/by/4.0/ for details. Free to (1) copy and redistribute the material in any medium or format, (2) remix, transform, and build upon the material for any purpose, even commercially. You must give appropriate credit, provide a link to the license, and indicate if changes were made. You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use. You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits.

Other access/use constraints: All data acquired are publicly accessible without any restriction (under CC-BY licence). The extracted data are accessible from this ReefTEMPS landing page with a downloadable ZIP file. All the data acquired, including the most recent data, are accessible from the ReefTemps data portal and through the different ReefTEMPS web services.

Contact organisation: Institut de recherche pour le développement

Organisation type: Creator

Acronym: IRD

Name: David Varillon

Position: City: Nouméa

Country: New Caledonia

E-mail: David.Varillon@ird.fr

Web site: https://nouvelle-caledonie.ird.fr/

Data format(s): NetCDF3 or 4

Distribution format(s): NetCDF3 or 4

Dataset size (uncompressed): 167 MB, 118 MB

Webpage and/or download: https://www.seanoe.org/data/00440/55128/

Other webpage: http://reeftemps.observatoire-gops.org/
Dataset ID: ReefTEMPS-001

Web map service: 

Factsheet:

Resolution, scale: Not reported

West bounding: 

South bounding: 

Metadata standard: UNEP-WCMC Specific

Reference system: Unknown

East bounding: 

North bounding: 

Date of metadata: 04/03/2019
Global Seafloor Sediment Map

Description: Knowing the patterns of distribution of sediments in the global ocean is critical for understanding biogeochemical cycles and how deep-sea deposits respond to environmental change at the sea surface. We present the first digital map of seafloor lithologies based on descriptions of nearly 14,500 samples from original cruise reports, interpolated using a support vector machine algorithm.


Temporal range: Not reported
Geographical range: Global
Supplementary information: None.

We show that sediment distribution is more complex, with significant deviations from earlier hand-drawn maps, and that major lithologies occur in drastically different proportions globally. By coupling our digital map to oceanographic data sets, we find that the global occurrence of biogenic oozes is strongly linked to specific ranges in sea-surface parameters. In particular, by using recent computations of diatom distributions from pigment-calibrated chlorophyll-a satellite data, we show that, contrary to a widely held view, diatom oozes are not a reliable proxy for surface productivity. Their global accumulation is instead strongly dependent on low surface temperature (0.9–5.7 °C) and salinity (33.8–34.0 PSS, Practical Salinity Scale 1978) and high concentrations of nutrients. Under these conditions, diatom oozes will accumulate on the seafloor regardless of surface productivity as long as there is limited competition from biogenous and detrital components, and diatom frustules are not significantly dissolved prior to preservation.

Quantifying the link between the seafloor and the sea surface through the use of large digital data sets will ultimately lead to more robust reconstructions and predictions of climate change and its impact on the ocean environment.

Creation methodology: Our map was created mostly using surface sample locations and descriptions obtained through the Index to Marine and Lacustrine Geological Samples (IMLGS) (Curators of Marine and Lacustrine Geological Samples Consortium, 2014). The
IMLGS contains data on more than 200,000 marine sediment samples, the vast bulk of which postdates creation of the commonly used Deck41 data set (Bershad and Weiss, 1976) and the year (1983) of the last incarnation of the global map of oceanic sediments (Trujillo and Thurman, 2014). We selected 14,399 data points using strict quality control criteria.

There are many marine sediment classification schemes (Kennett, 1982) resulting in at least 80 different sediment types. The classification scheme that we use here is deliberately generalized in order to successfully depict the main types of sediments found in global oceans and to overcome the shortcomings of inconsistent, poorly defined, and obsolete classification schemes and terminologies that are detailed in the majority of cruise reports. Our goal is to adhere to the classification scheme currently used by the International Ocean Discovery Program (Mazzullo et al., 1990), focusing on the descriptive aspect of the sediment rather than its genetic implications. As a result, we identify the following major classes of marine sediment: gravel, sand, silt, clay, calcareous ooze, radiolarian ooze, diatom ooze, sponge spicules, mixed calcareous-siliceous ooze, shells and coral fragments, fine-grained calcareous sediment (not ooze), siliceous mud, and volcaniclastics.

The map is created using a support vector machine (SVM) (Cortes and Vapnik, 1995) classifier to predict the lithology in unobserved regions (see the Data Repository). The SVM is a nonparametric model that adapts in complexity as new data are added. To reduce the risk of overfitting to the measurements at the expense of the model’s ability to generalize into areas outside of the sampled regions, a cross-validation approach was employed to train the classifier. This approach maximizes the model’s accuracy on observations that are withheld from the training set. For prediction, a one-against-one method (Bishop, 2006) was used to address the problem of modeling multiple classes with a bilinear classifier. Classes were weighted inversely proportional to their number of recorded instances to account for the unbalanced nature of the data. Deep-sea lithologies that collectively compose >70% of seafloor sediment have been predicted with very high accuracy (to 80%).

Version:

Data lineage: Not reported.
Category: Environment descriptor
Keywords: Seafloor sediment, geology, marine

Similar datasets: GridA-001
Limitations: See Dutkiewicz et al. (2015) for more details.
Maintenance frequency: Data are not being updated.
Main access/use constraint: See 'Other access/use constraint(s)'.
Other access/use constraints: See Dutkiewicz et al. (2015) for more details.
Dataset ID: UniSyd-001

Contact organisation: Service Hydrographique et Océanographique de la Marine

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**Data format(s):** Online maps, PDF

**Distribution format(s):** KML

Dataset size (uncompressed): Not reported


Web map service: [http://portal.gplates.org/cesium/?view=seabed](http://portal.gplates.org/cesium/?view=seabed)

**Factsheet:**

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<td>UNEP-WCMC Specific</td>
<td>Date of metadata:</td>
<td>05/03/2019</td>
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Description: This dataset shows mean global sea surface Net Primary Productivity (NPP) values for the months of June and December, averaged for the period from 2003 to 2007. They were created using data from Oregon State University’s Ocean Productivity database (www.science.oregonstate.edu/ocean.productivity).


Temporal range: 2003-2007
Geographical range: Global

Supplementary information: Net primary production is given in mg Carbon per sq-m and per day.

URLs for accessing the dataset are given for its June subset. For the December subset, please use the following URLs:
- Webpage and/or download: data.unep-wcmc.org/datasets/19;
- Other webpage: http://www.arcgis.com/home/item.html?id=ae5c9b0a86b0412d9bed8b93ce414a70;
- Web map service: http://downloads.wdpa.org/ArcGIS/rest/services/ocean_data_viewer/ssp_dec/MapServer

Purpose of creation: This dataset was created as part of a MSc thesis by Kershaw et al. (2008).

Creation methodology: Net primary production was calculated based on the standard VGPM (Vertically Generalized Production Model) algorithm, and using remotely-sensed images (Modis, SeaWiFS). See www.science.oregonstate.edu/ocean.productivity for additional information on the models used, access to model code and ancillary datasets, as well as comparisons of productivity estimates for alternative datasets. A five year average was then calculated, for the period from 2003 to 2007; see
Kershaw et al. (2008) for full details.

Version:

Data lineage:

Category: Environment descriptor

Keywords: marine, coastal, blue carbon, high seas, NPP, productivity, SeaWiFS, VGPM, model, environment descriptor

Similar datasets: WCMC-034

Limitations: This dataset is subject to algorithm uncertainties and assumptions. It is only representative of the period 2003 to 2007, and not of current net primary production estimates.

Maintenance frequency: Data are not being updated.


Other access/use constraints: None

Contact organisation: UN Environment World Conservation Monitoring Centre

Organisation type: Custodian

Acronym: UNEP-WCMC

Name: Lauren Weatherdon

Position: Senior Programme Officer

City: Cambridge

Country: United Kingdom

E-mail: lauren.weatherdon@unep-wcmc.org

Web site: www.unep-wcmc.org

Data format(s): Raster (.tif, geotiff), Raster (ESRI Grid)

Distribution format(s): Raster (.tif, geotiff)

Dataset size (uncompressed): 3.9 Mb

Webpage and/or download: http://data.unep-wcmc.org/datasets/18
Dataset ID: WCMC-020-021
Other webpage: http://www.arcgis.com/home/item.html?id=75069b411ede4a339d4abb43114bf39c
Web map service: http://downloads.wdpa.org/ArcGIS/rest/services/ocean_data_viewer/ssp_jun/Map Server
Factsheet: http://wcmc.io/environment-descriptors
Resolution, scale: 0.18 dd  Reference system: WGS 1984
West bounding: -180.0  East bounding: 180.0
South bounding: -90.0  North bounding: 90.0
Metadata standard: UNEP-WCMC Specific  Date of metadata: 29/05/2015

Description: This dataset shows the global distribution of mean annual sea surface chlorophyll-a concentration, averaged for the period from 2009 to 2013. It was created using remotely-sensed images from NASA's (National Aeronautics and Space Administration) Ocean Color database (http://oceancolor.gsfc.nasa.gov).


Temporal range: 2009-2013

Geographical range: Global

Supplementary information: Chlorophyll-a concentration is given in milligrams per cubic metre (mgChl-a/m3).

The 2009-2013 composite dataset illustrates spatial variations in chlorophyll-a concentration, such as that existing between highly productive upwelling regions and nutrient poor tropical waters. Data for individual years (2009 to 2013) are also provided in the data pack.

Purpose of creation: The concentration of chlorophyll pigments (i.e. the photosynthetic pigments of phytoplankton) is often considered as an proxy for biological productivity as productive surface waters attract marine organisms that benefit from phytoplankton blooms and, in turn, attracts larger marine predators. Any changes in the location, duration and extent of highly productive surface waters is therefore expected to cause matching changes in the distribution, abundance and migration patterns of marine mammals and large fish.
Information on the origins and calculations of the data can be accessed at Ocean Color Web (http://oceancolor.gsfc.nasa.gov). UNEP-WCMC obtained Aqua MODIS mean sea surface chlorophyll-a data (annual composite at 9 km resolution) in HDF format from the Ocean Color website (http://oceancolor.gsfc.nasa.gov/cgi/l3). The HDF data were converted to ArcGIS rasters using Marine Geospatial Ecology Tools (MGET), and units of chlorophyll-a concentration were converted into milligrams per cubic metre (mg/m³). The composite layer for years 2009 through 2013 was then created using the mosaic function in ArcGIS, to calculate mean chlorophyll-a concentration across all layers.

**Version:** 1.0 (April 2015)

**Data lineage:**

**Category:** Environment descriptor

**Keywords:** marine, coastal, high seas, sea surface productivity, primary productivity, chlorophyll, phytoplankton, NASA, Ocean Color, Aqua MODIS

**Similar datasets:** WCMC-020-021

**Limitations:** This dataset is subject to algorithm uncertainties and assumptions. It is only representative of the period 2009 to 2013, and not of current sea surface chlorophyll-a concentrations.

**Maintenance frequency:** Data are not being updated.

**Main access/use constraint:** Creative Commons Attribution 3.0 Unported (CC BY 3.0). See http://creativecommons.org/licenses/by/3.0/ for details. Free to (1) copy/distribute/transmit the work, (2) adapt the work, and (3) make commercial use of the work.

**Other access/use constraints:** None

**Contact organisation:** UN Environment World Conservation Monitoring Centre

**Organisation type:** Custodian

**Name:** Lauren Weatherdon

**City:** Cambridge

**E-mail:** lauren.weatherdon@unep-wcmc.org

**Web site:** www.unep-wcmc.org

**Data format(s):** Raster (ESRI Grid)

**Distribution format(s):** Raster (ESRI Grid)

**Dataset size (uncompressed):** 472 Mb

**Webpage and/or download:** http://data.unep-wcmc.org/datasets/37

**Other webpage:** http://oceancolor.gsfc.nasa.gov/cgi/l3
Dataset ID: WCMC-034

Web map service: https://gis.unep-wcmc.org/arcgis/rest/services/marine/WCMC_034_MeanSeaSurfaceChlorophyllA2015/MapServer

Factsheet: http://wcmc.io/environment-descriptors

Resolution, scale: 0.041667 dd  Reference system: WGS 1984
West bounding: -180.0  East bounding: 180.0
South bounding: -90.0  North bounding: 90.0
Metadata standard: UNEP-WCMC Specific  Date of metadata: 15/07/2015

Description: This dataset shows the mean annual global sea surface temperature, averaged for the period from 2003 to 2007. It was created using remotely-sensed images from NASA's (National Aeronautics and Space Administration) Ocean Color database (http://oceancolor.gsfc.nasa.gov).


Temporal range: 2003-2007
Geographical range: Global

Supplementary information: Sea surface temperature is given in degrees (Celsius).

Additional information on the origins and calculations of the data, including monthly sea surface temperature data, can be accessed at Ocean Color Web (http://oceancolor.gsfc.nasa.gov).

Purpose of creation: This dataset was created as part of a MSc thesis by Kershaw et al. (2008).
Creation methodology: Annual sea surface temperature was calculated from remotely-sensed images (MODIS sensor). See Kershaw et al. (2008) for full details.

Version: 
Data lineage: 
Category: Environment descriptor
Keywords: marine, coastal, high seas, SST, remote sensing, environment descriptor

Similar datasets: WCMC-035

Limitations: This dataset is subject to algorithm uncertainties and assumptions. It is only representative of the period 2003 to 2007, and not of current sea surface
Temperature estimates.

**Maintenance frequency:** Data are not being updated.

**Main access/use constraint:** UNEP-WCMC General Data Licence (excluding WDPA). See www.unep-wcmc.org/policies/general-data-license-excluding-wdpa#data_policy and www.unep-wcmc.org/policies. For commercial use, please contact business-support@unep-wcmc.org.

**Other access/use constraints:** None

**Contact organisation:** UN Environment World Conservation Monitoring Centre

**Organisation type:** Custodian

**Acronym:** UNEP-WCMC

**Name:** Lauren Weatherdon

**Position:** Senior Programme Officer

**City:** Cambridge

**Country:** United Kingdom

**E-mail:** lauren.weatherdon@unep-wcmc.org

**Web site:** www.unep-wcmc.org

**Data format(s):** Raster (.tif, geotiff), Raster (ESRI Grid)

**Distribution format(s):** Raster (.tif, geotiff)

**Dataset size (uncompressed):** 59.2 Mb

**Webpage and/or download:** http://data.unep-wcmc.org/datasets/20

**Other webpage:** http://www.arcgis.com/home/item.html?id=116f0d036f904c0281bce4b97c726362

**Web map service:** https://gis.unep-wcmc.org/arcgis/rest/services/marine/WCMC_022_MeanSST2008/MapServer

**Factsheet:** http://wcmc.io/environment-descriptors

**Resolution, scale:** 0.05 dd

**Reference system:** WGS 1984

**West bounding:** -180.0

**East bounding:** 180.0

**South bounding:** -78.6

**North bounding:** 89.8

**Metadata standard:** UNEP-WCMC Specific

**Date of metadata:** 29/05/2015
Mean Annual Sea Surface Temperature 2009-2013 (2015)

Description: This dataset shows the global distribution of mean annual sea surface temperature, averaged for the period from 2009 to 2013. It was created using remotely-sensed images from NASA’s (National Aeronautics and Space Administration) Ocean Color database (http://oceancolor.gsfc.nasa.gov).


Temporal range: 2009-2013
Geographical range: Global
Supplementary information: Sea surface temperature is given in degrees Celsius.
Purpose of creation: Sea surface temperature is a climatic descriptor and it is controlled by other climatic variables such as air temperature, and ocean and wind currents. Sea surface temperature is a key factor affecting biodiversity patterns as the majority of organisms respond to the temperature of their immediate environment.

Creation methodology: Information on the origins and calculations of the MODIS Aqua data can be accessed at Ocean Color Web (http://oceancolor.gsfc.nasa.gov/cms/data/aqua). UNEP-WCMC obtained Aqua MODIS daily sea surface temperature data in HDF format from the Ocean Color website (http://oceancolor.gsfc.nasa.gov/cgi/l3). The HDF data were converted to ArcGIS rasters using Marine Geospatial Ecology Tools (MGET), and units were converted into degrees Celsius using the raster calculator tool (ESRI ArcMap). The composite layer for years 2009 through 2013 was then created using the mosaic function in ArcMap, to calculate mean sea surface temperature across all layers.

Version: 1.0 (May 2015)
Data lineage: 
Category: Environment descriptor

Keywords: marine, coastal, high seas, sea surface temperature, SST

Similar datasets: WCMC-022

Limitations: This dataset is subject to algorithm uncertainties and assumptions. It is only representative of the period 2009 to 2013, and not of current sea surface temperature estimates or seasonal variations.

Maintenance frequency: Data are not being updated.

Main access/use constraint: Creative Commons Attribution 3.0 Unported (CC BY 3.0). See http://creativecommons.org/licenses/by/3.0/ for details. Free to (1) copy/distribute/transmit the work, (2) adapt the work, and (3) make commercial use of the work.

Other access/use constraints: None

Contact organisation: UN Environment World Conservation Monitoring Centre

Organisation type: Custodian

Name: Lauren Weatherdon
City: Cambridge
E-mail: lauren.weatherdon@unep-wcmc.org
Web site: www.unep-wcmc.org

Data format(s): Layer package (ESRI, .lpk), Raster (ESRI Grid)
Distribution format(s): Layer package (ESRI, .lpk), Raster (ESRI Grid)

Dataset size (uncompressed): 107 Mb

Webpage and/or download: http://data.unep-wcmc.org/datasets/36

Other webpage: http://oceancolor.gsfc.nasa.gov/cgi/l3

Web map service: https://gis.unep-wcmc.org/arcgis/rest/services/marine/WCMC_035_MeanSeaSurfaceTemperature2015/MapServer

Factsheet: http://wcmc.io/environment-descriptors

Resolution, scale: 0.08333 dd
West bounding: -180.0
South bounding: -90.0
Metadata standard: UNEP-WCMC Specific

Reference system: WGS 1984
East bounding: 180.0
North bounding: 90.0
Date of metadata: 22/06/2015
Mapping Ocean Wealth

Description: Informed by science, communications and policy work, Mapping Ocean Wealth visualizes in quantitative terms all that the ocean does for us today, so that we make smarter investments and decisions for the ocean of tomorrow.

Citation(s): The Nature Conservancy (2016) Mapping Ocean Wealth. URL: http://oceanwealth.org/

Temporal range: Variable
Geographical range: Global
Supplementary information:

Purpose of creation: Mapping Ocean Wealth maps social, economic, and ecological features allowing policy analysts and decision makers, conservation practitioners and scientists, business managers, coastal planners, and investors to connect these values with specific places and make more informed decisions. It also allows for rapid comparisons across possible scenarios, projecting the impact of specific decisions over time in terms of ecosystem productivity, jobs gained or lost, and potential return on investment.

Creation methodology: The project incorporates data from the Natural Capital Project’s Marine Integrated Valuation of Environmental Services and Tradeoffs program. The Ocean Wealth platform (and the Coastal Defense Application) incorporates their model, which calculates the potential of natural coastal habitats to reduce wave height and wave energy thereby lowering the risk of inundation and erosion in coastal areas. Both the model and the application use standard engineering techniques to help users estimate how and where to restore or conserve critical habitat, reducing wave impacts and increasing the resilience of the local community and infrastructure.

At the global level, world atlases on coastal ecosystems provide a baseline for ecosystem service valuation. For example, mangrove forests are widely cited for their tremendous contribution to human well-being through a host of ecosystem services, such as providing timber and wood for fuel, enhancing fisheries, filtering water, protecting coasts, and sequestering carbon. Mapping Ocean Wealth not only maps mangroves, broadly highlighting their service attributes around the world, but also shows how service values vary from place to place.
Regionally, the project focuses on more detailed data in five specific areas — Indonesia, Micronesia, the Gulf of California, the Caribbean, and the U.S. Atlantic Coast — summarizing information across and within regions as well as providing the ability to bundle ecosystem services. For example, oyster reefs were once a major physical feature of every estuary and embayment in the United States, yet most have been lost due to over-harvesting exacerbated by disease and pollution. These reefs play an important role especially in terms of water filtration. New models enable the project to estimate the filtration capacity of oysters by estuary, influenced by the extent and biomass of oyster habitat but also by water temperature and the size of individual oysters. The estuary-specific data is made easily accessible through the Mapping Ocean Wealth platform, which illustrates regional services as well as the way services bundle together — in this case, showing the role shellfish reefs also play in reducing erosion, removing pollutants, and enhancing fish stocks.

And at the local scale, Mapping Ocean Wealth provides detailed models and maps of ecological and economic services.

Version:

Data lineage:

Category: Ecosystem services and natural capital

Keywords: Ecosystem services, natural capital, TNC, fisheries, recreation, tourism, carbon, coastal protection, corals, mangrove, saltmarsh, shellfish reefs, seagrasses, pelagic

Similar datasets:

Limitations: The accuracy of the maps vary by region, methodology, and scale.

Maintenance frequency: Data are updated in intervals that are uneven in duration.

Main access/use constraint: Mapping Ocean Wealth’s Terms of Use (http://oceanwealth.org/legal-disclosure/).

Other access/use constraints: Content owned by The Nature Conservancy: Use of Content on Mapping Ocean Wealth is permitted by Users under the terms of the Creative Commons license for non-commercial purposes (CC BY-NC-SA; http://creativecommons.org/licenses/by-nc-sa/3.0/legalcode) on the condition it is attributed to the Content owner, specifically The Nature Conservancy. The full terms of the License can be found on Creative Commons.

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Creative Commons.

Contact organisation: Mapping Ocean Wealth, The Nature Conservancy

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Data format(s): Online maps

Distribution format(s): Online maps

Dataset size (uncompressed):

Webpage and/or download: http://maps.oceanwealth.org/

Other webpage:

Web map service:

Factsheet:

Resolution, scale: --

West bounding: -180.0

South bounding: -90.0

Metadata standard: UNEP-WCMC Specific

Reference system: WGS 1984

East bounding: 180.0

North bounding: 90.0

Date of metadata: 09/11/2016
A Global Map of Natural Capital (2014)

Description: Natural capital comprises both ecosystem assets (such as freshwater) and natural resources (such as fossil fuel deposits). This dataset shows the global patterns of ecosystem assets, in the marine, terrestrial and freshwater realms.


Temporal range: 2014
Geographical range: Global
Supplementary information: The composite map of ecosystem assets is produced by combining a number of existing global spatial datasets to produce a map for both terrestrial and marine realms. The individual datasets represent fresh water resources, soil quality for plant growth, terrestrial carbon, terrestrial and marine biodiversity, and marine fish stocks.

Purpose of creation: This layer presents the first attempt to give an overview of the global distribution of ecosystem assets.

Creation methodology: The System of Environmental-Economic Accounting’s Experimental Ecosystem Accounting approach provided a conceptual starting point for this global map of key ecosystem assets. A disaggregated approach was adopted to the mapping of ecosystem assets, in which key assets were selected and individually mapped. Values in each individual ecosystem asset map were normalised (rescaled linearly to values between 0 and 1). The layers were then combined into a composite global map, giving equal weight to each underlying layer.

See Dickson et al. (2014) for further details about the methodology.

Version: 1.0 (2014)
Data lineage: Ecosystem services and natural capital
Limitations: Identification of assets and the equivalence between them were constrained by data availability. Due to time and data limitations, the study scope did not include examination of changes over time in the assets chosen. Moreover, many of the datasets used are based on long-term means that do not allow the maps to be dated to a precise point in time.

Main access/use constraint: See 'Other access/use constraint(s)'.

Other access/use constraints: Interested users should contact marine@unep-wcmc.org.

Contact organisation: UN Environment World Conservation Monitoring Centre

Organisation type: Owner

Name: Prof Jon Hutton
City: Cambridge
E-mail: jon.hutton@unep-wcmc.org
Web site: www.unep-wcmc.org

Data format(s): Raster (.tif, geotiff)
Distribution format(s): Raster (.tif, geotiff)

Dataset size (uncompressed): 167 Mb

Webpage and/or download: http://www.unep-wcmc.org/resources-and-data/towards-a-global-map-of-natural-capital

Other webpage: Web map service:

Factsheet: http://www.biodiversity-a-z.org/content/natural-capital

Resolution, scale: 0.017 dd (10x10 arc-min) Reference system: World Robinson
West bounding: -180.0 East bounding: 180.0
South bounding: -90.0 North bounding: 90.0

Metadata standard: UNEP-WCMC Specific Date of metadata: 23/06/2015
**Marine Ecosystem Services Partnership (MESP)**

The Marine Ecosystem Services Partnership (MESP) is a community of practice for marine ecosystem stakeholders, policy makers, researchers, economists and environmental managers. Please use this portal to share ideas, discuss pressing issues, post the latest news and explore our extensive database of valuation studies.

The MESP hosts a library of ecosystem service mapping and valuation examples globally, and an ecosystem services assessment toolkit.

**Citation(s):**

To give due credit to the original authors, please cite the original publication found within the Marine Ecosystem Services Partnership’s Valuation Library.

Cite the Marine Ecosystem Services Partnership as:


**Geographical range:** Global

**Creation methodology:**

The database is organized by values - so one study may show multiple times for
values falling under different ecosystems or in different countries. The database can be searched by EEZ or by ecosystem. The search box at the top of the screen can also be used to search the database – this is especially useful for looking up authors or particular keywords.

For more help on using the database, please read the Help page (http://mesp2.env.duke.edu/help) or contact MESP directly (info@marineecosystemservices.org).

Version:

Data lineage: In its first iteration, the MESP database held over 900 entries of economic valuation data representing over 2000 values.

Category: Ecosystem services and natural capital

Keywords: ecosystem services, repository, economic valuation, MESP, ecology, habitats, coastal, benefit transfer, tourism

Similar datasets:

Limitations: Please refer to the methodology for each publication documented in the repository.

Maintenance frequency: Data are updated in intervals that are uneven in duration. See 'Other access/use constraint(s)'.

Main access/use constraint: Please refer to 'Citation' for guidance.

Other access/use constraints:

Contact organisation: Nicholas Institute for Environmental Policy Solutions, Duke University

Organisation type: Resource provider

Acronym: --

Position: Managing Partner, Marine Ec

Country: North Carolina (USA)

Name: --

City: Durham

E-mail: info@marineecosystemservices.org

Web site: https://nicholasinstitute.duke.edu/

Data format(s): Online database

Distribution format(s): Online database

Dataset size (uncompressed): Not reported

Webpage and/or download: http://mesp2.env.duke.edu/explore

Other webpage:

Web map service:

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Researchers with the University of British Columbia’s Sea Around Us (SAU) project have launched a new web platform (www.seaaroundus.org) that provides the first comprehensive coverage of both reported and unreported fish caught by every country in the world.

Citation(s):

The Sea Around Us website presents scientific data, and this has the implication — among others — that the use of this website’s contents are free as long as due credit is given. This may be done at different levels, for which we suggest different forms of citations:

- When referring to various datasets downloaded from the website, and/or its concept or design, or to several datasets extracted from its underlying databases, cite its architects, i.e., Pauly D and Zeller D (eds.) (2015) Sea Around Us Concepts, Design and Data (seaaroundus.org).

- When referring to a set of values extracted for a given country, EEZ or territory, cite the most recent catch reconstruction report or paper (available on the website) for that country, EEZ or territory. Thus, for examples, for the Mexican Pacific EEZ, the citation should be “Cisneros-Montemayor AM, Cisneros-Mata MA, Harper S and Pauly D (2015) Unreported marine fisheries catch in Mexico, 1950-2010. Fisheries Centre Working Paper #2015-22, University of British Columbia, Vancouver. 9 p.”, which is accessible on the EEZ page for Mexico (Pacific) on seaaroundus.org. To help us track the use of Sea Around Us data, we would appreciate you also citing Pauly and Zeller (2015) as the source of the information in an appropriate part of your text.

- When using data from our website that are not part of a typical catch reconstruction (e.g., catches by LME or other spatial entity, subsidies given to fisheries, the estuaries in a given country, or the surface area of a given EEZ), cite both the website and the study that generated the underlying database, i.e., Sumaila et al. (2010) for subsides, Alder (2003) for estuaries and Claus et al. (2014) for EEZ delineations, respectively. Many of these can be derived from the ‘methods’ texts associated with data pages on seaaroundus.org.

Temporal range: 1950 - 2010
Geographical range: Global
The Sea Around Us was initiated in 1999, and aims to provide integrated analyses of the impacts of fisheries on marine ecosystems, and to devise policies that can mitigate and reverse harmful trends while ensuring the social and economic benefits of sustainable fisheries. Sea Around Us has assembled global databases of catches, distributions of fished marine species, countries’ fishing access agreements, ex-vessel prices, marine protected areas and other data – all available online.

For detailed catch reconstruction and allocation methods, please visit: http://www.seaaroundus.org/catch-reconstruction-and-allocation-methods/. Other methodologies can also be found in the Sea Around Us Methods Index (http://www.seaaroundus.org/sea-around-us-methods-index/).

The catch data presented on the new Sea Around Us website supersede those on the previous site, which reported landings data from FAO member countries. The new site offers 'reconstructed' catch data by sector, catch type, and reporting status. 'Reconstructed' data combine officially reported data with best estimates of all unreported catches, both landed and discarded.

Ecosystem services and natural capital

fisheries, catch reconstruction, marine, ecosystems, global, IUU, unreported catch, landings, discards

FishBase-001, SLBase-001

For detailed catch reconstruction and allocation methods, please visit: http://www.seaaroundus.org/catch-reconstruction-and-allocation-methods/.

Data are updated in intervals that are uneven in duration.

Use of content on the Sea Around Us website is free as long as due credit is given. For detailed citation requirements, please visit http://www.seaaroundus.org/citation-policy/.

Sea Around Us, University of British Columbia

Custodian

Dr. Dirk Zeller

Vancouver

d.zeller@fisheries.ubc.ca

www.seaaroundus.org

Online database, PDF, Tabular (.xls, .csv, or .tab)

Data lineages:

Category:

Keywords:

Similar datasets:

Limitations:

Maintenance frequency:

Main access/use constraint:

Other access/use constraints:

Contact organisation:

Organisation type:

Acronym:

UBC

Name:

City:

E-mail:

Web site:

Data format(s):
Dataset ID: UBC-009

Distribution format(s): Online database, PDF, Tabular (.xls, .csv, or .tab)

Dataset size (uncompressed):

Webpage and/or download:
http://www.seaaroundus.org

Other webpage:

Web map service:

Factsheet:
Resolution, scale: Not applicable
West bounding: -180.0
South bounding: -90.0
Metadata standard: UNEP-WCMC Specific

Reference system: Not applicable
East bounding: 180.0
North bounding: 90.0
Date of metadata: 13/08/2015
ShipMap represents movements of the global merchant fleet over the course of 2012, overlaid on a bathymetric map. It also includes statistics such as a counter for emitted CO2 (in thousand tonnes) and maximum freight carried by represented vessels (varying units).

Citation(s):

Temporal range: 2012
Geographical range: Global
Supplementary information:
Purpose of creation:
You can pan and zoom in the usual ways, and skip back and forward in time using the timeline at the bottom of the screen. The controls at the top right let you show and hide different map layers: port names, the background map, routes (a plot of all recorded vessel positions), and the animated ships view. There are also controls for filtering and colouring by vessel type.

The merchant fleet is divided into five categories, each of which has a filter and a CO2 and freight counter for the hour shown on the clock. The ship types and units are as follows:

- Container (e.g. manufactured goods): number of container slots equivalent to 20 feet (i.e. a 40-foot container takes two slots)
- Dry bulk (e.g. coal, aggregates): combined weight of cargo, fuel, water, provisions, passengers and crew a vessel can carry, measured in thousand tonnes
- Tanker (e.g. oil, chemicals): same as dry bulk
- Gas bulk (e.g. liquified natural gas): capacity for gases, measured in cubic metres
- Vehicles (e.g. cars): same as dry bulk

Creation methodology:
UCL EL took data showing location and speed of ships and cross-checked it with another database to get the vessel characteristics, such as engine type and hull measurements. With this information they were able to compute the CO2 emissions for each observed hour, following the approach laid out in the Third IMO Greenhouse Gas Study 2014. Kiln took the resulting dataset and visualized it with
WebGL on top of a specially created base map, which shows bathymetry (ocean depth), based on the GEBCO_2014 Grid (version 20150318), as well as continents and major rivers from Natural Earth.

All data sources for shipping positions are exactEarth for AIS data (location/speed) and Clarksons Research UK World Fleet Register (static vessel information), with funds from the European Climate Foundation.

Version: 1.0 (2012)
Data lineage:
Category: Ecological status and impact
Keywords: Shipping routes, global, socio-economic activity

Similar datasets: GFW-001
Limitations: Not reported.
Maintenance frequency: Data are not being updated.
Main access/use constraint:
Other access/use constraints: Not reported.
Contact organisation: University College London Energy Institute

Organisation type: Creator  Acronym: UCL EI

Name:  
City: London  Position:  
E-mail: hello@kiln.it  Country: UK  
Web site: https://www.ucl.ac.uk/bartlett/energy/

Data format(s): Online maps
Distribution format(s): Online maps
Dataset size (uncompressed): Not reported

Webpage and/or download: https://www.shipmap.org/
Other webpage:
Web map service:

Factsheet:
Resolution, scale: Not reported  Reference system: WGS 1984
West bounding:  East bounding:
South bounding:  North bounding:
Metadata standard: UNEP-WCMC Specific  Date of metadata: 03/03/2019

Global distribution of deep-sea debris (2017)

Description: The Deep-sea Debris Database was developed by the Global Oceanographic Data Centre (GODAC) of the Japan Agency for Marine-Earth Science and Technology (JAMSTEC). JAMSTEC repurposed photos and videos of geographic features, biological and non-biological objects during deep-sea surveys carried out since the 1980s, identifying those that include debris.

Citation(s): JAMSTEC (2017) Deep-sea Debris Database. Developed by the Global Oceanographic Data Centre (GODAC) of the Japan Agency for Marine-Earth Science and Technology (JAMSTEC). URL: http://www.godac.jamstec.go.jp/dsdebris/e/

Other cited references:

Temporal range: 1982-2017
Geographical range: Global
Supplementary information: For each photo, the information available includes: date, location (longitude, latitude), depth, sediment type (sandy, muddy, rocky, etc.), types of debris (plastic, metal, wood, etc.), dive identification number relating to the submersible survey, taxonomic name of organisms found around the debris.

Purpose of creation: This database opportunistically utilised data from previous deep-sea surveys so as to share information with other scientists but also the public, on the geographic and temporal proliferation of deep-sea debris. The database intends to provide the global community with a useful knowledge base to understand the connection between human activities and marine ecosystems in the remote depths, and to address the need to tackle marine debris issues.

reation methodology: The database comprises of photos and videos of marine debris collected, amongst others, during deep-sea research missions, using e.g. manned submersible
“SHINKAI6500” and unmanned tethered vehicle “HYPER-DOLPHIN” plus other ROVs and submersibles, owned by JAMSTEC.

Version: On-going

Data lineage: JAMSTEC repurposed photos and videos of geographic features, biological and non-biological objects attained through deep-sea survey carried out since the 1980s; identifying those including debris. Data received as: Debris list, map (data points and polygon), photo: JPEG, video: H.264 and will be distributed in the form of vectors (point and polygon), supplementary PDF containing relevant information and photos, and videos.

Category: Ecological status and impact

Keywords: marine, deep sea, debris

Similar datasets: UniCadiz-001

Limitations: The debris data were collected as part of survey missions with various research foci, thus they are not appropriate to use for temporal variation analysis, e.g. trend of deep-sea debris in these decades. For instance, see Miyake et al. (2011).

Maintenance frequency: Data are updated in intervals that are uneven in duration.

Main access/use constraint: See 'Other access/use constraint(s)'.

Other access/use constraints: For purposes of academic research, and educational activities such as lessons at non-profit educational institutions or personal uses permitted by the copyright act, you can use videos and photos on the website without authorization of JAMSTEC for free. Please express clearly in your paper, document, video etc. that JAMSTEC data is used if you use videos and photos from the website. Terms and condition: http://www.godac.jamstec.go.jp/jedi/e/readme.html

Contact organisation: Global Oceanographic Data Centre of Japan Agency for Marine-Earth Science and Technology

Organisation type: Custodian

Acronym: GODAC JAMSTEC

Name: Hideaki Saito
City: Nago, Okinawa
Country: Japan
E-mail: saito@jamstec.go.jp

Data format(s): PDF, Vector (point; .shp), Vector (polygon; .shp)

Distribution format(s): PDF, Vector (point; .shp), Vector (polygon; .shp)

Dataset size (uncompressed): Depends on individual photo (c.a. 1MB) and video (768Kbps)

Webpage and/or download: http://www.godac.jamstec.go.jp/dsdebris/e/

Other webpage: http://www.godac.jamstec.go.jp/catalog/dsdebris/e/maps.html
 Dataset ID: JAMSTEC-001


### Factsheet

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Environmental Performance Index (EPI)

Description: Careful measurement of environmental trends and progress provides a foundation for effective policymaking. The 2018 Environmental Performance Index (EPI) ranks 180 countries on 24 performance indicators across ten issue categories covering environmental health and ecosystem vitality. These metrics provide a gauge at a national scale of how close countries are to established environmental policy goals. The EPI thus offers a scorecard that highlights leaders and laggards in environmental performance, gives insight on best practices, and provides guidance for countries that aspire to be leaders in sustainability.

Citation(s): When authors make use of data they should cite both the data set and the scientific publication, if available.


Previous version of the EPI, with a more detailed methodology, can be found here:


Geographical range: Global
With 20 years of experience, the EPI reveals a tension between two fundamental dimensions of sustainable development: (1) environmental health, which rises with economic growth and prosperity, and (2) ecosystem vitality, which comes under strain from industrialization and urbanization. Good governance emerges as the critical factor required to balance these distinct dimensions of sustainability.

The EPI is produced jointly by Yale University and Columbia University in collaboration with the World Economic Forum. The 2018 EPI was produced with generous support from the McCall MacBain Foundation and Mark T. DeAngelis.

For more information on the methodology behind the EPI, please visit: https://epi.envirocenter.yale.edu/2018-epi-report/methodology.

Additional information is outlined in the peer-reviewed article by Hsu et al. (2013).

Version: 2018

Data lineage:

Category: Ecological status and impact

Keywords:

Similar datasets:

Limitations: While the EPI provides a framework for greater analytic rigor in environmental policymaking, it also reveals a number of severe data gaps. As the EPI project has highlighted for two decades, better data collection, reporting, and verification across a range of environmental issues are urgently needed. The existing gaps are especially pronounced in the areas of sustainable agriculture, water resources, waste management, and threats to biodiversity. Supporting stronger global data systems thus emerges as essential to better management of sustainable development challenges.

Maintenance frequency: Data are updated every two years.

Main access/use constraint: Creative Commons Attribution 3.0 Unported (CC BY 3.0). See http://creativecommons.org/licenses/by/3.0/ for details. Free to (1) copy/distribute/transmit the work, (2) adapt the work, and (3) make commercial use of the work.

Other access/use constraints:

Contact organisation: Yale Centre for Environmental Law & Policy

Organisation type: Creator

Acronym:

Name: Position:

City: Country:
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| Webpage and/or download: | [http://epi.yale.edu/downloads](http://epi.yale.edu/downloads) |


| Web map service: |
| Factsheet: |
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| Reference system: | Not applicable |
| West bounding: |
| East bounding: |
| South bounding: |
| North bounding: |
| Metadata standard: | UNEP-WCMC Specific |
| Date of metadata: | 03/03/2019 |
Description: The Living Planet Index (LPI; http://www.livingplanetindex.org/) is a measure of the state of the world’s biological diversity based on population trends of vertebrate species from terrestrial, freshwater and marine habitats. The LPI has been adopted by the Convention of Biological Diversity (CBD) as an indicator of progress towards its 2011-2020 target to 'take effective and urgent action to halt the loss of biodiversity'.

The Living Planet Database (LPD) currently holds time-series data for over 17,600 populations of more than 3,500 mammal, bird, fish, reptile and amphibian species from around the world, which are gathered from a variety of sources such as journals, online databases and government reports.

Citation(s):
Cite the database:
LPI. (2018). Living Planet Index Database. URL: http://www.livingplanetindex.org/data_portal [date accessed].

Cite the 2018 report:

Other cited reference(s):


The population time-series data in the LPI are augmented with additional information relating to the population’s taxonomy, location and ecology, which allows for the analysis of trends at different scales and habitats. This is how the global trend shown above can be subdivided to show trends in temperate and tropical regions and different systems or biogeographic realms.

In addition, subsets of populations of the LPI can:
- provide a basis for tracking progress with respect to multi-lateral agreements such as the Convention for the Conservation of Migratory Species;
- be used to create an index of biodiversity trends in a particular country such as Canada;
- for exploring trends in selected groups of species such as utilised species or specific taxonomic groups; and
- for producing regional and global indices representing particular habitats or biomes.

For more examples of how the LPI can be applied, please visit: http://www.livingplanetindex.org/projects

The LPI played a pivotal role in measuring progress towards the 2010 target of the Convention on Biological Diversity (CBD) to reduce the rate of biodiversity loss which, according to the suite of 2010 biodiversity indicators, was not met.

In response, the 193 nations of the CBD committed themselves to a revised Strategic Plan for Biodiversity, including the Aichi Biodiversity Targets, for the 2011-2020 period including actions which will “…take effective and urgent action to halt the loss of biodiversity in order to ensure that by 2020 ecosystems are resilient and continue to provide essential services, thereby securing the planets variety of life, and contributing to human well-being, and poverty eradication.”

The 2020 targets focus on maintaining ecosystem services in which biodiversity plays an important role. The Living Planet Index is an applicable indicator for many of the Aichi Biodiversity targets under Strategic Goals A-D which address the causes, pressures, state and benefits of biodiversity.

For more resources, please see WWF (2014) and visit: http://www.livingplanetindex.org/publications.

Using a method developed by ZSL and WWF, these species population trends are aggregated to produce indices of the state of biodiversity. The rest of the work focusses on expanding the coverage of LPI data to more broadly represent vertebrate biodiversity from all around the globe and disaggregating the index to measure trends in different thematic areas. This includes assessing the changes in different taxonomic groups, looking at species trends at a national or regional level, identifying how different threats affect populations and providing an insight into how conservation intervention can promote species recoveries.
To calculate an LPI, a generalised additive modelling framework is used to determine the underlying trend in each population time-series (Collen et al. 2009; Loh et al. 2002). Average rates of change are then calculated and aggregated to the species level. For the global LPI, the method of aggregation has recently been revised to include a weighting system which gives trends from more species-rich systems, realms and groups more weight in the final index.

Version: 2014
Data lineage: The 2018 Living Planet Report is the twelfth edition of WWF’s flagship publication. The biennial report, produced in collaboration with the Zoological Society of London, uses the global LPI as a measure of the health of 16,704 populations of 4,005 species. Download the full report here and access the data behind the global LPI below.

Category: Ecological status and impact
Keywords: Living Planet Index, LPI, WWF, ZSL, indicators, biodiversity, population trends

Limitations: ZSL and WWF endeavour to maintain accurate and up-to-date data at all times. However, if errors or omissions are identified, the user should notify ZSL and WWF (admin@livingplanetindex.org) so that they can be corrected in future releases of the data.

Disclaimer: ZSL and WWF make no warranties or representations, express or implied, regarding the use of the material appearing in this database with regard to their correctness, reliability, accuracy, or otherwise. The material and geographic designations in this dataset do not imply the expressions of any opinion whatsoever on the part of ZSL or WWF concerning the legal status of any country, territory or area, nor concerning the delimitation of its frontiers or boundaries. Neither ZSL, WWF nor their affiliated or related entities or its content providers shall be responsible or liable to any person, firm or corporation for any loss, damage, injury, claim or liability of any kind or character based on or resulting from any information contained in this dataset. ZSL and WWF may update or make changes to the data provided at any time without notice; however, ZSL and WWF make no commitment to update the information contained therein.

Maintenance frequency: Data are updated every two years.

Main access/use

Other access/use constraints: The full disclaimer can be obtained from the Data Use Policy (http://www.livingplanetindex.org/documents/data_agreement.pdf), while documents outlining "Data Standards" and "LPI data requirements for public users" can be obtained from the data portal (http://www.livingplanetindex.org/supporting_documents).
Contact organisation:

Dataset ID: WWF-002

Indicators and Assessments Unit, Zoological Society of London

Organisation type: Custodian

Acronym: ZSL

Name: --

Position: --

City: London

Country: United Kingdom

E-mail: admin@livingplanetindex.org

Web site: www.livingplanetindex.org

Data format(s): Online database, Tabular (.xls, .csv, or .tab)

Distribution format(s): Online database, Tabular (.xls, .csv, or .tab)

Dataset size (uncompressed): Not reported

Webpage and/or download: http://www.livingplanetindex.org/data_portal

Other webpage:

Web map service:

Factsheet: http://wwf.panda.org/about_our_earth/all_publications/living_planet_report/

Resolution, scale: Not applicable

Reference system: WGS 1984

West bounding: -180.0

East bounding: 180.0

South bounding: -90.0

North bounding: 90.0

Metadata standard: UNEP-WCMC Specific

Date of metadata: 17/08/2015
Global Data for the Ocean Health Index (2012)

Description: The Ocean Health Index (OHI) is a tailorable marine assessment framework to comprehensively and quantitatively evaluate ocean health.

Determining how healthy oceans are and managing for the future requires an assessment approach that evaluates current conditions comprehensively from social, economic, and environmental perspectives. The OHI defines a healthy ocean as one that sustainably delivers a range of benefits to people now and in the future.

Citation(s): For general references to the Ocean Health Index (OHI) framework, please cite the original publication:


Other citations may also be relevant due to updates in global models and data sources since the original publication. See Publications for other references.

If you are conducting an OHI+ assessment, please cite:

Primary OHI publications (see above)

Github repository: ohicore The R package used to generate the scores:

Ocean Health Index. (Year.) ohicore version: core Ocean Health Index functions, [date downloaded]. National Center for Ecological Analysis and Synthesis, University of California, Santa Barbara. Available at: https://github.com/OHI-Science/ohicore/releases

OHI manual: This resource describes how to conduct an assessment:


If you are diving deeper and using the most recent global datasets or methods, please cite:

Github repository: ohi-global The results from the most recent global assessment, as well as the underlying data and models (i.e., code), are available from Github.

Dataset ID: NCEAS-002

these data are used, please cite: Ocean Health Index. Year. ohi-global version: Global scenarios data for Ocean Health Index, [date downloaded]. National Center for Ecological Analysis and Synthesis, University of California, Santa Barbara. Available at: https://github.com/OHI-Science/ohi-global/releases

Github repository: ohiprep Information about the original data and the methods (i.e., code) used to prepare data for the global assessment are available from Github. If this resource is used, please cite:

Ocean Health Index. Year. ohiprep version: Preparation of data for global scenarios of the Ocean Health Index, [date downloaded]. National Center for Ecological Analysis and Synthesis, University of California, Santa Barbara. Available at: https://github.com/OHI-Science/ohiprep/releases

Temporal range: 2012 - Present

Geographical range: Global

Supplementary information: Attributes: scenario (year); goal (code for the OHI goal); long_goal (full goal); dimension (dimension being calculated); region_id (numeric identifier of the global region, including countries and territories); region_name (name of the global region); value (scores ranging from 0-1 for all dimensions except trend, which is between -1 and 1).

For a full list of attributes and codes for goals/subgoals and dimensions, please visit: https://github.com/OHI-Science/ohi-global/tree/published/global2018#ohi-2018-global-metadata

Purpose of creation: The OHI measures progress towards a suite of key societal ‘goals’ representing the benefits and services people expect healthy oceans to provide. By analyzing these goals together and scoring them from 0-100, OHI assessments provide an integrated picture of the state of the ecosystem and can be communicated to a wide range of audiences.

The OHI framework is standardized yet tailorable to different contexts and spatial scales. This is possible because the core framework of how goals are scored does not change while the goal models themselves are developed with local information and local decisions specific to the context.

The Index measures the global state of the world’s oceans. An Index score for 220 countries & territories, the Antarctic region, and 15 sections of the high seas, is calculated using existing global data.

Assessments using the OHI framework are facilitated by the OHI Toolbox that is used to calculate and visualize scores. The OHI Toolbox is a suite of collaborative, open-source tools and instruction that provides structure for data organization and storage, data processing and goal modeling. Like the framework, the Toolbox has two parts: the core engine behind calculating and visualizing scores, which is an R package called ohicore, and a tailored repository to organize, store, and share information and write goal model equations specific to the local context.

The Toolbox enables assessments to be transparent, reproducible through access to
detailed methods and computational code, and repeatable with the ability to modify methods and computational code. The results are visualized in a Flower Plot for easy communication with a wide audience - each petal represents one goal and its length is with the score of the goal. To learn more about our open data science workflow, please see ohi-science.org/betterscienceinlesstime.

For more information regarding the OHI methodology, please visit: http://www.oceanhealthindex.org/methodology.

Version: 2012 - Present
Data lineage: Originally developed by an interdisciplinary team of scientists (Halpern et al., 2012, Nature), global assessments have been repeated every year since 2012 (Halpern et al., 2015, PLOS One; Halpern et al. in review).

For a full biography of the OHI, please visit: http://ohi-science.org/news/Biography-OHI.

Category: Ecological status and impact
Keywords: marine, coastal, ocean health, global, index

Similar datasets: NCEAS-001, NCEAS-003

Limitations:

Maintenance frequency: Data are updated on a yearly basis.
Main access/use constraint: See 'Other access/use constraint(s)'.

Other access/use constraints: You may freely download and use any data, code, or instructional guides created for the Ocean Health Index project. In exchange, please credit our work as described under 'Citations'.

Contact organisation: National Centre for Ecological Analysis and Synthesis, University of California

Organisation type: Creator
Acronym: NCEAS

Name: --
City: Santa Barbara
E-mail: knb-help@nceas.ucsb.edu
Web site: https://www.nceas.ucsb.edu/
Data format(s): Online database, Online maps
Distribution format(s): PDF, Raster (.tif, geotiff), Tabular (.xls, .csv, or .tab)
Dataset size (uncompressed): Variable

Webpage and/or download: http://www.oceanhealthindex.org

Other webpage: http://ohi-science.org/
Dataset ID: NCEAS-002

Web map service:

Factsheet:

Resolution, scale: Not reported
West bounding: -180.0
South bounding: -60.0
Metadata standard: UNEP-WCMC Specific

Reference system: WGS 1984
East bounding: 180.0
North bounding: 60.0
Date of metadata: 04/03/2019
Reef Life Survey (RLS) is a non-profit citizen science program in which trained volunteer SCUBA divers undertake standardised surveys of reef biodiversity on rocky and coral reefs around the world.

RLS aims to engage volunteer divers in the collection of scientific data on the status of & trends in reef biodiversity. RLS represents a unique collaboration between professional and citizen scientists, with a joint mission to inform managers and the broader community. RLS also seeks to inspire change in reef management and policy, to build public knowledge through its outputs, and to provide resources for marine enthusiasts to learn more about the marine life they interact with.

To cite the platform:

For each individual dataset, please see the corresponding metadata (e.g. http://catalogue-rls.imas.utas.edu.au/geonetwork/srv/eng/metadata.show?uuid=9c766140-9e72-4bfb-8f04-d51038355c59).

For a full list of reports based on the data available through RLS, please visit: https://reeflifesurvey.com/scientific-papers-management-reports/

Examples of datasets include: global reef fish; habitat quadrats; survey locations; cryptic fish; invertebrates.

Reef Life Survey (RLS) engages scientifically-trained recreational SCUBA divers as citizen scientists to collect detailed, standardised and quantitative data on biodiversity on shallow rocky and coral reefs, worldwide. The data have been validated through scientific studies (including 6 papers in Nature since 2013) and formed an important part of national biodiversity reporting in Australia for the 2016 State of the Environment report. Standardised RLS data are currently available for 52 countries.
Dataset ID: RLS-001


Version:

Data lineage: Reef Life Survey (RLS) is committed to continuing data collection over large scales to allow ongoing calculation and reporting of these indicators. RLS has a proven extremely cost-effective and productive model, and is in the process of expanding time series data internationally. The single set of standardised methods will not be changed, and are comprehensive enough to likely allow back-calculation of newly developed indicators in future.

Category: Ecological status and impact

Keywords: Coral reefs, fish, species occurrence, survey, citizen science

Similar datasets: WCMC-008, WRI-001, WCMC-009, WCMC-045, WCMC-001

Limitations:

Maintenance frequency:

Main access/use constraint: See 'Other access/use constraint(s)'.

Other access/use constraints: RLS data are freely available to the public for non-profit purposes, so not only managers, but also groups such as local dive clubs or schools may use these data to look at changes over time in their own local reefs. By making data freely available and through public outputs, RLS aims to raise broader community awareness of the status of Australia’s marine biodiversity and associated conservation issues.

Contact organisation:

Organisation type: University of Tasmania

Acronym: RLS

Name: Enquiries

Position: Custodian

City: Tasmania

Country: Australia

E-mail: enquiries@reeflifesurvey.com


Data format(s): Online database

Distribution format(s): Tabular (.xls, .csv, or .tab)

Dataset size (uncompressed): Variable

Webpage and/or download: http://reeflifesurvey.imas.utas.edu.au/static/landing.html

Other webpage:

Web map service:
## Factsheet

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Description: Reefs at Risk Revisited (2011) is a high-resolution update of the original global analysis, Reefs at Risk: A Map-Based Indicator of Threats to the World's Coral Reefs, 1998. Reefs at Risk Revisited uses a global map of coral reefs at 500-m resolution, which is 64 times more detailed than the 4-km resolution map used in the 1998 analysis, and benefits from improvements in many global data sets used to evaluate threats to reefs (most threat data are at 1 km resolution, which is 16 times more detailed than those used in the 1998 analysis).

The Reefs at Risk Revisited report provides a detailed assessment of the status of and threats to the world's coral reefs. It evaluates threats to coral reefs from a wide range of human activities, and includes an assessment of climate-related threats to reefs. It also contains a global assessment of the vulnerability of nations and territories to coral reef degradation.


Temporal range: 2011

Geographical range: Global

Supplementary information:
  - Base Data: Data and GIS Base Data: Metadata
  - Global Threats: Data and GIS Global Data: Metadata
  - Local Threats: Data and GIS Local Threats Data: Metadata
  - Local Threats (Vector Only): Data and GIS Local Threats (Vector Only) Data: Metadata

  - Files to be used in Google Earth and other map applications that support KML.
  - Local & Global Threats in 2050 (3.1 Mb)
  - Local & Global Threats in 2030 (3.1 Mb)
- Local Threats: Present (3.1 Mb)

Global, Atlantic, Australia, Indian Ocean, Middle East, Pacific and Southeast Asia factsheets (PDF) are available from the website.

This is the first Reefs at Risk project to incorporate data on global-level threats. These data not only enable estimations of current and imminent reef condition, but also to project trends well into the future. For the global-level threats, new models were not developed, but rather incorporated existing data from partner organizations on past thermal stress, future thermal stress, and ocean acidification. These data have enabled considerations of impacts to date and the potential future effects of ocean warming and acidification on reefs to 2030 and 2050 using climate projection scenarios.

Reefs at Risk Revisited brings together data on the world’s coral reefs in a global analysis designed to quantify threats and to map where reefs are at greatest risk of degradation or loss. More than 50 data sources were incorporated into the analysis -- including data on bathymetry, land cover, population distribution and growth rate, observations of coral bleaching, and location of human infrastructure. These data were consolidated within a geographic information system (GIS), and then used to model several broad categories of threat from human activities, climate change, and ocean acidification. In the absence of complete global information on reef condition, this analysis represents a pragmatic hybrid of monitoring observations and modelled predictions of reef condition.

Local threats addressed in the analysis were: coastal development; watershed-based pollution; marine-based pollution and damage; and overfishing and destructive fishing. Global threats addressed were: thermal stress (warming sea temperatures, which can induce coral bleaching) and ocean acidification (driven by increased CO2, which can reduce coral growth rates).

The four local threats to coral reefs were modelled separately, and later combined in the Reefs at Risk integrated local threat index. The modelling approach is an extension and refinement of that used in previous Reefs at Risk analyses, and benefited from the input from more than 40 coral reef scientists and other experts. For each local threat, sources of stress that could be mapped were identified and combined into a proxy indicator that reflected the degree of threat. These "stressors" include human population density and infrastructure features such as location and size of cities, ports, and hotels, as well as more complex modelled estimates such as sediment inputs from rivers. For each stressor, distance-based rules were developed, such that threat declines as distance from the stressor increases. Thresholds for low, medium, and high threats were developed using available information on observed impacts to coral reefs.

For more detailed information regarding the methodology, please visit: http://www.wri.org/sites/default/files/technical_notes.pdf.

Version: 2011

Category: Ecological status and impact

Keywords: coral reefs, climate change, ecosystem services, fisheries, oceans, water

Similar datasets: WCMC-008, WRI-001, WCMC-009, WCMC-045, WCMC-001

Limitations: Detailed information can be found in the Technical Notes on Modeling Threats to the World’s Coral Reefs, found at URL: www.wri.org/sites/default/files/technical_notes.pdf.

Maintenance frequency: Data are not being updated.

Main access/use constraint: Creative Commons Attribution 3.0 Unported (CC BY 3.0). See http://creativecommons.org/licenses/by/3.0/ for details. Free to (1) copy/distribute/transmit the work, (2) adapt the work, and (3) make commercial use of the work.

Other access/use constraints: For full listing of conditions and exceptions, please visit http://www.wri.org/publications/permissions-licensing.

Contact organisation: World Resources Institute

Organisation type: Custodian

Acronym: WRI

Name: Lauretta Burke
City: Washington, DC
Country: USA
E-mail: lauretta@wri.org
Web site: http://www.wri.org/profile/lauretta-burke

Data format(s): KML, Tabular (.xls, .csv, or .tab), Vector (polygon; .shp)
Distribution format(s): KML, Tabular (.xls, .csv, or .tab), Vector (polygon; .shp)

Dataset size (uncompressed): Variable

Webpage and/or download: http://www.wri.org/publication/reefs-risk-revisited

Web map service: https://gis.unep-wcmc.org/arcpy/rest/services/marine/WRI002_ReefsAtRiskRevisited_2011/MapServer


Resolution, scale: Reference system: Unknown
West bounding: -180.0
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North bounding: 50.0
Metadata standard: UNEP-WCMC Specific
Date of metadata: 23/04/2016

Global Fishing Watch

**Description:** We’re revolutionizing the ability to monitor the global commercial fishing fleet, offering near real-time tracking of fishing activity via our public map. Anyone can use it, for free, to track fishing boats and download data about their past and present activities. Our platform is helping enable scientific research, advocate for better policies and marine protection, and improve the way fishing is managed.

**Citation(s):**
To copy, download or otherwise use any images, screen shots, data products, or other materials on the Site, You must include any and all notices or marks of attribution included on the Web page or product. Such notices or marks may include, without limitation, copyright notices, logos, and links.

If You include the Site in a bibliography or use the entire Site as a source, use the following citation format:

Global Fishing Watch. [2018 or current year in the GFW copyright notice on the home page]. www.globalfishingwatch.org

If You use a screen shot, image, data product, or other material from the Site, include any attribution and use the following citation format:

Global Fishing Watch. [2018 or current year in the GFW copyright notice on the page accessed]. Accessed on [date accessed]. [Link to the page].

**Temporal range:** January 2012 - Present

**Geographical range:** Global

**Supplementary information:**

You don’t need to be an expert to use the platform, any more than you need to know about complex algorithms to use a search engine: it’s aimed at members of the public and journalists as much as researchers, campaigners and governments.

The map gives the public a way to see the tracks of commercial fishing vessels at sea in near real-time. Using our freely accessible map, anyone is able to analyze historical data, dating back to 2012, upload their own datasets to deepen and broaden their own analyses and save and share their work.
Users can create heat maps to see patterns of commercial fishing activity, view tracks of individual vessels, and overlay information like the locations of marine protected areas or different countries’ exclusive economic zones (EEZ).

The process starts with vessel tracking data. While Global Fishing Watch uses several vessel tracking systems, we start with the automatic identification system (AIS), a GPS-like device that large ships use to broadcast their position in order to avoid collisions. The International Maritime Organization and many national governments require larger boats including many commercial fishing vessels to use AIS. Each year, more than 300,000 unique AIS devices broadcast the location of a vessel along with other information showing its identity, course and speed. Ground stations and satellites pick up this information, meaning a ship’s movements can be followed even in the remotest parts of the ocean.

Global Fishing Watch runs AIS data through two neural networks using computer algorithms to learn and look for patterns in large data sets. More than 60 million points of information per day from more than 300,000 vessels are fed through machine-learning classifiers to determine the type of ship (e.g., cargo, tug, sail, fishing), its size, what kind of fishing gear (e.g. longline, purse seine, trawl) it’s using, and where and when it’s fishing based on its movement patterns. To do this, our research partners and fishery experts have manually classified thousands of vessel tracks to “teach” our algorithms what fishing looks like.

By using cloud computing to spread the load over thousands of machines in parallel, we’re able to apply that learning to the entire dataset producing 37 billion points over five years.

Global Fishing Watch makes this vessel tracking information available to all through our interactive online map and downloadable data. Anyone with an internet connection can trace the movements of about 60,000 commercial fishing boats, along with their name and flag state, in near real time: our data shows all activity from 1 January 2012 until 72 hours ago.

Version: Daily updates
Data lineage: The website updates regularly, as new automatic identification system (AIS) data become available.
Category: Ecological status and impact
Keywords: Fishing, global, satellite, AIS
Similar datasets: UCL-001
Limitations: Only a small fraction of the world’s roughly 2.9 million fishing boats carry AIS. However, these boats are responsible for a disproportionate amount of the fish caught, especially far from shore. It’s estimated vessels with AIS account for over half the fishing effort more than 100 nautical miles from shore, and as much as 80% of the fishing in the high seas.

Maintenance frequency: Data are updated each day.
Dataset ID: GFW-001

**Main access/use constraint:** Creative Commons Attribution-ShareAlike 4.0 International

**Other access/use** For full 'terms of use', please visit: https://globalfishingwatch.org/terms-of-use/constraints:

**Contact organisation:** Global Fishing Watch
**Organisation type:** Custodian  **Acronym:**

**Name:**  **Position:**
**City:**  **Country:**
**E-mail:** research@globalfishingwatch.org.
**Web site:** [http://globalfishingwatch.org/](http://globalfishingwatch.org/)
**Data format(s):** Online maps
**Distribution format(s):** Online maps

**Dataset size (uncompressed):** Not reported

**Webpage and/or download:** [http://globalfishingwatch.org/data](http://globalfishingwatch.org/data)
**Other webpage:**
**Web map service:**

**Factsheet:**

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Description: The RAM Legacy Stock Assessment Database (http://ramlegacy.org) offers a compilation of stock assessment results for commercially exploited marine populations from around the world. It is inspired by Dr. Ransom A. Myers' original stock-recruitment database, which is no longer being updated.

Citation(s): Ricard, D., Minto, C., Jensen, O.P. and Baum, J.K. (2013) Evaluating the knowledge base and status of commercially exploited marine species with the RAM Legacy Stock Assessment Database. Fish and Fisheries 13 (4) 380-398. DOI: 10.1111/j.1467-2979.2011.00435.x

Temporal range: 1950 to Present

Geographical range: Global

Supplementary information: Supplementary information regarding the database can be found in the supplementary material (http://ramlegacy.marinebiodiversity.ca/ram-legacy-stock-assessment-database/ricard-et-al.-2011-fish-and-fisheries-supplementary-material). Additional resources are also available from the website.

Purpose of creation: The database is intended to offer new insights into the status of exploited populations and to facilitate new research in population dynamics and fishery management.

Creation methodology: The core of the database comprises time series of total biomass, spawner biomass, recruits, fishing mortality and catch/landings. For version 1.0 of the dataset, stock assessments were assembled from 21 national and international management agencies for a total of 331 stocks (295 fish stocks representing 46 families and 36 invertebrate stocks representing 12 families), including nine of the world's ten largest fisheries. Stock assessments were available from 27 large marine ecosystems, the Caspian Sea and four High Seas regions, and include the Atlantic, Pacific, Indian, Arctic, and Antarctic Oceans. Most assessments came from the USA, Europe, Canada, New Zealand, and Australia. Assessed marine stocks represent a small proportion of harvested fish taxa (16%), and an even smaller proportion of marine fish biodiversity (1%), but provide high-quality data for intensively studied stocks.
**Dataset ID:** RAM-001  
**Version:** 3.0 (2015)  
**Data lineage:** Version 3.0 (only available online) supersedes version 1.0 of the database (a static version is available for download from the website).  
**Category:** Ecological status and impact  
**Keywords:** fisheries, stock assessment, marine, coastal, meta-analysis, overfishing, population dynamics models, relational database  
**Similar datasets:**  
**Limitations:** A QA/QC summary document was created for each assessment, containing summary details of the stock, a selection of biometrics and ratios for comparison (e.g., current status relative to BRP), and time series plots of the biomass, recruitment, and exploration trajectories. These QA/QC documents were then used to identify and correct errors in the operational database. Once completed, a quality-control flag was then inserted to signify the assessment had passed the check.  
**Maintenance frequency:** Data are repeatedly and frequently updated.  
**Main access/use constraint:** See 'Other access/use constraint(s)'.  
**Contact organisation:** School of Aquatic and Fishery Sciences, University of Washington  
**Organisation type:** Custodian  
**Acronym:**  
**Name:** Daniel Hively  
**Position:** Research Scientist  
**City:** Washington  
**Country:** Seattle, USA  
**E-mail:** danjhively@gmail.com  
**Web site:** [http://fish.washington.edu/](http://fish.washington.edu/)  
**Data format(s):** Access database (.accdb), Online database, PDF, Tabular (.xls, .csv, or .tab)  
**Distribution format(s):** Access database (.accdb), Online database, PDF, Tabular (.xls, .csv, or .tab)  
**Dataset size (uncompressed):** 24 Mb  
**Webpage and/or download:** [http://ramlegacy.org/](http://ramlegacy.org/)  
**Factsheet:**  
**Resolution, scale:** Not applicable  
**Reference system:** Not applicable  
**West bounding:** -180.0  
**East bounding:** 180.0  
**South bounding:** 90.0  
**North bounding:** 90.0  
**Metadata standard:** UNEP-WCMC Specific  
**Date of metadata:** 09/11/2016
SeagrassNet is a worldwide monitoring program that investigates and documents the status of seagrass resources and their threats. The program started in 2001 in the Western Pacific and currently includes 122 sites in 33 countries, with a global monitoring protocol and web-based data reporting system. The aim of SeagrassNet is to preserve seagrass ecosystems by increasing both scientific knowledge and public awareness of this threatened coastal resource.

Citation(s):

Temporal range: 2001-
Geographical range: Global
Supplementary information: The SeagrassNet database is in MySQL with a php front-end for the QA/QC and a Drupal (php based) for the main website.

Purpose of creation: A lack of information exists on the status and health of seagrasses worldwide, particularly in less economically developed regions. SeagrassNet’s efforts to monitor known seagrass areas and to make a preliminary inspection of uncharted seagrasses are important first steps in understanding and sustaining the seagrass resource.

Creation methodology: SeagrassNet teams composed of scientists and managers from participating countries conduct synchronous quarterly sampling of selected plant and environmental parameters to determine seagrass habitat status and trends. SeagrassNet Team Leaders are trained at workshops where they learn sampling techniques, plant ID, and environmental monitoring. They also learn to upload their data to the SeagrassNet Web portal for incorporation into the global database. See

Version: 2013

Data lineage:

Category: Ecological status and impact

Keywords: marine, coastal, benthic

Limitations:

Maintenance frequency: Data are updated a few times per year.

Main access/use constraint: See 'Other access/use constraint(s)'.

Other access/use constraints: Please contact Prof Fred Short (fred.short@dnr.wa.gov or fredshort@gmail.com).

Contact organisation: Washington State Department of Natural Resources, Aquatic Resources Division

Organisation type: Custodian

Acronym: SeagrassNet

Name: Prof Fred Short

City: Olympia

E-mail: fred.short@dnr.wa.gov

Web site: www.SeagrassNet.org

Data format(s): MySQL

Distribution format(s): Dataset size (uncompressed):

Webpage and/or download: http://www.seagrassnet.org/about-seagrassnet

Other webpage:

Web map service:

Factsheet: http://wcmc.io/seagrass

Resolution, scale: Not applicable

Reference system: WGS 1984

West bounding:

East bounding:

North bounding:

Metadata standard: UNEP-WCMC Specific

Date of metadata: 29/05/2015
Description: TeleGeography's interactive submarine cable map (https://www.submarinecablemap.com/) shows the majority of active and planned international submarine cable systems and their landing stations.

Citation(s): International Cable Protection Committee (ICPC). (year). Submarine cable map [Online]. Available at: https://www.submarinecablemap.com/ [date accessed].

Temporal range: Unknown
Geographical range: Global

Supplementary information: None.

Purpose of creation: Selecting a cable route on the map provides access to data about the cable, including the cable's name, ready-for-service (RFS) date, length, owners, website, and landing points. Selecting a landing point provides a list of all submarine cables landing at that station.

Creation methodology:

POWER CABLES

The ICPC is developing a list of submarine power cables, including landing points, operating capacity and Maintenance Authorities. The list can be viewed here: https://iscpc.org/cable-data/power-cable-systems/.

SCIENTIFIC CABLES

Since the beginning of the 1990's the need to obtain various forms of scientific data (e.g. oceanographic, seismic) has meant that a number of redundant telecommunications cables have been put back into service under new owners who are not part of the telecommunications industry. These cables have actually been notified by their original owners as out of service to hydrographic offices and may have been removed from navigation charts, however on cable charts they are usually designated as out of service. It is therefore essential to check the status of these cables prior to the start of any operations in the vicinity. The list can be viewed here: https://iscpc.org/cable-data/scientific-cables/.
Version: Not reported.

Category: Ecological status and impact

Keywords: Submarine cables, ocean

Similar datasets: The cable routes on our map are stylized and do not reflect the actual path taken by systems.

This design approach makes it easier to follow different cables and discern their landing points. In real life, cables that cross similar areas of an ocean take similar paths. These paths are chosen after comprehensive marine surveys that select routes to avoid hazardous conditions, which could potentially damage a cable.

The ICPC Secretariat may be able to assist you in identifying submarine cables in your area of operations. Please e-mail the following information to secretary@iscpc.org:
- Name, location and contact information of the company performing work.
- The nature of the activity, latitude and longitude of area of operations, schedule of operations, and any other information you feel will be beneficial.

Maintenance frequency: Data are repeatedly and frequently updated.

Main access/use constraint: None.

Other access/use constraints: None.

Contact organisation: International Cable Protection Committee

Organisation type: Resource provider

Acronym: IPC

Name: 

Position: 

City: 

Country: 

E-mail: 

Web site: 

Data format(s): Online maps, Tabular (.xls, .csv, or .tab)

Distribution format(s): Online maps, Tabular (.xls, .csv, or .tab)

Dataset size (uncompressed): Unknown

Webpage and/or download: https://iscpc.org/cable-data

Other webpage: 

Web map service: 

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Dataset ID: ICPC-001

LITTERBASE Online Portal for Marine Litter

Description: LITTERBASE summarises results from more than 1,900 scientific studies in understandable global maps and figures and opens scientific knowledge on marine litter to the public.


Temporal range: 2013 - Present

Geographical range: Global

Supplementary information: None.

This information is continuously updated and visualised in global distribution maps. However, litter has been quantified in many different units by different workers, which hampers direct comparison. Therefore, users can select subsets of data with the same unit for direct comparison in addition to global maps with all litter quantities.

Furthermore, the information on display can be filtered according to size category of the litter (macro: > 5 mm, micro: ≤ 5 mm, nano: ≤ 100 nm) and habitat considered (beach, sea surface, water column, seabed).

The composition of litter in different realms of the ocean is summarised in infographics.

- Litter quantities were taken from publications.
- The most commonly used units [items / km²; items / km; items / m³] can be used to filter data. If possible, other dimensions were standardised to these units to allow comparison. The remaining units were not converted and are combined in “Other Unit / No Value” and displayed by symbols of uniform size not providing quantitative information.
- If no litter quantity was given for a location (presence data), it was included in “Other Unit / No Value”.
- A 9th-root transformation was applied to reduce the absolute difference between
extremely large and small values enabling a comparative presentation in a single map
- If several quantities were reported for one site, the mean is shown in the map
- Spatially extensive data sets were aggregated to means for sub-areas
- Litter was grouped into size categories, thus macro: ≥ 5mm; micro: < 5 mm; nano: < 100 nm
- If no precise position was given, broader geographic information (e.g. beach name) was used to extract positions from Google Maps
- Slide bars can be used to select studies from certain time periods (year of publication)
- Further details are displayed by clicking on the symbols

Version: 1.0
Data lineage: Not reported.
Category: Ecological status and impact
Keywords: Marine litter, marine debris, microplastic, global distribution, composition, GIS, WebGIS

Limitations: LITTERBASE is constantly updated to keep pace with the continuous progress in this field of research, but on occasion publications may be overlooked. Please, notify the team of missing publications (litterbase@awi.de).

Maintenance frequency: Data are updated in intervals that are uneven in duration.

Other access/use constraints: Not reported.

Contact organisation: Alfred Wegener Institute, Helmholtz Center for Polar and Marine Research

Organisation type: Creator
Acronym: AWI

Name: Country: Germany
City: Bremerhaven
E-mail: https://www.pangaea.de/contact/
Web site: www.awi.de
Data format(s): Online database
Distribution format(s): Online database
Dataset size (uncompressed): Unknown

Webpage and/or download: http://litterbase.awi.de/litter
Other webpage:
Web map service:
Dataset ID: AWI-002

Factsheet:

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Plastic Debris Open Ocean (2014)

High concentrations of floating plastic debris have been reported in remote areas of the ocean, increasing concern about the accumulation of plastic litter on the ocean surface. Since the introduction of plastic materials in the 1950s, the global production of plastic has increased rapidly and will continue in the coming decades. However, the abundance and the distribution of plastic debris in the open ocean are still unknown, despite evidence of affects on organisms ranging from small invertebrates to whales. In this work, we synthesize data collected across the world to provide a global map and a first-order approximation of the magnitude of the plastic pollution in surface waters of the open ocean.

Citation(s):

Temporal range: December 2010 - July 2011
Geographical range: Global
Supplementary information:
Purpose of creation:
This study reports an important gap in the size distribution of floating plastic debris as well as a global surface load of plastic well below that expected from production and input rates. Together with the lack of observed increasing temporal trends in surface plastic concentration, these findings provide strong support to the hypothesis of substantial losses of plastic from the ocean surface.

The distribution pattern agreed with those predicted from ocean surface circulation models, confirming the accumulation of plastic debris in the convergence zone of each of the five large subtropical gyres. Using the high and low ranges of spatial concentrations measured within 15 major convergence/divergence zones in the global ocean, the amount of plastic in the open-ocean surface is estimated to be between 7,000 and 35,000 tons. The plastic concentrations per surface area were comparable across each of the five accumulation zones, although the North Pacific Ocean contributed importantly to the global plastic load (between 33 and 35%), mainly owing to the size of this gyre. The plastic load in the North Pacific Ocean could be related to the high human population on the eastern coast of the Asian continent, the most densely populated coast in the world, with one-third of the
global coastal population. Indeed, the surface plastic concentrations measured in the Kuroshio Current, the western arm of the North Pacific Gyre, can become exceptionally high, including the highest reported for nonaccumulation region

The dataset assembled here included 3,070 total samples collected around the world. The frequency of occurrence of plastic debris in the surface samples of the open ocean was considerably high (88%). Nevertheless, the concentration of plastic ranged broadly, spanning over four orders of magnitude across the open ocean.

From December 2010 to July 2011 the Spanish circumnavigation expedition Malaspina 2010 sampled surface plastic pollution at 141 sites across the oceans. Floating plastic was collected with a neuston net (1.0 × 0.5-m mouth, 200-μm mesh) towed at 2–3 knots for periods 10–15 min (total tows 225). Tow areas were calculated from the readings of a flowmeter in the mouth of the net. Wind speed and water surface density were measured during each tow to estimate average friction velocity in water (u*).

The material collected by the net was mixed with 0.2-mm-filtered seawater. Subsequently, floating plastic debris was carefully picked out from the water surface with the aid of a dissecting microscope. This examination was repeated at least twice to ensure the detection of all of the smallest plastic particles. To confirm the plastic nature of the material collected in the examinations, Raman spectroscopy was applied to a random subset of particles (n = 67). The analysis confirmed the identity of all plastic particles, and polyethylene was found to be the most common polymer type. The vast majority of the plastic items consisted of fragments of larger objects, and industrial resin pellets represented only a small fraction (<2%) of all encountered items. Textile fibers were found only occasionally and were excluded from the analysis because they could be airborne contamination from clothing during the sampling or processing.

For further details on the methodology used, please see Cózar et al. (2014) (open access).

Version: 2014
Data lineage: See Cózar et al. (2014) for further details.
Category: Ecological status and impact
Keywords: plastic debris, ocean health, pressure

Similar datasets: JAMSTEC-001
Limitations: See Cózar et al. (2014) for further details.
Maintenance frequency: Data are not being updated.
Main access/use constraint: See 'Other access/use constraint(s)'.

Other access/use constraints: Freely available online through the PNAS open access option.
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Ship Strike Database

**Description:** This is a global database of collisions between any type of vessel and whales, dolphins or porpoises, and an online public data entry system for submitting reports. The database includes information on the animals (e.g., species, size, observed injuries) and on the vessels with which a collision occurred.

**Citation(s):** International Whaling Commission (IWC) (2016). Ship strike database. URL: https://iwc.int/ship-strikes

**Temporal range:** 1877 - present

**Geographical range:** Global

**Supplementary information:**
- Table: a unique ID number (ID), the date on which a ship strike is considered to have occurred (EvidenceDate), further description of the ship strike date (EvidenceDateDescriptive), the ocean in which the ship strike occurred (LargeArea), the more precise area in which the ship strike occurred (SmallArea), the scientific name of the whale species that was struck (ScientificName), the common name of the whale species that was struck (CommonName), the certainty of the whale species identification (Confirmed, Unconfirmed, Indeterminate) (IDQuality), the type of ship strike evidence (At sea, Collision or Shore) (EvidenceType), the evidence for a ship strike (CollisionEvidence), the impact of the strike on the whale (StrikeResult), other information (OtherInfo) and the vessel type with which the collision occurred (VesselType).

**Purpose of creation:** Ship strikes are an international problem that requires improved knowledge of the behaviour and movements of cetaceans and vessels, and a much better understanding of the numbers of collisions and the circumstances surrounding them. The IWC is committed to gathering this information in order to prioritise areas and species for targeted mitigation measures. A vital component of this is the IWC ship strikes database. The objectives of developing the database are to lead to more accurate estimates of the incidence of mortality and injuries, to help detect trends over time, to allow better modelling of risk factors (e.g., vessel type, speed, size), and to identify high risk or unsuspected problem areas.

**Creation methodology:** These data come mainly from reviews of historical sources including past national progress reports to IWC. These records include reports of carcasses showing evidence of collisions with vessels as well as direct reports of collisions where the...
fate of the whale may not be known. The database includes an online public data entry system for submitting reports. Ocean users are encouraged to report any collision they are involved in or witness. Each record is then verified by scientists and the information is used to build a better understanding of when, where and why collisions occur.

Version: 1.0


Category: Ecological status and impact

Keywords: whale, shipping, ship strike, marine, pelagic, deep seas, cetacean, collision

Limitations: The interpretation as to whether these incidents were indeed definite ship strikes relies on the provider of the data or authors of review papers. All the data are subjected to the review process currently being established by the IWC data review group. These records include reports of carcasses showing evidence of collisions with vessels as well as direct reports of collisions where the fate of the whale may not be known. For the majority of these records, the available information is limited. These data are provided subject to these caveats and particularly to allow potential data holders to check whether incidents are already in the database.

Maintenance frequency: Data are updated in intervals that are uneven in duration.

Main access/use constraint: See 'Other access/use constraint(s).

Other access/use constraints: Please contact Simone Panigada or Fabian Ritter.

Contact organisation: Tethys Research Institute

Organisation type: Custodian

Acronym: IUCN Marine Mammal Protec

Name: Simone Panigada or Fabian Ritter

Position: IUCN Marine Mammal Protec

City: Milan

Country: Italy

E-mail: panigada@69@gmail.com; ritter@m-e-e-r.de

Web site: http://www.tethys.org/tethys/

Data format(s): Tabular (.xls, .csv, or .tab)

Distribution format(s): Tabular (.xls, .csv, or .tab)

Dataset size (uncompressed): 82 KB

Webpage and/or download: https://iwc.int/ship-strikes

Other webpage: http://iwc.int/index.php?cID=872&cType=document
**Web map service:**

**Factsheet:**

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Description: Islands represent less than 5% of the earth's land area yet harbor 61% of known species extinctions since 1500 (Tershy et al. 2015, UNEP-WCMC 2015), and 41% of today's IUCN Critically Endangered species (Spatz et al. 2017). Invasive vertebrates are a leading cause of insular extinctions and remain a critical threat to endangered island species today (Bellard et al. 2016; Doherty et al. 2016).

The Threatened Island Biodiversity (TIB) database is the most comprehensive global review of IUCN Threatened Species breeding on islands and at risk from invasive vertebrate, guiding where conservation interventions can prevent island extinctions.

TIB partners include Island Conservation, University of California at Santa Cruz - Conservation Action Laboratory, BirdLife International, and the IUCN Invasive Species Specialist Group.

Citation(s): The recipient of the data will provide a full and appropriate acknowledgement and citation in any materials or publications derived in part or in whole from the data; relevant citation details will be provided with each dataset.

For any publications making substantial use of the data, Island Conservation, University of California at Santa Cruz, Coastal Conservation Action Laboratory (UCSC CCAL), BirdLife International and IUCN Invasive Species Specialist Group (ISSG) welcome the opportunity for co-authorship, collaboration and to comment prior to publication. Expressions of interest can be sent to tib@islandconservation.org.

Recommended citation for the entire database:


Temporal range: 1500 A.D. - 2015
Geographical range: Global, marine, terrestrial
For further information about the database, please refer to the following resource:


This database was created to help guide where conservation intervention can prevent island extinctions. To date, the database includes almost 2,000 islands for nearly 1,200 Critically Endangered and Endangered terrestrial vertebrate species, collated from almost 1,500 scientific literature sources, management documents, and databases, and from the contribution of more than 500 experts. The dataset also contains data on Vulnerable seabirds, the presence of invasive vertebrates, and important island characteristics, such as island size and human habitation, which are often used in conservation priority setting.

The database contains data on the island distribution of highly threatened terrestrial species of amphibians, reptiles, birds, and mammals recognized by the IUCN Red List of Threatened Species (version 2013). Seabirds breeding on islands were included, but marine mammals and sea turtles were excluded because of the broad global distribution of many of these species’ breeding sites. All vertebrate taxa assessed as critically endangered or endangered on the IUCN Red List of Threatened Species were downloaded. The partners then identified those that breed on islands or on both islands and continents. With this list, a systematic review as followed to identify each island with a breeding population of a highly threatened vertebrate species (a species breeding on an island was considered a single population), documenting the present (1990 to 2015, when the data collection process was concluded) and historic (<1990 to 1500 A.D.) breeding status for each population on each island, followed by a review of the data by more than 500 experts.

The underlying spatial islands dataset, The Global Island Database, was created by UNEP-WCMC.

Version: 1.0 (2016)

Data lineage: Version 1.0 (2016) includes data from the IUCN Red List of Threatened Species, Version 2013. Island Conservation, UCSC CCAL, BirdLife International and IUCN ISSG may update or make changes to the data provided at any time without notice; but no commitment is made to update the information contained therein.

Category: Ecological status and impact

Keywords: Island, invasive, non-native, biodiversity, threatened species, red list

Similar datasets: WCMC-005

Limitations: Island Conservation, University of California at Santa Cruz, Coastal Conservation Action Laboratory (UCSC CCAL), BirdLife International and IUCN ISSG makes no warranties or representations, express or implied, regarding the use of the material appearing in this dataset with regard to their correctness, reliability, accuracy, or otherwise. The material and geographic designations in this dataset do not imply the expressions of any opinion whatsoever on the part of Island Conservation, UCSC CCAL, BirdLife International or IUCN ISSG concerning the legal status of any
country, territory or area, nor concerning the delimitation of its frontiers or boundaries. None of Island Conservation, UCSC CCAL, BirdLife International or IUCN ISSG nor any affiliated or related entities or content providers shall be responsible or liable to any person, firm or corporation for any loss, damage, injury, claim or liability of any kind or character based on or resulting from any information contained in the dataset. Island Conservation, UCSC CCAL, BirdLife International and IUCN ISSG may update or make changes to the data provided at any time without notice; but no commitment is made to update the information contained therein.

**Maintenance frequency:**

Corrections are made on an ad-hoc basis.

**Main access/use constraint:**

See 'Other access/use constraint(s)'.

**Other access/use constraints:**

The data are supplied only for conservation purposes, scientific analysis or research. The recipient of the data will provide a full and appropriate acknowledgement and citation in any materials or publications derived in part or in whole from the data; relevant citation details will be provided with each dataset. For any publications making substantial use of the data, Island Conservation, University of California at Santa Cruz, Coastal Conservation Action Laboratory (UCSC CCAL), BirdLife International and IUCN Invasive Species Specialist Group (ISSG) welcome the opportunity for co-authorship, collaboration and to comment prior to publication. Expressions of interest can be sent to tib@islandconservation.org.

Reproduction of the dataset or products derived from it, either whole or in part, for commercial purposes is prohibited without prior written permission from a representative of Island Conservation, UCSC CCAL, BirdLife International or IUCN ISSG. For the purposes of these Terms of Use, "commercial purposes" means a) any use by, on behalf of, or to inform or assist the activities of, a commercial entity (an entity that operates "for profit") or b) use by any non-profit entity for the purposes of revenue generation. If you require permission please contact tib@islandconservation.org.

The recipient will not publish the data in their original format, either whole or in part, on a website, FTP site, CD, memory stick or any other media. The recipient should provide a link to the original data source location at www.tib.islandconservation.org where appropriate.

Use of these data does not constitute endorsement by Island Conservation, UCSC CCAL, BirdLife International or IUCN ISSG of any derived products, reports or analyses. The Island Conservation, University of California, BirdLife International or IUCN ISSG logos must not be used on any derived products, reports or analyses, or supporting materials, without express permission.

The recipient will only use the data provided for the purpose for which it was requested, if subsequent or different use is required the recipient must contact the Island Conservation, University of California, BirdLife International or IUCN ISSG at tib@islandconservation.org again for written approval.

The recipient will not pass the original datasets on to third parties and will direct all requests for use of the data back to the Island Conservation, University of California, BirdLife International or IUCN ISSG at tib@islandconservation.org.

The recipient may only pass on datasets derived from the data supplied by Island Conservation, University of California, BirdLife International or IUCN ISSG if these derived data are supplied with the same terms of use.

Island Conservation, UCSC CCAL, BirdLife International and IUCN ISSG reserve the right to comment on the accuracy of representation of the data in material produced by a recipient. Island Conservation, UCSC CCAL BirdLife International and IUCN ISSG endeavor to maintain accurate and up-to-date data at all times, but can accept no responsibility for the consequences of errors or omissions in the data, for misuse of the data by any organization or individual, or for any damage done to computing systems into which the data are entered (see Disclaimer).

Either an electronic or two paper copies of all products published using data supplied by Island Conservation, UCSC CCAL, BirdLife International or IUCN ISSG will be sent, free of charge, c/o - Island Conservation, 100 Shaffer Road, Santa Cruz CA USA 95060 or via email to tib@islandconservation.org.

Contact organisation: Island Conservation

Contact organisation type: Creator

Acronym: TIBD-001

Name: Island Conservation

City: UCSC CCAL

E-mail: tib@islandconservation.org

Web site: http://tib.islandconservation.org/

Data format(s): Online database

Distribution format(s): Online database

Dataset size (uncompressed): Not reported

Webpage and/or download: http://tib.islandconservation.org/

Other webpage: 

Web map service: 

Factsheet:

Resolution, scale: Not applicable

Reference system: Not applicable

West bounding: 

East bounding: 

South bounding: 

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Metadata standard: UNEP-WCMC Specific

Date of metadata: 22/01/2019
Species+

Description: Species+ (www.speciesplus.net), developed by UNEP-WCMC and the CITES Secretariat, is a website designed to assist Parties with implementing CITES, CMS and other multilateral environmental agreements (MEAs). Species+ provides a centralised portal for accessing key information on species of global concern.

In particular, Species+ contains information on all species that are listed in the Appendices of CITES and CMS, as well as other CMS Family listings and species included in the Annexes to the EU Wildlife Trade Regulations.

Citation(s): UNEP (year). The Species+ Website. Nairobi, Kenya. Compiled by UNEP-WCMC, Cambridge, UK. Available at: www.speciesplus.net. [Accessed (please insert date of download dd/mm/yyyy)].

Temporal range: 1979 - present
Geographical range: Global

Supplementary information:
- The online database includes the following information for each taxa (genus, species and, where appropriate, subspecies):
  - CITES legal data: details of CITES Appendix listings, quotas and suspensions, as well as EU Annexes and EU decisions.
  - CMS legal data: details of the CMS Appendix listing, as well as listings in other CMS Family Agreements and MoUs.
  - Synonyms and common names.
  - Geographic distribution at the country and territory level (where available).
  - CITES Standard reference or CMS reference, where applicable, or other scientific literature references that relate to the species name or the distribution.

Purpose of creation: Species+ provides a centralised portal for accessing key information on species of global concern. Species+ contains information on all species that are listed in the Appendices of CITES and CMS, as well as other CMS Family listings and species included in the Annexes to the EU Wildlife Trade Regulations.

From Species+, users can download lists of CITES and CMS-listed species in Excel-ready comma-separated values ("csv") files directly from the site.

The CITES Trade Database (trade.cites.org) enables users (public) to access over 16 million records of trade in CITES-listed species compiled from Annual Reports.
submitted to UNEP-WCMC by CITES Parties.

The Checklist of CITES Species (checklist.cites.org) provides the official list of CITES-listed species (scientific names) and their associated scientific synonyms; common names in English, French and Spanish (where available) and the CITES Appendix in which they are currently listed. Information on historical Appendix listings, reservations and level of listing (e.g. if a whole family or order is listed) is also available through this website.

**Creation methodology:** Species+ contains information on all species that are listed in the Appendices of CITES and CMS, as well as other CMS Family listings and species included in the Annexes to the EU Wildlife Trade Regulations, as found on respective websites.

**Version:**

**Data lineage:** In 2013, UNEP-WCMC, in partnership with the CITES Secretariat and with additional support from UNEP, brought the various data-holdings together into one, comprehensive data portal to assist Parties to implement biodiversity MEAs.

**Category:** Trade

**Keywords:** taxonomy, species, CMS, CITES, legislation, distribution, trade, MEA

**Similar datasets:** None

**Limitations:** UNEP-WCMC endeavour to maintain accurate and up-to-date data at all times. However, if errors or omissions are identified (e.g. distribution references), the user should notify UNEP-WCMC (species@unep-wcmc.org) so that the website can be corrected.

**Maintenance frequency:** Data are repeatedly and frequently updated.

**Main access/use constraint:** Terms and Conditions of Use of Species+ (http://www.speciesplus.net/terms-of-use).

**Other access/use constraints:** None

**Contact organisation:** UN Environment World Conservation Monitoring Centre

**Organisation type:** Custodian

**Acronym:** UNEP-WCMC

**Name:** Dr. Kelly Malsch

**Position:** Head of Programme, Species

**City:** Cambridge

**Country:** United Kingdom

**E-mail:** kelly.malsch@unep-wcmc.org

**Web site:** http://www.unep-wcmc.org

**Data format(s):** Online database, Tabular (.xls, .csv, or .tab)

**Distribution format(s):** Online database, Tabular (.xls, .csv, or .tab)

**Dataset size (uncompressed):**
Dataset ID: WCMC-037

Webpage and/or download: [http://www.speciesplus.net](http://www.speciesplus.net)
Other webpage:
Web map service:

Factsheet:

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European Atlas of the Seas

Description: The European Atlas of the Seas is an easy-to-use and interactive web-based geographic application, providing general marine data and maritime information along with statistics on the European seas and coasts. The Atlas catalogue of maps covers various natural and socio-economic aspects and features in the marine and coastal regions of Europe. The data available in the European Atlas of the Seas is spatial marine data classified by different topics or thematic areas (tourism, transport, fisheries, sea bottom, etc.). The catalogue comprises more than 150 map layers and is constantly updated and upgraded.

Citation(s): To cite the website:

To cite the underlying data:
Please refer to the source information available for each dataset.

Temporal range: Not reported
Geographical range: European Waters
Supplementary information: Examples of available information includes: coastline erosion; land cover; river basins; sea level change; and rivers and lakes; areas of importance for biodiversity; ferry routes; marine traffic density map; etc.

Purpose of creation: This Atlas' aim is to bring statistical data in a comprehensive visual way to a broad public and at the same time serve as a support for the marine policy and blue economy.

Creation methodology: With a rich collection of informative facts and maps build on open data, the European Atlas of the Seas counts on the precious contribution of many data providers such as the European Commission, Directorate General for Maritime Affairs and Fisheries (DG MARE), other DGs and EU agencies, as well as the European Marine Observation and Data Network (EMODnet), the European Environmental Agency, Eurostat, Copernicus, the Joint Research Centre and others. Source providers are always acknowledged and a link to the source location is provided whenever possible.
Dataset ID: DGMARE-001

Version: Please refer to the original dataset.

Data lineage: Updated as new information becomes available.

Category: Biodiversity-related data portal

Keywords: Atlas, European seas, tourism, nature

Similar datasets:

Limitations: The European Commission maintains this website to enhance public access to information about its initiatives and European Union policies in general. Our goal is to keep this information timely and accurate. If errors are brought to our attention, we will try to correct them.

However, the Commission accepts no responsibility or liability whatsoever with regard to the information on this site. Please read the full legal & copyright notice: https://europa.eu/european-union/abouteuropa/legal_notices_en.

Maintenance frequency: Data are updated in intervals that are uneven in duration.

Main access/use constraint: See 'Other access/use constraint(s)'.

Other access/use constraints: See: https://europa.eu/european-union/abouteuropa/legal_notices_en. Reproduction is authorised, provided the source is acknowledged, save where otherwise stated.

With a rich collection of informative facts and maps build on open data, the European Atlas of the Seas counts on the precious contribution of many data providers such as the European Commission, Directorate General for Maritime Affairs and Fisheries (DG MARE), other DGs and EU agencies, as well as the European Marine Observation and Data Network (EMODnet), the European Environmental Agency, Eurostat, Copernicus, the Joint Research Centre and others. Source providers are always acknowledged and a link to the source location is provided whenever possible.

Contact organisation: Directorate General on Maritime Affairs and Fisheries of the European Commission

Organisation type: Resource provider

Acronym: DG MARE

Name: Brussels

Position: Belgium

City: Brussels

Country: Belgium

E-mail: MARE-ATLAS@ec.europa.eu


Data format(s): Online maps

Distribution format(s): Online maps

Dataset size (uncompressed): Variable
Dataset ID: DGMARE-001

Webpage and/or download: [https://ec.europa.eu/maritimeaffairs/atlas/maritime_atlas/](https://ec.europa.eu/maritimeaffairs/atlas/maritime_atlas/)

Other webpage: 

Web map service: 

**Factsheet:**

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<td>Metadata standard:</td>
<td>UNEP-WCMC Specific</td>
<td>Date of metadata:</td>
<td>03/03/2019</td>
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</table>
Description: The Atlas of Living Australia is a collaborative, national project that aggregates biodiversity data from multiple sources and makes it freely available and usable online. It is a node of the Global Biodiversity Infrastructure Facility (GBIF).

Citation(s): To cite the ALA as whole: Atlas of Living Australia website at http://www.ala.org.au. Accessed [date].

To cite individual datasets: occurrence records downloads contain a README file with instructions on how to cite the ALA and the data sets contained in the download. These downloads are now provided with an associated Digital Object Identifier (DOI), which can be found in both the email for the download as well as the README file mentioned above. The ALA encourage authors to link this download DOI to any subsequent publications (referencing the download data) via the DOI linking service provided by the publisher.

Temporal range: Geographical range: Australia

Supplementary information:

Purpose of creation: The ALA is Australia’s national biodiversity database. Founded on the principle of data sharing – collect it once, share it, use it many times – the ALA provides free, online access to millions of occurrence records to form the most comprehensive and accessible data set on Australia’s biodiversity ever produced. ALA’s mission is to lead the digital transformation of Australia’s biodiversity knowledge, promoting excellence and enabling collaboration in biodiversity research.

By aggregating biodiversity information and making it more available online, the ALA is assisting scientists, planners, managers and others to create a more detailed picture of Australia’s biodiversity. The ALA is used for research, environmental monitoring, conservation planning and management, education, and citizen science activities.

The content on the Atlas of Living Australia derives from a range of data providers, in accordance with the following Data Provider Agreement: https://www.ala.org.au/wp-content/uploads/2011/10/ALA-Data-Provider-
**Dataset ID:** CSIRO-001  
**Agreement-version-17.8.10.pdf.**

**Version:** Updated regularly

**Data lineage:** The Atlas of Living Australia is updated regularly, as new datasets become available.

**Category:** Biodiversity-related data portal

**Keywords:** Taxonomy, biogeography, Australia

**Similar datasets:** GBIF-001, OBIS-001

**Limitations:** Guidance on how datasets are submitted to the Atlas of Living Australia, including data standards and templates, can be found here: [https://www.ala.org.au/how-to-work-with-data/](https://www.ala.org.au/how-to-work-with-data/). The Atlas website, linked websites and Content are intended to provide information for general and scientific use, to assist research and public knowledge, discussion and policy development. The Atlas makes the Atlas website and Content available on the understanding that you use them at your own risk – they are provided ‘as is’ and ‘as available’ and you exercise your own skill, judgement and care with respect to their use or your reliance on them. The Atlas and data providers give no warranty regarding the quality, accuracy, completeness, currency, relevance or suitability for any particular purpose of the Content or the Atlas website. For more information, please visit: [https://www.ala.org.au/who-we-are/terms-of-use/#Copyright](https://www.ala.org.au/who-we-are/terms-of-use/#Copyright).

**Maintenance frequency:** Data are updated in intervals that are uneven in duration.

**Main access/use constraint:** See ‘Other access/use constraint(s)’.

**Other access/use constraints:** For more information, please visit the following sites:

- Copyright: [https://www.ala.org.au/who-we-are/terms-of-use/#Copyright](https://www.ala.org.au/who-we-are/terms-of-use/#Copyright)
- Terms of Use: [https://www.ala.org.au/who-we-are/terms-of-use/](https://www.ala.org.au/who-we-are/terms-of-use/)

**Contact organisation:** Commonwealth Scientific and Industrial Research Organisation

**Organisation type:** Resource provider  
**Acronym:** CSIRO

**Name:** --  
**Position:** --

**City:** Canberra  
**Country:** Australia

**E-mail:** data_management@ala.org.au; support@ala.org.au

**Web site:** [https://www.csiro.au/](https://www.csiro.au/)

**Data format(s):** Online database, Online maps
Dataset ID: CSIRO-001

Distribution format(s): API, Online database, Online maps, Tabular (.xls, .csv, or .tab), Vector (point; .shp)

Dataset size (uncompressed): Variable

Webpage and/or download: https://www.ala.org.au

Other webpage:

Web map service:

Factsheet:
Resolution, scale: Not reported
West bounding: 
South bounding: 
Metadata standard: UNEP-WCMC Specific

Reference system: WGS 1984
East bounding: 
North bounding: 
Date of metadata: 03/03/2019
Ocean Data Viewer (ODV)

Description: As part of the Ocean+ initiative, the Ocean Data Viewer (http://data.unep-wcmc.org) provides easy access to a range of datasets that are useful for informing decisions regarding the conservation of marine and coastal biodiversity. These decisions ultimately affect the ocean's health and productivity, which provide the ecosystem services that are necessary for our well-being, livelihoods, and survival. To date, the users of this tool include government agencies, scientists, researchers, the private sector, and non-governmental organisations.

Citation(s): Please cite individual datasets in accordance with the citation outlined on each dataset's landing page or in the accompanying metadata.

Please cite the Ocean Data Viewer as:

Temporal range: Variable
Geographical range: Global
Supplementary information:
Purpose of creation: In 2010, the 10th Conference of the Parties of the Convention on Biological Diversity identified the need for better access to marine data to support decision-making for the conservation and sustainable use of biodiversity in the open ocean and deep seas. UNEP-WCMC was asked to develop tools that can support assessment activities, help identify ecologically or biologically significant areas, and promote a better understanding of specific and cumulative human impacts, including those of invasive species.

UNEP-WCMC launched the ODV website in 2011 as a simple tool which can be used to access a range of data that help inform marine conservation decisions. The site also includes extensive metadata descriptions to give users contextual information, as well as brief introductions to key international conventions and initiatives, including links to their websites and specific decisions and declarations.

The Ocean Data Viewer is primarily a mechanism to view and download data, and is not intended to be used as for analysis or to query data.

Creation methodology: The datasets available on the Ocean Data Viewer were obtained from a number of internationally respected scientific institutions and other organisations that have agreed to make their data available to the global community to support and encourage better decision making with respect to biodiversity and ecosystem services. Currently, the ODV presents more than 30 global data sets on coastal and marine biodiversity (such as corals, mangroves and seagrasses) as well as data on eco-regions, biodiversity metrics, and ocean productivity and temperature. The ODV data sets are frequently used and cited in high-profile scientific articles and in global, regional and national biodiversity assessments.

ODV datasets in standard GIS format are just a few clicks away, and users who do not have GIS software can use the simple mapping interface. The ODV aims to prioritize data sharing and accessibility, and users are encouraged to contribute.

Version: 2016

Data lineage: The original ODV was launched in 2011 as a simple tool for accessing marine and coastal datasets. In November 2014, the ODV was re-launched to provide a more streamlined, user-friendly interface for viewing and accessing spatial data.

In 2015, the following features were added to the ODV:
- search functionality, with keyword recognition;
- data version control; and
- a feature highlighting datasets that have been added or updated within the previous 30 days.

In 2018, the Ocean+ initiative was launched, complementing the Ocean Data Viewer with Ocean+ Library (library.oceanplus.org) and Ocean+ Habitats (habitats.oceanplus.org).

Category: Biodiversity-related data portal

Keywords: marine, coastal, habitat, spatial data, biogeography, biodiversity

Similar datasets: WCMC-046, WCMC-047

Limitations: Detailed metadata accompany each dataset that is available on the Ocean Data Viewer. These metadata outline the methodologies used to create the datasets, as well as the intended use, access constraints, and known limitations.

We welcome feedback from data users, as well as contributions of additional/corrected datasets (marine@unep-wcmc.org). We encourage data users to read the ‘Manual of marine and coastal datasets of biodiversity importance’ (http://wcmc.io/MarineDataManual) as an introduction to the various challenges, gaps and limitations which can be presented by coastal and marine datasets, and particularly by those at the global scale.

Maintenance frequency: Data are updated in intervals that are uneven in duration.

Main access/use constraint: UNEP-WCMC General Data Licence (excluding WDPA). See www.unep-wcmc.org/policies/general-data-license-excluding-wdpa#data_policy and
Other access/use constraints:

UN Environment World Conservation Monitoring Centre

Organisation type: Custodian

Acronym: UNEP-WCMC

Name: Lauren Weatherdon

Position: Senior Programme Officer

City: Cambridge

Country: United Kingdom

E-mail: lauren.weatherdon@unep-wcmc.org

Web site: www.unep-wcmc.org

Data format(s): Raster (ESRI Grid), Vector (point; .shp), Vector (polygon; .shp), Vector (polyline; .shp), WMS

Distribution format(s): Raster (ESRI Grid), Vector (point; .shp), Vector (polygon; .shp), Vector (polyline; .shp), WMS

Webpage and/or download: http://data.unep-wcmc.org

Other webpage:

Web map service:

Factsheet:

Resolution, scale: -180.0

Reference system: WGS 1984

West bounding: -180.0

East bounding: 180.0

South bounding: -90.0

North bounding: 90.0

Metadata standard: UNEP-WCMC Specific

Date of metadata: 09/11/2016
Knowledge Network for Biocomplexity (KNB)

Description: The Knowledge Network for Biocomplexity (KNB; https://knb.ecoinformatics.org/) is an international repository intended to facilitate ecological and environmental research.

Citation(s): National Center for Ecological Analysis and Synthesis (NCEAS). The Knowledge Network for Biocomplexity. URL: https://knb.ecoinformatics.org/.

Temporal range: 1800 - 2015

Geographical range: Global

Supplementary information: The site also provides access to a range of tools that have been developed to facilitate effective data management, archiving content, and retrieving data for synthetic analysis projects. These include:
- Morpho, which allows researchers to create metadata (i.e. describe their data in a standardized format), and create a catalog of data & metadata upon which to query, edit and view data collections. In addition, it also provides the means to access network servers - like the KNB - in order to query, view and retrieve all relevant, public ecological data.
- rDataONE, an R package for accessing the KNB and other DataONE repositories.
- Metacat, a flexible metadata database that helps scientists find, understand and effectively use data sets they manage or that have been created by others.
- Ecological Metadata Language (EML), a metadata standard developed for the earth, environmental and ecological sciences. EML is implemented as a series of XML document types that can be used in a modular and extensible manner to document scientific research data.

Purpose of creation: For scientists, the KNB is an efficient way to share, discover, access and interpret complex ecological data. Due to rich contextual information provided with KNB data, scientists are able to integrate and analyze data with less effort. The data originate from a highly-distributed set of field stations, laboratories, research sites, and individual researchers. The foundation of the KNB is the rich, detailed metadata provided by researchers that collect data, which promotes both automated and manual integration of data into new projects.

As a long-term repository, the KNB allows you to preserve your data for future generations of scientists. However, you can share your data with your colleagues today, and get a permanent identifier for all files in your data set. The KNB supports
Digital Object Identifiers (doi), so your data sets can be confidently referenced in any publication. And as a DataONE Member Node, the KNB will securely replicate your data to other servers, maintaining all of the access controls you set, public or private. This means that your data are secure in the event that the KNB servers themselves experience any catastrophic failure.

As part of the KNB effort, data management software is developed in a free and open source manner, so other groups can build upon the tools. The KNB is powered by the Metacat data management system, and is optimized for handling data sets described using the Ecological Metadata Language, but can store any XML-based metadata document.

**Creation methodology:**

As part of the KNB effort, data management software is developed in a free and open source manner, so other groups can build upon the tools. The KNB is powered by the Metacat data management system, and is optimized for handling data sets described using the Ecological Metadata Language, but can store any XML-based metadata document.

**Version:**

**Data lineage:**

**Category:** Biodiversity-related data portal

**Keywords:** database, biodiversity, data repository, environmental, DataONE, NCEAS, KNB

**Similar datasets:** AWI-001

**Limitations:** Please refer to the metadata that accompany each dataset within the repository.

**Maintenance frequency:** Data are updated in intervals that are uneven in duration.

**Main access/use constraint:** Creative Commons Attribution 3.0 Unported (CC BY 3.0). See http://creativecommons.org/licenses/by/3.0/ for details. Free to (1) copy/distribute/transmit the work, (2) adapt the work, and (3) make commercial use of the work.

**Other access/use constraints:**

**Contact organisation:** National Centre for Ecological Analysis and Synthesis, University of California

**Organisation type:** Custodian

**Acronym:** NCEAS

**Name:** --

**Position:** Help Desk

**City:** Santa Barbara

**Country:** California (USA)

**E-mail:** knb-help@nceas.ucsb.edu

**Web site:** https://www.nceas.ucsb.edu/

**Data format(s):** Online database

**Distribution format(s):** Online database

**Dataset size (uncompressed):** Various

**Webpage and/or download:** https://knb.ecoinformatics.org

**Other webpage:**
Dataset ID: NCEAS-004

Factsheet:

Resolution, scale: 
West bounding: 
South bounding: 
Metadata standard: UNEP-WCMC Specific

Reference system: Not applicable
East bounding: 
North bounding: 
Date of metadata: 17/08/2015
PANGAEA

Description: PANGAEA is a publisher and library for georeferenced data from earth system research. Observational and analytical data files are archived with a description (metadata) in a relational database. Its content is distributed via web services to portals, search engines and catalogs of libraries and publishers.

PANGAEA is hosted by the Alfred Wegener Institute, Helmholtz-Center for Polar and Marine Research (AWI), Bremerhaven and the Center for Marine Environmental Sciences (MARUM), Bremen, Germany.

Citation(s): It is not required to cite Pangaea when using data from the system. Always refer to data by using the data citation which accompanies each dataset.

If it is required to refer to Pangaea as publisher or library, the following citation could be used:
PANGAEA® - Data Publisher for Earth & Environmental Science.
doi:10.1594/PANGAEA. URL: http://www.pangaea.de/

Temporal range: Variable
Geographical range: Global
Supplementary information: Most of the data are freely available and can be used under the terms of the license mentioned on the data set description. A few password protected data sets are under moratorium from ongoing projects. The description of each data set is always visible and includes the principal investigator (PI) who may be asked for access. Each dataset can be identified, shared, published and cited by using a Digital Object Identifier (doi). Data are archived as supplements to publications or as citable data collections. Citations are available through the portal of the German National Library of Science and Technology (GetInfo).


The system is operated in the sense of the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities which is a follow up to the Budapest Open Access Initiative.
PANGAEA is a member of the ICSU World Data System. The policy of data management and archiving follows the ICSU World Data System Data Policy and the OECD Principles and Guidelines for Access to Research Data from Public Funding.

**Purpose of creation:** 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.

**Creation methodology:** See 'Purpose.'

**Version:** Updated regularly

**Data lineage:** PANGAEA is updated regularly as new datasets are published.

**Category:** Biodiversity-related data portal

**Keywords:** earth systems, environmental science, data, open source, atmospheric

**Similar datasets:** NCEAS-004

**Limitations:** PANGAEA is not responsible for the topicality, correctness, completeness or quality of the information provided. Liability claims regarding damage caused by the use of any information provided, including any kind of information which is incomplete or incorrect, will therefore be rejected. All offers are non-binding and without obligation. Parts of the content or the complete site including all offers and information might be extended or changed by the operating institutions without separate announcement.

**Maintenance frequency:** Data are updated in intervals that are uneven in duration.

**Main access/use constraint:** See 'Other access/use constraint(s).

**Other access/use constraints:** See 'Supplementary Information' box.

**Contact organisation:** Alfred Wegener Institute, Helmholtz Center for Polar and Marine Research

**Organisation type:** Resource provider

**Acronym:** AWI

**Name:**

**City:** Bremerhaven

**Country:** Germany

**E-mail:** https://www.pangaea.de/contact/

**Web site:** www.awi.de

**Data format(s):** Online database

**Distribution format(s):** Online database

**Dataset size (uncompressed):** Variable
**Dataset ID:** AWI-001  
**Webpage and/or download:** [http://www.pangaea.de](http://www.pangaea.de)  
**Other webpage:**  
**Web map service:**

### Factsheet:

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FishBase (www.fishbase.org) is a global species database of fish species (specifically finfish). It is the largest and most extensively accessed online database on adult finfish on the web.

To give due credit to the original authors, please cite data taken from FishBase by Main Ref. and/or Data Ref. of the respective record. Cite FishBase itself as:


As of April 2015, FishBase included descriptions of 32,900 species and subspecies, 304,500 common names in almost 300 languages, 55,300 pictures, and references to 51,600 works in the scientific literature.

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.
**Limitations:** FishBase present information on fishes as correctly as possible. However, FishBase can not exclude errors, and neither FishBase nor its partners can be held responsible for any damage that may arise from these.

**Maintenance frequency:** Data are updated a few times per year.

**Main access/use constraint:** Creative Commons Attribution-NonCommercial 3.0 Unported (CC BY-NC 3.0). See [http://creativecommons.org/licenses/by-nc/3.0/](http://creativecommons.org/licenses/by-nc/3.0/) for details. Free to (1) copy/distribute the work, and (2) adapt the work. The material may not be used for commercial purposes.

**Other access/use constraints:** You are welcome to include text, numbers and maps from FishBase in your own web sites for non-commercial use, given that such inserts are clearly identified as coming from FishBase, with a backward link to the respective source page. Photos and drawings belong to the indicated persons or organizations and have their own copyright statements. Photos and drawings with CC-BY or CC-BY-NC copyrights can be used without further permission, with full attribution to the person or organization and the indication ‘from FishBase’.

**Contact organisation:** FishBase Consortium

**Organisation type:** Custodian

**Acronym:**

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<th>Dr. Rainer Froese</th>
<th><strong>Position:</strong></th>
<th>FishBase Coordinator</th>
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**Webpage and/or download:** [http://www.fishbase.org](http://www.fishbase.org)

**Other webpage:**

**Web map service:**

**Factsheet:**

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Atlas of Global Conservation

Description: The Atlas of Global Conservation represents the result of an unprecedented effort by Nature Conservancy scientists, in collaboration with governments, scientists and conservation organisations around the world, offering over 80 global maps describing the state of terrestrial, freshwater, and marine habitats.


Temporal range: Variable
Geographical range: Global
Supplementary information: Purpose of creation: The Atlas of Global Conservation is intended to be a go-to resource for anyone interested in nature and conservation, highlighting where animal populations are concentrated, which species are in imminent danger of extinction, where forests are disappearing most rapidly, and where nature is thriving.

Creation methodology: To create the Atlas, a team of Nature Conservancy scientists asked researchers and conservationists around the globe to share their information. The team also consulted centuries-old archives, Google maps — even the Swedish army, which contributed an equation on how quickly humans move in natural areas. Ultimately, the Nature Conservancy collected and incorporated the work of some 70 institutions representing hundreds — possibly thousands — of scientists.

Version: 2014
Data lineage: This atlas supersedes a previous version, the 'Global Conservation Maps' (2012; http://maps.tnc.org/globalmaps/globalmaps_original.html).

Category: Biodiversity-related data portal
Keywords: conservation, global, GIS, maps, marine, terrestrial, freshwater, nature

Similar datasets:
Limitations: The Global Conservation Atlas is subject to the limitations of the included datasets. Please refer to the original sources for more information.

Maintenance frequency: Data are not being updated.

Main access/use constraint: Creative Commons Attribution-NonCommercial 3.0 Unported (CC BY-NC 3.0). See http://creativecommons.org/licenses/by-nc/3.0/ for details. Free to (1) copy/distribute the work, and (2) adapt the work. The material may not be used for commercial purposes.

Other access/use constraints: 

Contact organisation: The Nature Conservancy

Organisation type: Custodian

Acronym: TNC

Name: Dan Majka
City: --
E-mail: dmajka@tnc.org
Web site: http://maps.tnc.org/index.html

Data format(s): KML (.kml or .kmz), Tabular (.xls, .csv, or .tab), Vector (point; .shp), Vector (polygon; .shp)

Distribution format(s): KML (.kml or .kmz), Tabular (.xls, .csv, or .tab)

Dataset size (uncompressed): 

Webpage and/or download: http://maps.tnc.org/globalmaps.html

Other webpage: 

Web map service: 

Factsheet: 

Resolution, scale: -180.0
West bounding: -180.0
East bounding: 180.0
South bounding: -90.0
North bounding: 90.0
Metadata standard: UNEP-WCMC Specific
Date of metadata: 17/08/2015
Mediterranean Platform On Biodiversity

Description: The Mediterranean Biodiversity Platform is an online tool to inventory, catalog and store data on marine and coastal biodiversity in the Mediterranean, and view them on maps. This platform has been developed by the Specially Protected Areas Regional Activity Centre (SPA/RAC), within the MedKeyHabitats project, with a financial support of the MAVA Foundation.

Citation(s): If citing the platform:

Temporal range: Undefined
Geographical range: Mediterranean basin
Supplementary information: The online platform includes information on biodiversity, physical-chemical features, and responses.


Purpose of creation: Within the development of the Mediterranean Clearing-house Mechanism on marine and coastal biodiversity, SPA/RAC has launched within the framework of the Medkeyhabitats project the establishment of a Spatial Data Infrastructure (SDI) for its georeferenced data. The name given to this SDI is the Mediterranean Platform on Biodiversity (MPB).

According to the INSPIRE directive, the MPB provides 3 main services:
- Discovery (search and access information);
- View (display spatial datasets on an interactive map (WebGIS features));
- Download (public/authorised users, depending on Data Policy rules applicable to the specific dataset, are able to select and download numerical data or maps of interest).

Creation methodology: The visible part of the MPB is the Geoportal. It is a web portal used to find and access geospatial information and associated geographic services (display, editing, analysis, etc.). Geoportals are an effective tool to publish, share and disseminate the geographic data and a key element of Spatial Data Infrastructure (SDI).
The Geoportal deliver three main services.
- The first is the catalogue containing the metadata of the 150 layers already fed in the system. These layers are organised in three topics (i) biodiversity, (ii) physicalchemical features and (iii) responses. Each topic is broken down into several subtopics with relevance to marine and coastal biodiversity.
- The second service display eight thematic maps organised in different themes such as Mediterranean MPA and Specially Protected Areas of Mediterranean importance.
- The third service provided by the MPB is the possibility to create one’s own map. The user chooses from the catalogue which data wants to display in the map. The geoviewer offers multiple functionalities such as zoom, distance and areas measures, print, ……).

Version: Variable

Data lineage: SPA/RAC will work on the promotion of this tool by integrating layers and online services from other organisations, projects and Contracting Parties according to the scope and mission of SPA/RAC, the SPA/BD Protocol and the regional Action Plan for the conservation of threatened species, marine key habitats and invasive species.

SPA/RAC could also replicate this platform for the Contracting Parties as part of its assistance, providing the necessary capacity building. This depends on availability of budget. SPA/RAC will continue the development and improvement of this platform based on the feedback from Contracting Parties and the new needs that will emerge.

Category: Biodiversity-related data portal

Keywords: Mediterranean, European seas, biodiversity

Similar datasets: MSPplat-001; DGMARE-001; EMODnet-001; RAC-SPA-003

Limitations: Unknown.

Maintenance frequency: Data are updated in intervals that are uneven in duration.

Main access/use constraint: See 'Other access/use constraint(s)'.

Other access/use constraints: Access is constrained by user type, with different levels of restriction. Access falls under three categories: administrator; collaborator; and user. These levels are assigned by SPA/RAC.

The 'user' level is most restrictive, allowing basic roles to display and create maps from layers already available in the database.

Contact organisation: N Environment Mediterranean Action Plan - Regional Activity Centre for Specially Protected Areas

Organisation type: Resource provider

Acronym: UNEP-MAP RAC/SPA

Name: Tunis

Position: Country: Tunisia
**Dataset ID:** RAC-SPA-002  
**E-mail:** car-asp@rac-spa.org  
**Web site:** [www.rac-spa.org](http://www.rac-spa.org)  
**Data format(s):** Online maps  
**Distribution format(s):** Online maps  
**Dataset size (uncompressed):** Variable

**Webpage and/or download:** [http://data.medchm.net/en/catalogue](http://data.medchm.net/en/catalogue)  
**Other webpage:**  
**Web map service:**

**Factsheet:**  
**Resolution, scale:** Variable  
**West bounding:**  
**South bounding:**  
**Metadata standard:** UNEP-WCMC Specific  
**Reference system:** WGS 1984  
**East bounding:**  
**North bounding:**  
**Date of metadata:** 03/03/2019
**Mid-Atlantic Ocean Data Portal**

**Description:**
The Mid-Atlantic Ocean Data Portal is an online toolkit and resource center that consolidates available data and enables state, federal and local users to visualize and analyze ocean resources and human use information such as fishing grounds, recreational areas, shipping lanes, habitat areas, and energy sites, among others.

The Mid-Atlantic Regional Council on the Ocean (MARCO) recognizes that a robust ocean data and information management system that includes a wide range of human use, environmental, socioeconomic and regulatory data will provide the building blocks for multi-use, regional-scale ocean planning.

**Citation(s):**
To cite the Portal:

To cite the individual datasets:
Please refer to the corresponding metadata in the Data Catalog.

**Temporal range:** Undefined

**Geographical range:** Atlantic Basin

**Supplementary information:**
The Portal serves as a platform to engage all stakeholders in ocean planning from the five-state Mid-Atlantic region—putting all of the essential data and state-of-the-art mapping and visualization technology into the hands of the agencies, industry, and community leaders engaged in ocean planning. The Portal is maintained by a team consisting of the Monmouth University Urban Coast Institute, Ecotrust, The Nature Conservancy and Rutgers University’s Edward J. Bloustein School and Center for Remote Sensing and Spatial Analysis under the guidance of MARCO. It was developed with grant support from the Gordon and Betty Moore Foundation and the National Oceanic and Atmospheric Administration (NOAA).

Guidance on how to use MARCO's tools can be found here: http://portal.midatlanticocean.org/how-use-portal/learn-how-use-portals-tools/.

**Data featured on the site comes from a combination of sources, including key**
federal providers such as MarineCadastre.gov (a collaboration of NOAA and the Bureau of Ocean Energy Management), the Coast Guard, the U.S. Fish and Wildlife Service, the Department of Defense and the Environmental Protection Agency. Data has also been produced through partnerships with nonprofit organizations and the private sector, as well as through research projects led by Portal Team members. The Portal Team also is coordinating with the Mid-Atlantic Regional Association Coastal Ocean Observing System (MARACOOS), which provides real-time oceanography data via its OceansMap, to create maps at a time and scale appropriate for regional planning.

Information on the datasets that can be found through MARCO is available here: http://portal.midatlanticocean.org/data-catalog/.

Version: Variable
Data lineage: Updated as new data and information become available.
Category: Biodiversity-related data portal
Keywords: Mid-Atlantic, biodiversity, administrative boundaries, socio-economic activities, USA

Similar datasets:

Limitations: MARCO’s Ocean Mapping & Data Team (OMDT) will evaluate all data layers proposed for inclusion in the Mid-Atlantic Ocean Data Portal. To ensure the Mid-Atlantic Ocean Data Portal can serve as a trusted resource to support regional planning, the information presented must be of highest quality and reliability. All data must meet the criteria listed below which was developed by the Data Review Group (DRG), an interdisciplinary panel of managers and scientists. If the OMDT has questions as to the validity of including certain data layers, the data will be reviewed by the DRG.

Data are evaluated through a process that balances professional judgment and objective criteria (see link below). Candidate data must meet Criteria 1 and 2—regarding relevance for planning and methodological rigor—without exception. Criteria 3 and 4, regarding geographic extent and currency are important, but exceptions may be made when data are particularly relevant for planning but do not cover the entire region and/or are not the most recent available.

For more information on how data are selected for inclusion in the Portal, and specific data quality criteria, please visit: https://portal.midatlanticocean.org/documents/1/Spatial_Data_Evaluation_and_Criteria.pdf.

Maintenance frequency: Data are updated in intervals that are uneven in duration.
Main access/use constraint: See 'Other access/use constraint(s)'.
Other access/use constraints: Please refer to the metadata accompanying each dataset on the Portal to identify specific access use constraints.
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Integrated Biodiversity Assessment Tool (IBAT)

Description: The Integrated Biodiversity Assessment Tool (IBAT) is an innovative suite of tools developed to assist in the delivery of a range of biodiversity related data layers to support various business, governmental intergovernmental and non-governmental processes. The IBAT project is the result of a ground-breaking partnership between BirdLife International, Conservation International, the International Union for the Conservation of Nature (IUCN) and UNEP World Conservation Monitoring Centre (UNEP-WCMC), who have come together to form the IBAT Alliance.

There are two IBAT platforms available to users: (1) IBAT for Research and Conservation Planning, and (2) IBAT for Business.

Citation(s):

When accessing data from IBAT, please use the following citation formats:

BirdLife International, Conservation International, IUCN, UNEP-WCMC [Date accessed]. Protected Area and Key Biodiversity Area data downloaded from the Integrated Biodiversity Assessment Tool (IBAT) for Business. URL: https://www.ibatforbusiness.org

Temporal range: Variable
Geographical range: Global
Supplementary information: The core datasets integrated via IBAT currently include:
- World Database of Protected Areas (WDPA)
- Key Biodiversity Areas (KBAs)
- Alliance for Zero Extinction (AZE)
- IUCN Red List of Threatened Species
- Broad-scale conservation priorities: Biodiversity Hotspots, Endemic Bird Areas and High Biodiversity Wilderness Areas
For additional information, please refer to the metadata that accompany each dataset within the repository.

**Purpose of creation:**

IBAT for Research and Conservation Planning facilitates access to information about high priority sites for conservation – namely protected areas and key biodiversity areas. One of the primary users for this tool is government staff who are responsible for developing biodiversity strategies and planning documents as well as reporting on conservation implementation, using a broad range of data and indicators such as national coverage of protected areas. Many national governments will find this website useful for planning their conservation actions and priorities, for example, when undertaking gap analyses. In particular, a section on National Biodiversity Strategy Action Planning has been included to assist users who are responsible for reporting on their commitments to the Convention on Biological Diversity.

IBAT for Research and Conservation Planning provides integrated information at the site scale – at the level of individual parks, concessions or other fine-scale management units, and information on globally threatened species. IBAT allows users to explore supporting information behind these data, and helps users understand the extent of data quality and coverage. IBAT also situates this data within the wider context by including information on broad-scale global conservation priorities.

IBAT for Business aids users to:
- Identify areas recognised as critical habitat (for example, following IFC’s Performance Standard 6) and categorise projects accurately according to their environmental risk.
- Maintain a catalogue of sites and quickly compile portfolio level information on environmental indicators to feed into sustainability reporting frameworks such as GRI.
- Access on-line maps and toolkits tailored to business needs, offering unprecedented information on protected areas, the location and importance of priority sites for conservation (key biodiversity areas) and threatened species.

**Creation methodology:**

**Version:**

**Data lineage:**

**Category:** Biodiversity-related data portal

**Keywords:** IBAT, biodiversity, conservation, KBA, IBA, AZE, IUCN Red List

**Similar datasets:**

**Limitations:** Please refer to the metadata that accompany each dataset within the repository.

The IBAT Alliance endeavours to maintain accurate and up-to-date data in the IBAT. In order to assist in that endeavour, users are requested to provide feedback on the quality, reliability and accuracy of the Information. To improve the IBAT, the IBAT Alliance welcomes revised information in the form of GIS data, electronic images, paper maps, tables, GPS coordinates, and/or in any other useable format submitted.
to ibat@birdlife.org. Such contributions must be free of restrictions to achieve IBAT’s purpose; as such, by making such contributions, users hereby grant to the IBAT Alliance a perpetual, world-wide, irrevocable, royalty free license to use, modify, distribute and publish such contributions in any format or medium. Further, by making such contributions users represent and warrant that users own all necessary rights and/or permission to make such contributions available under the aforementioned license. The IBAT Alliance shall have the right, but no obligation, to incorporate such contributions into IBAT.

Unless required to do so for specific analyses, users should not use any version of the Information and derivatives after they have been superseded by subsequent versions. It is the responsibility of the user to check if an update of the Information or derivatives is available and to use the latest version.

Maintenance frequency: Data are repeatedly and frequently updated.

Main access/use constraint: For details regarding IBAT for Research and Conservation Planning Terms of Use, please visit: https://www.ibat-alliance.org/ibat-conservation/terms_of_use. For IBAT for Business Terms of Use, please visit: https://www.ibatforbusiness.org/termsofuse.

Other access/use constraints: The IBAT Alliance require a copy of all published materials that include the Information to be lodged with them free of charge within one month of publication preferably in electronic format via ibat@birdlife.org.

IBAT for Research and Conservation Planning is freely available for non-commercial use by governments, researchers and conservation practitioners, to support decision-making in conservation and development.

IBAT for Business is available via subscription to corporates and consultancies, to inform business decision-making.

Contact organisation: Integrated Biodiversity Assessment Tool

Organisation type: Custodian

Name: IBAT Programme Director

City: Country: E-mail: Web site: https://www.ibat-alliance.org/ibat-conservation/login

Data format(s): Online database, Online maps, Vector (point; .shp), Vector (polygon; .shp)

Distribution format(s): Online database, Online maps, Vector (point; .shp), Vector (polygon; .shp)

Dataset size (uncompressed):

Webpage and/or download: https://www.ibat-alliance.org/ibat-conservation/login

Other webpage: https://www.ibatforbusiness.org/
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Catalogue Of Life (CoL)

Catalogue of Life: 30th July 2015

The Catalogue of Life (http://www.catalogueoflife.org/col/) is the most comprehensive and authoritative global index of species currently available. It consists of a single integrated species checklist and taxonomic hierarchy. The Catalogue holds essential information on the names, relationships and distributions of over 1.6 million species. This figure continues to rise as information is compiled from diverse sources around the world.

Citation(s):

How to cite the Catalogue of Life monthly edition on the Web:

How to cite the Annual Checklist on DVD:

How to cite the Annual Checklist on the web:

For citing individual databases, please refer to the following webpage:
http://www.catalogueoflife.org/col/info/cite.

Temporal range: Global
Geographical range: Global
Supplementary information: The Dynamic Edition is a constantly evolving version of the Catalogue of Life. Anything can change as the list develops: names, their associated details, and their content providers and there is no tracking of those changes. For that reason, the Dynamic Edition is not the one to quote if you wish to cite a verifiable source. It is, however, a great 'expert system', helping those at the forefront of their science to
track, and contribute to the development of taxonomy. Periodic issues are progressively enhanced, in what will evolve as a dynamically developing system, made available online and as web-services.

The Annual Checklist is a snapshot of the entire Catalogue of Life: a fixed imprint. If you quote an organism from this version, others will be able to turn to that same reference - at any point in the future. All editions of the Annual Checklist to date are available online, and deposited in libraries around the world. Partner programmes, that link online to the Catalogue of Life, will reference the Annual Checklist.

The Catalogue of Life is used to support the major biodiversity and conservation information services such as the Global Biodiversity Information Facility (GBIF), Encyclopedia of Life (EoL) and the International Union for Conservation of Nature Red List. It is recognised by the Convention on Biological Diversity as a significant component of the Global Taxonomy Initiative and a contribution to Target 1 of the Global Strategy for Plant Conservation.

The Catalogue of Life is widely used by organisations and individuals worldwide. Research scientists, policy and decision makers, citizen scientists and other global biodiversity programmes use it to:
- Check the scientifically accepted name, spelling, alternative names and distribution of a species;
- Find the place of an organism in a consistent and integrated taxonomic hierarchy;
- Compile checklists of species in a particular area or taxonomic group using downloads;
- Download an electronic list for use in systems and portals;
- Provide an electronic taxonomic backbone for indexing and compiling other information; and
- Carry out biodiversity analyses.

The content of the Catalogue of Life is supplied by an array of over 100 expert taxonomic databases world-wide with contributions from over 3,000 taxonomic specialists. The key features that define the structure and the success of the Catalogue of Life are the:
- Species Checklist which identifies those names which are accepted by authoritative specialists in the groups concerned.
- Management Classification providing an integrated, hierarchical view of relationships between taxa. Users of the Catalogue can navigate the checklist using the management classification in the form of a taxonomic tree.
- Integration of Global Species Databases employing a radical architecture of federating global taxonomic expert knowledge, which is embodied by a growing array of supplier databases, and integrating these into a single catalogue.

The Catalogue of Life provides critical species information on:
- Synonymy enabling the effective referral of alternative species names to an accepted name.
- Higher taxa within which a species is clustered.
- Distribution identifying the global regions from which a species is known.
Dataset ID: CoL-001
Version:
Data lineage:
Category: Taxonomic database
Keywords: taxonomy, global, database
Similar datasets: SLBase-001, FishBase-001, GBIF-001, OBIS-003, EoL-001
Limitations: Global Species Databases are validated for inclusion by independent peer review, ensuring that the best available sources are identified. A few of the datasets contain data only for specific regions, where global coverage has not yet been achieved: these are clearly identified in the data. Completeness of data within individual databases is indicated within the dataset, based upon an assessment by the contributor.

The Catalogue of Life has also recently introduced Dataset Qualifiers which give users a quick guide to the reliability of presented data. Qualifiers have been given by authors/editors of each database and appear on the Database Details page, and also, alongside the database name on each Species Details page. Please note qualifiers reflect data reliability in the Catalogue of Life only, and are not applicable to the original source database if viewed through its own website. Dataset Qualifiers when missing show that they are yet to be implemented by the source database.

The Species 2000 & ITIS (Taxonomic Information System) Catalogue of Life editorial board cannot guarantee the accuracy or completeness of the information in this edition. Be aware that the Catalogue of Life is still incomplete and undoubtedly contains errors. Neither Species 2000 & ITIS nor any contributing database can be made liable for any direct or indirect damage arising out of the use of Catalogue of Life.

Maintenance frequency: Data are updated on a monthly basis.
Main access/use constraint: For details regarding requirements for use of the Catalog of Life, please visit:
http://www.catalogueoflife.org/col/info/copyright.
Other access/use constraints:
Contact organisation: Species 2000 Secretariat, Naturalis Biodiversity Center
Organisation type: Custodian
Acronym: --
Name: --
Position: Help Desk
City: Leiden
Country: Netherlands
E-mail: support@sp2000.org
Web site: www.sp2000.org
Data format(s): Online database
Dataset ID: CoL-001

Distribution format(s): Online database

Dataset size (uncompressed):

Webpage and/or download:
http://www.catalogueoflife.org

Other webpage:

Web map service:

Factsheet:

Resolution, scale: Not applicable

Reference system: Not applicable

West bounding:

East bounding:

South bounding:

North bounding:

Metadata standard: UNEP-WCMC Specific

Date of metadata: 13/08/2015
World Register of Marine Species (WoRMS)

The World Register of Marine Species (WoRMS) is a global database that aims to provide an authoritative and comprehensive list of marine organisms. As of June 2015, WoRMS contained listings for 229,567 valid marine species, of which 220,721 (96%) had been checked.

WoRMS also includes the World Register of Deep-Sea Species (WoRDSS; http://www.marinespecies.org/deepsea/), which is a taxonomic database of deep-sea species based on the World Register of Marine Species (WoRMS). This site was launched in December 2012 as a project of the International Network for Scientific Investigation of Deep-sea Ecosystems (INDEEP).

Citation(s):

Temporal range: Unknown
Geographical range: Global

The aim is to provide an authoritative and comprehensive list of names of marine organisms, including information on synonymy. While highest priority goes to valid names, other names in use are included so that this register can serve as a guide to interpret taxonomic literature.

Creation methodology:
This register of marine species grew out of the European Register of Marine Species (ERMS), and its combination with several other species registers maintained at the Flanders Marine Institute (VLIZ). Rather than building separate registers for all projects, and to make sure taxonomy used in these different projects is consistent, VLIZ developed a consolidated database called ‘Aphia’. A list of marine species registers included in Aphia is available below. MarineSpecies.org is the web interface for this database. The WoRMS is an idea that is being developed, and will combine information from Aphia with other authoritative marine species lists which are maintained by others (e.g. AlgaeBase, FishBase, Hexacorallia).

Resources to build MarineSpecies.org and Aphia were provided mainly by the EU Network of Excellence ‘Marine Biodiversity and Ecosystem Functioning’ (MarBEF),
and also by the EU funded Species 2000 Europe and ERMS projects.

Aphia contains valid species names, synonyms and vernacular names, and extra information such as literature and biogeographic data. Besides species names, Aphia also contains the higher classification in which each scientific name is linked to its parent taxon. The classification used is a ‘compromise’ between established systems and recent changes. Its aim is to aid data management, rather than suggest any taxonomic or phylogenetic opinion on species relationships.

Version:

Data lineage: Keeping WoRMS up-to-date is a continuous process. New information is entered daily by the taxonomic editors and by the members of our data management team.

Category: Taxonomic database

Keywords: taxonomy, marine species, WoRMS, phylogeny

Similar datasets: VLIZ-008, CoL-001

Limitations: The content of WoRMS is controlled by taxonomic experts, not by database managers. WoRMS has an editorial management system where each taxonomic group is represented by an expert who has the authority over the content, and is responsible for controlling the quality of the information. Each of these main taxonomic editors can invite several specialists of smaller groups within their area of responsibility to join them.

Maintenance frequency: Data are updated each day.

Main access/use constraint: Creative Commons Attribution 3.0 Unported (CC BY 3.0). See http://creativecommons.org/licenses/by/3.0/ for details. Free to (1) copy/distribute/transmit the work, (2) adapt the work, and (3) make commercial use of the work.

Other access/use constraints: CC-BY-3.0, but redistribution is not permitted.

Contact organisation: Flanders Marine Institute

Organisation type: Custodian

Acronym: VLIZ

Name: Simon Claus
City: Ostend
E-mail: info@marineregions.org
Web site: www.marineregions.org
Data format(s): Access database (.accdb), Online database, Web map service
Distribution format(s): Access database (.accdb), Online database, Web map service

Dataset size (uncompressed): Not reported

Webpage and/or download: http://www.marineregions.org/

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Encyclopedia of Life (EoL)

Description: Encyclopedia of Life’s Open Data Platform serves data to users who prefer downloadable files. Various categories of datasets are present, from source files provided by our data partners, to aggregate files of all available data for certain traits. Most of the data you will find here is in modified DarwinCore Archive or CSV format. We are still populating the platform with frequently used datasets from the open data holdings of EOL. New files will appear over time.


To cite data downloaded from EOL: If you use EOL as a data source for a scientific paper, please be sure to cite the original source of the data and any references that are provided to support individual values. For most data records, citations and references will be included in the data download file, or you can access them along with other metadata by clicking on the data record in the Data tab of the EOL taxon page.

For further information, please visit: https://eol.org/docs/what-is-eol/terms-of-use/citing-eol-and-eol-content.

Temporal range: Unknown
Geographical range: Global
Supplementary information: Purpose of creation: Our knowledge of the many life-forms on Earth - of animals, plants, fungi, protists and bacteria - is scattered around the world in books, journals, databases, websites, specimen collections, and in the minds of people everywhere. Imagine what it would mean if this information could be gathered together and made available to everyone – anywhere – at a moment’s notice. This dream is becoming a reality through the Encyclopedia of Life.

Our Vision: Global access to knowledge about life on Earth.

Our Mission: To increase awareness and understanding of living nature through an Encyclopedia of Life that gathers, generates, and shares knowledge in an open, freely accessible and trusted digital resource.

Creation methodology:
- identifying sources of biodiversity knowledge that are legally and practically shareable enriching their structure using modern data tools in order to integrate them with other knowledge aggregating them into a combined knowledge base;
- providing access to the knowledge at a granular level using faceted search tools and data services in commonly used formats;
- collaborating with data hubs worldwide to support interoperability and sharing.

Version: 3.0

Data lineage: The Encyclopedia of Life (EOL) version 3 contains the same sort of biodiversity information we hosted in the previous version, but the web platform and data services it is built on have been almost entirely reengineered and updated to modern standards. Users of the previous site will notice major differences in how the site looks and how you use it. But one thing hasn’t changed - we’re as committed as ever to working with our partners to gather, curate and share knowledge about life on Earth.

Category: Taxonomic database

Keywords: Taxonomy, global, biogeography

Similar datasets: SLBase-001, FishBase-001, GBIF-001, OBIS-003, CoL-001

Limitations: Not reported.

Maintenance frequency: Data are repeatedly and frequently updated.

Main access/use constraint: See 'Other access/use constraint(s)'.

Other access/use constraints: Ownership of any copyrightable content on EOL rests with the content partner, and detailed attribution and license information (where applicable) is always available. Please see our Terms of Use and API Terms of Use for more details about re-use of content hosted by EOL.

For the Encyclopedia of Life's full 'terms of use', please visit: https://eol.org/docs/what-is-eol/terms-of-use.
<table>
<thead>
<tr>
<th>Dataset ID: EoL-001</th>
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<td>Contact organisation:</td>
</tr>
<tr>
<td>Organisation type:</td>
</tr>
<tr>
<td>Acronym:</td>
</tr>
</tbody>
</table>

| Name: | Cynthia Parr |
| City: | |
| E-mail: | secretariat@eol.org |
| Web site: | [http://www.eol.org/info/feb_10](http://www.eol.org/info/feb_10) |
| Data format(s): | Online database, Online maps |
| Distribution format(s): | Tabular (.xls, .csv, or .tab) |
| Dataset size (uncompressed): | Variable |

| Webpage and/or download: | [http://eol.org/](http://eol.org/) |
| Other webpage: | [https://opendata.eol.org/](https://opendata.eol.org/) |
| Web map service: | |
| Factsheet: | |
| Resolution, scale: | Not applicable |
| West bounding: | -180.0 |
| South bounding: | -90.0 |
| Metadata standard: | UNEP-WCMC Specific |
| East bounding: | 180.0 |
| North bounding: | 90.0 |
| Date of metadata: | 03/03/2019 |

SeaLifeBase

Description: SeaLifeBase is a global online database of information about marine life. It aims to provide key information on the taxonomy, distribution and ecology of all marine species in the world apart from finfish.

SeaLifeBase is a joint project of the Sea Around Us (University of British Columbia, Vancouver, Canada) and The FishBase Information and Research Group, Inc (FIN, Los Baños, Philippines), and is endorsed and monitored by the FishBase Consortium. SeaLifeBase is in partnership with the WorldFish Center in Malaysia and the UBC Fisheries Centre at the University of British Columbia.

Citation(s): To give due credit to the original authors, please cite data taken from SeaLifeBase by Main Ref. and/or Data Ref. of the respective record.

Cite SeaLifeBase itself as:

Temporal range: Variable
Geographical range: Global
Supplementary information: Types of information encoded include scientifically-accepted names and synonyms, distribution by country (by EEZ), distribution by FAO area, and published references used (all mandatory). Other data actively searched for include: common names in English and other languages; distributions by provinces/states, ecosystems, and depth; abundances; maximum length and weight; trophic ecology; habitats; introduction and invasion; growth parameters and length-weight relationships; reproduction; IUCN and CITES statuses; and photos.

Purpose of creation: 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. It will not provide yet another authority list of species, but rather, for each species included, make available the biological and ecological information necessary to conduct biodiversity and ecosystem studies, taking advantage of lists of species already available on paper and electronically, and using the scientific names as ‘hook’ to organize biodiversity information.
SeaLifeBase uses the taxonomic structure of the Catalogue of Life, which is itself enhanced by expert-reviewed taxonomic data of the World Register of Marine Species. These two global catalogues are the source of 56% of the nearly 129,934 scientific names of metazoan species in SeaLifeBase, including information necessary for the management of commercially important non-fish metazoans. For example, data on algae enhanced by taxonomic data from AlgaeBase increased SeaLifeBase’s nominal species to over 105,000 (50% of which contain data on distribution, ecology and species specific life histories).

For additional information regarding methodology, please visit http://www.sealifebase.org/home/what_we_do.php.

Version: 04/2015
Data lineage: New information is entered regularly.
Category: Taxonomic database
Keywords: taxonomy, invertebrates, vegetation, marine, coastal, Sea Around Us, FishBase, SeaLifeBase

Similar datasets: FishBase-001, OBIS-003, CoL-001

Limitations: Subspecies are not taken into account, but are included in a comment field. Priorities for data encoding are informed by the short- and long-term objectives for SeaLifeBase. Information regarding habitats, maximum size, and growth parameters is often difficult to obtain. Full details are available from http://www.sealifebase.org/home/what_we_do.php.

Maintenance frequency: Data are repeatedly and frequently updated.

Main access/use constraint: Creative Commons Attribution-NonCommercial 3.0 Unported (CC BY-NC 3.0). See http://creativecommons.org/licenses/by-nc/3.0/ for details. Free to (1) copy/distribute the work, and (2) adapt the work. The material may not be used for commercial purposes.

Other access/use constraints: You are welcome to include text, numbers and maps from SeaLifeBase in your own web sites for non-commercial use, given that such inserts are clearly identified as coming from SeaLifeBase, with a backward link to the respective source page. Photos and drawings belong to the indicated persons or organizations and have their own copyright statements. Photos and drawings with CC-BY or CC-BY-NC copyrights can be used without further permission, with full attribution to the person or organization and the indication 'from SeaLifeBase'.

Contact organisation: Sea Around Us, University of British Columbia

Organisation type: Custodian
Acronym: UBC
Name: Dr. Maria L. D. Palomares
Position: SeaLifeBase Project Coordinator
City: Vancouver
Country: Canada
E-mail: m.palomares@fisheries.ubc.ca
Dataset ID: SLBase-001

Web site:  http://www.sealifebase.org
Data format(s):  Online database
Distribution format(s):  Online database

Webpage and/or download:  http://www.sealifebase.org
Other webpage:
Web map service:

Factsheet:
Resolution, scale:  Not applicable
West bounding:
South bounding:
Metadata standard:  UNEP-WCMC Specific

Reference system:  Not applicable
East bounding:
North bounding:
Date of metadata:  09/11/2016

Dataset size (uncompressed):
Natural Earth

Description: Natural Earth is a public domain map dataset available at 1:10m, 1:50m, and 1:110 million scales. Featuring tightly integrated vector and raster data, with Natural Earth you can make a variety of visually pleasing, well-crafted maps with cartography or GIS software.

Citation(s): No permission is needed to use Natural Earth. Crediting the authors is unnecessary. However, if you wish to cite the map data, simply use one of the following.

Short text: Made with Natural Earth (www.naturalearthdata.com).

Long text: Made with Natural Earth. Free vector and raster map data @ naturalearthdata.com.

Temporal range: Not applicable

Geographical range: Global

Supplementary information:

- Vector features include name attributes and bounding box extent. Know that the Rocky Mountains are larger than the Ozarks.
- Large polygons are split for more efficient data handling—such as bathymetric layers.
- Projection friendly—vectors precisely match at 180 degrees longitude. Lines contain enough data points for smooth bending in conic projections, but not so many that computer processing speed suffers.
- Raster data includes grayscale-shaded relief and cross-blended hypsometric tints derived from the latest NASA SRTM Plus elevation data and tailored to register with Natural Earth Vector.
- Optimized for use in web mapping applications, such as Google or Yahoo, with built-in scale attributes to direct features to be shown at different zoom levels.

Purpose of creation: Natural Earth solves a problem: finding suitable data for making small-scale maps. In a time when the web is awash in geospatial data, cartographers are forced to waste time sifting through confusing tangles of poorly attributed data to make clean, legible maps. Because your time is valuable, Natural Earth data comes ready-to-use.
The carefully generalized linework maintains consistent, recognizable geographic shapes at 1:10m, 1:50m, and 1:110m scales. Natural Earth was built from the ground up so you will find that all data layers align precisely with one another. For example, where rivers and country borders are one and the same, the lines are coincident.

Natural Earth, however, is more than just a collection of pretty lines. The data attributes are equally important for mapmaking. Most data contain embedded feature names, which are ranked by relative importance. Other attributes facilitate faster map production, such as width attributes assigned to river segments for creating tapers.

Creation methodology: Natural Earth was built through a collaboration of many volunteers and is supported by NACIS (North American Cartographic Information Society), and is free for use in any type of project (see our Terms of Use page for more information).

Version: Variable

Data lineage: New versions of each component dataset are released on a regular basis. Older versions are accessible from the website.

Category: Administration

Keywords: Basemap, shaded relief, administrative boundaries, global

Similar datasets: None

Limitations: The world doesn’t stop changing and, with any project as complex as this, flaws and omissions are bound to emerge, requiring our attention. The Map Update Committee coordinates this activity and is the final arbitrator on map features, data creation, and data attributes.

The authors provide Natural Earth as a public service and are not responsible for any problems relating to accuracy, content, design, and how it is used. If you find an error or omission, please report it for future updates: https://www.naturalearthdata.com/corrections/.

Data submissions must comply with the following data creation guidelines: https://www.naturalearthdata.com/about/data-creation/.

Maintenance frequency: Data are updated in intervals that are uneven in duration.

Main access/use constraint: See 'Other access/use constraint(s)'.

Other access/use constraints: All versions of Natural Earth raster + vector map data found on this website are in the public domain. You may use the maps in any manner, including modifying the content and design, electronic dissemination, and offset printing. The primary authors, Tom Patterson and Nathaniel Vaughn Kelso, and all other contributors renounce all financial claim to the maps and invites you to use them for personal, educational, and commercial purposes.
For full terms and conditions, please visit: https://www.naturalearthdata.com/about/terms-of-use/

Contact organisation: Natural Earth

Organisation type: Resource provider

Name: Nathaniel Vaughn Kelso
City: 
E-mail: nathaniel@naturalearthdata.com
Web site: http://www.naturalearthdata.com/about/contact-us/

Data format(s): Vector (point; .shp), Vector (polygon; .shp), Vector (polyline; .shp)

Distribution format(s): Map package (ESRI, .mpk),

Dataset size (uncompressed): Variable

Webpage and/or download: http://www.naturalearthdata.com/

Web map service: 

Factsheet:

Resolution, scale: 1:10m; 1:50m; 1:110m
West bounding: -180.0
South bounding: -90.0

Metadata standard: UNEP-WCMC Specific

Reference system: Not applicable
East bounding: 180.0
North bounding: 90.0

Date of metadata: 03/03/2019
Global Self-consistent, Hierarchical, High-resolution Geography Database

Description: The Global Self-consistent, Hierarchical, High-resolution Geography Database (GSHHGD) is a high-resolution geography dataset, amalgamated from two databases in the public domain: World Vector Shorelines (WVS; http://shoreline.noaa.gov/data/datasheets/wvs.html) and CIA World Data Bank II (WDBII; http://www.evl.uic.edu/pape/data/WDB/). The former is the basis for shorelines while the latter is the basis for lakes, although there are instances where differences in coastline representations necessitated adding WDBII islands to GSHHG. The WDBII source also provides all political borders and rivers.

Citation(s): Wessel P, Smith WHF (2015). Data layers of the Global, Self-consistent, Hierarchical, High-resolution Shoreline Geography (GSHHG) database (version 2.3.4). The methodology used to create the shoreline subset is described in Wessel and Smith (1996). Manoa (Hawaii, USA): University of Hawaii (SOEST). URL: www.ngdc.noaa.gov/mgg/shorelines/data/gshhg/latest/


Temporal range: Not applicable
Geographical range: Global
Supplementary information: The geography data come in five resolutions: (f) full resolution - original data resolution; (h) high resolution - about 80% reduction in size and quality; (i) intermediate resolution - another ~80% reduction; (l) low resolution - another ~80% reduction; (c) crude resolution - another ~80% reduction.

Shorelines are furthermore organized into four hierarchical levels: (L1) boundary between land and ocean; (L2) boundary between lake and land; (L3) boundary between island-in-lake and lake; (L4) boundary between pond-in-island and island.

The dataset can be accessed using the URLs given above and below, as well as from the National Geophysical Data Center (NGDC; http://www.ngdc.noaa.gov/mgg/shorelines/).

Purpose of creation: The shoreline polygon data can be used to simplify data searches and data selections, to study the statistical characteristics of shorelines and land-masses, or...
Creation methodology:

GSHHS: the ocean-land shorelines was derived from WVS (World Vector Shoreline project (Soluri and Woodson 1990), while the polygons for lakes, islands-in-lakes, and ponds-in-lakes were derived from WDI (Gorny 1977), which is a much older and lower-quality data product. The compilation combined these data into a self-consistent product (see Wessel and Smith 1996) for processing details. Over the years, new data were manually added in areas that were poorly represented in the original dataset; however, upon zooming in closely, old data may in places be mis-registered relative to recent data such as used in Google Earth. The shorelines are constructed entirely from hierarchically arranged closed polygons.


WDBII: CIA World Data Bank II lineaments for borders and river. Over the years, political boundaries have changed and these have been updated to reflect realities based on feedback from users.

Version:

2.3.4 (March 2015)

Data lineage:

For more recent versions, see http://www.soest.hawaii.edu/pwessel/gshhg/.

GSHHG used to be called GSHHS (Global Self-consistent, Hierarchical, High-resolution Shorelines) but since rivers and political boundaries were also included, it was changed to GSHHG starting with version 2.2.1.

The dataset is distributed with a text file listing version-specific comments.

Category:

Administration

Keywords:

coastal, shoreline, administrative boundaries, maritime

Similar datasets:

Global Administration areas database - GADM; Global Maritime Boundaries Database - GMBD

Limitations:

GSHHG data have undergone extensive processing and should be free of internal inconsistencies such as erratic points and crossing segments. In the vector (polygon) format, a handful of polygons straddling the 'dateline' (chief among them the Antarctic polar cap polygon) have been split into east and west components. In the native binary format, no polygon dateline-splitting has occurred. The creators discourage anyone from using the netCDF version for custom programming applications [due to complexity and lack of documentation, mostly].

Maintenance frequency:

Data are updated a few times per year.

Main access/use constraint:

GNU Lesser General Public License (as of version 2.2.2). See www.gnu.org/licenses/lgpl.html. For commercial use, see www.gnu.org/licenses/gpl-faq.html#GPLCommercially.
Other access/use constraints: Please notify Dr. Paul Wessel (pwessel@hawaii.edu) and Dr. Walter H.F. Smith (Walter.HF.Smith@noaa.gov) if any changes are made to the GSHHG dataset for commercial use.

Contact organisation: School of Ocean and Earth Science and Technology, University of Hawaii

Organisation type: Owner  Acronym: SOEST

Name: Dr. Paul Wessel  Position: University Lecturer
City: Manoa  Country: Hawaii, USA
E-mail: pwessel@hawaii.edu
Web site: www.soest.hawaii.edu
Data format(s): Network Common Data Form (NetCDF3 or 4), Vector (polygon; .shp)
Distribution format(s): Network Common Data Form (NetCDF3 or 4), Vector (polygon; .shp)

Dataset size (uncompressed): 424 Mb (vector)

Webpage and/or download: http://www.soest.hawaii.edu/pwessel/gshhg

Other webpage: http://www.ngdc.noaa.gov/mgg/shorelines/gshhs.html

Web map service:

Factsheet:
Resolution, scale: Not applicable  Reference system: WGS 1984
West bounding: -180.0  East bounding: 180.0
South bounding: -90.0  North bounding: 83.6
Metadata standard: UNEP-WCMC Specific  Date of metadata: 29/06/2015

Description: This dataset shows the 66 international waters and 9 regions defined by the Global International Waters Assessment (GIWA). GIWA is a water programme led by the United Nations Environment Programme (UNEP). The objective of GIWA is to produce a comprehensive and integrated global assessment of international waters. It is to be a systematic assessment of the environmental conditions and problems in international waters, comprising marine, coastal and freshwater areas, and surface waters as well as ground waters.


Temporal range: Not applicable
Geographical range: Global
Supplementary information: Attribute table: international water code (giwacode); region code (first_mega).
Purpose of creation: This dataset was developed to be used in the GIWA programme, and was published in UNEP (2003a).

Creation methodology: The dataset is based on the regions defined by GIWA. Refer to UNEP (2003a) for further details.

Version: Data lineage: Category: Administration
Keywords: marine, coastal

Similar datasets: None
The dataset only gives rough indications of the geographic location of the 66 water regions. It contains no information on drainage areas, and is thus not to be viewed as more than a simple geographic guide.

Data are not being updated.

Please contact dewainfo@unep.org.

Division of Early Warning and Assessment, United Nations Environment Programme

Owner

Fatoumata Keita-Ouane

Nairobi

dewainfo@unep.org

www.unep.org/DEWA

Vector (polygon; .shp)

840 Kb

http://www.unep.org/dewa/giwa/

http://www.unep.org/dewa/giwa/areas/giwamap.asp

WGS 1984

Not applicable

-180.0

-89.3

UNEP-WCMC Specific

29/05/2015
Global Distribution of Islands "IBPoW" (2010)

Description: The dataset shows the global distribution of islands greater than about 0.06 sq-km. The information given here relates to version 1 of the dataset. This dataset, also known as the IBPow (Island Biodiversity Programme of Work) database, has been developed in collaboration with the Institut de recherche pour le développement (IRD, Christian Depraetere) since 2005. The International Environmental Forum (IEF), under the leadership of Arthur Dahl, was a major contributor at the initial stages of development.


Temporal range: 2010

Geographical range: Global

Supplementary information: Discussions are on-going with data providers to make the dataset available for download.

Fields of the attribute table: see file called "WCMC-005-GID1-2010-IBPoW-AttributeTableFields.pdf".

The database used to contain a wealth of biodiversity data, but these are no longer maintained and are not distributed.

Purpose of creation: The dataset was developed as part of Phase 1 of the Global Island Database (GID) project (http://gid.unep-wcmc.org).

Creation methodology: The shapefile is based on the GSHHS Database (Global, Self-consistent, Hierarchical,
High-resolution Shoreline Database; version 1; Wessel and Smith, 1996). Global Islands Network (GIN) Directors, Dr Arthur Lyon Dahl and Dr Christian Depraetere, provided their two different datasets with complementary information on 70,000 islands. UNEP World Conservation Monitoring Centre (UNEP-WCMC) then added 37 other spatial datasets, including one on invasive species in the Pacific Islands developed by IUCN/Species Survival Commission (Invasive Species Specialist Group) and the Pacific Island Ecosystems at Risk project.

Version: 1.0

Data lineage: This dataset has been superseded by version 2 (WCMC-031), which is based on a higher resolution dataset from Open Street Map. Versions 1 (dataset ID WCMC-005) and 2 (dataset ID WCMC-031) of the dataset can be joined using the id_ic field.

Category: Administration

Keywords: coastal

Similar datasets: WCMC-031

Limitations: A number of existing islands are missing from the underlying geographical dataset. Not all islands listed have an associated name. The field names in the dataset do not exactly match those in the associated technical documentation.

The boundaries, names and designations used in this dataset do not imply official endorsement nor acceptance by the United Nations and contributory organisations.

Maintenance frequency: Data are not being updated.


Other access/use constraints: Interested users should contact marine@unep-wcmc.org.

Contact organisation: UN Environment World Conservation Monitoring Centre

Organisation type: Custodian

Acronym: UNEP-WCMC

Name: Lauren Weatherdon

Position: Senior Programme Officer

City: Cambridge

Country: United Kingdom

E-mail: lauren.weatherdon@unep-wcmc.org

Web site: www.unep-wcmc.org

Data format(s): Vector (point; .shp), Vector (polygon; .shp)

Distribution format(s): Vector (point; .shp), Vector (polygon; .shp)

Dataset size (uncompressed): 287 Mb
Dataset ID: WCMC-005

Webpage and/or download: [See metadata](http://wcmc.io/MarineDataManual)

Other webpage:

Web map service:

Factsheet:

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Description: The Global Marine Aquarium Database (GMAD) was set up in 2000 as a collaborative project between UNEP World Conservation Monitoring Centre (UNEP-WCMC), MAC and members of trade associations in exporting and importing countries (e.g. The Indonesia Coral, Shell and Ornamental Fish Association (AKKII), the Philippine Tropical Fish Exporters’ Association (PTFEA), Ornamental Fish International (OFI), the Ornamental Aquatics Trade Association (OATA)). It compiles accurate quantitative information on the aquarium trade through centralising and standardising sales records provided by aquarium wholesalers.


Other cited reference(s):


Temporal range: 2003
Geographical range: Global
Supplementary information: As of August 2003, the dataset contained 102,928 trade records (7.7 million imported and 9.4 million exported animals) covering a total of 2,393 species of fish, corals and invertebrates and spanning the years 1988 to 2003. These data have permitted the most accurate quantitative estimates to date of the size of the global trade in marine ornamental fish and corals, and the first ever estimates for invertebrates other than corals, a previously overlooked section of the industry.

The database can be opened in Access 2007, but the queries will only work in Access 2003.

An analysis of the database's content can be found in Wabnitz et al. (2003). The database is also discussed in UNEP-WCMC (2008).
**Purpose of creation:**
The database was developed to address a need for impartial and quantitative data on the trade of ornamental marine species. The data were intended to be used to assess impact and identify suitable responses.

**Creation methodology:**
Trade data were obtained from wholesale exporters and importers of marine aquarium organisms, most often through copies of trade invoices. Data were integrated and standardised into quantitative, species-specific information. A total of 58 companies, approximately one-fifth of the wholesalers in business, and four government management authorities provided data to GMAD.

**Version:**
1.0 (2003)

**Data lineage:**

**Category:** Administration

**Keywords:** aquarium, trade, GMAD, OATA, marine, OFI, AKKII, MAC, fish, coral, invertebrates

**Similar datasets:** None

**Limitations:** Data in GMAD were collected on a voluntary basis only. The database is not currently operational, and was last updated in 2003.

**Maintenance frequency:** Data are not being updated.

**Main access/use constraint:**

**Other access/use constraints:**
The database contains information of a sensitive nature, which is removed from the distributed version.

**Contact organisation:** UN Environment World Conservation Monitoring Centre

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<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Lauren Weatherdon</td>
<td>Senior Programme Officer</td>
</tr>
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<tbody>
<tr>
<td><a href="mailto:lauren.weatherdon@unep-wcmc.org">lauren.weatherdon@unep-wcmc.org</a></td>
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**Webpage and/or download:** Contact marine@unep-wcmc.org

**Other webpage:**

Dataset ID: WCMC-023

Web map service:

Factsheet:

Resolution, scale: Not applicable
West bounding:
South bounding:
Metadata standard: UNEP-WCMC Specific

Reference system: Not applicable
East bounding:
North bounding:
Date of metadata: 29/05/2015
Maritime Boundaries incl. Exclusive Economic Zones

Description: This dataset shows the global distribution of maritime boundaries, including Exclusive Economic Zones (EEZ), 12 and 24 nautical miles zones, archipelagic waters and internal waters. The dataset also contains information about treaties.


Temporal range: 2006-

Geographical range: Global

Supplementary information: All VLIZ Web services (Web Map Services - WMS; Web Feature Services - WFS) can be accessed at: http://www.marineregions.org/webservices.php. The geodatabase can also be consulted through a map interface at: http://www.marineregions.org/eezmapper.php.

Purpose of creation: Full details on the methodology can be found at http://www.marineregions.org/eezmethodology.php.

Version: 10.0 (2018)

Data lineage: Boundaries are dynamic due to new agreements and changes of the political landscape.

Category: Administration

Keywords: marine, coastal, high seas, EEZ

Similar datasets: Many countries have yet to agree maritime boundaries with neighbouring countries. Remarks and corrections can be sent to info@marineregions.org. The developers do not imply any opinion concerning the legal status of any country, territory or area, or concerning the delimitation of its frontiers or boundaries.

Version-specific 'known issues' and 'change history' can be found at:


The boundaries shown in this dataset do not imply official endorsement or acceptance by the United Nations.

The boundaries, names and designations used in this dataset do not imply official endorsement nor acceptance by the United Nations and contributory organisations.

Data are updated in intervals that are uneven in duration.

See 'Other access/use constraint(s)'.

Copyright information can be found at:
http://www.marineregions.org/disclaimer.php. The data can be used for educational, scientific or research purposes, but should not be used for legal, commercial/economical (exploration of natural resources) or navigational purposes.

Flanders Marine Institute

Owner

Acronym: VLIZ

Name: Simon Claus
City: Ostend
E-mail: info@marineregions.org
Web site: www.marineregions.org
Data format(s): Vector (polygon; .shp), Vector (polyline; .shp)
Distribution format(s): KML (.kml or .kmz), Vector (polygon; .shp), Vector (polyline; .shp)
Dataset size (uncompressed): 426 Mb
Webpage and/or download: http://www.marineregions.org

http://www.marineregions.org/eezmapper.php

Resolution, scale: Not applicable
East bounding: 180.0
Reference system: WGS 1984
West bounding: -180.0
North bounding: 87.0
South bounding: -90.0
Metadata standard: UNEP-WCMC Specific
Date of metadata: 10/11/2016
Global Distribution of Regional Fishery Bodies (2010)

Description: This dataset shows the global distribution of approximately 50 Regional Fishery Bodies (RFB). Some are related to the Food and Agriculture Organization of the United Nations (FAO), whilst others are not. The main objective of the RFBs is to ensure the sustainable exploitation of marine and freshwater resources by the establishment of a system of international regulation and by the development of marketing activities in conformity with the objectives of its members. RFBs are hence a mechanism through which states or organizations that are parties to an international fishery agreement or arrangement work together towards the conservation, management and/or development of fisheries. Some RFBs, especially those with an ecosystem mandate, work with e.g. seabirds that are connected with fisheries, but are not fish stocks per se. Some RFBs have an advisory mandate, and provide advice, decisions or coordinating mechanisms that are not binding on their members. Some have a management mandate – these are called Regional Fisheries Management Organizations (RFMOs); they adopt fisheries conservation and management measures that are binding on their members. RFBs have varied functions, including the collection, analysis and dissemination of information and data, coordinating fisheries management through joint schemes and mechanisms, serving as a technical and policy forum, and taking decisions relating to the conservation, management, development and responsible use of the resources.

Citation(s):


Temporal range: 2010
Geographical range: Global
Supplementary information: Attribute table: name of the RFB (RFB).

Boundary data can be viewed interactively at: http://figisapps.fao.org/figis/geoserver/factsheets/rfbs.html. The full names behind the RFBs’ acronyms are listed at: http://www.fao.org:80/geonetwork?uuid=cc7dbf20-1b8b-11dd-8bbb-
The dataset was developed to accompany the collection of RFBs summary descriptions FAO (2001-2013), which was designed to facilitate users' understanding of worldwide Regional Fishery Bodies.

Using a GIS approach, maps of area of competence for each Regional Fishery Body were prepared. When available, limits of the areas were extracted from the statutory documents of the Regional Fishery Bodies. In absence of established limits, a combination of geographic features from authoritative sources was used to assist in defining the approximate limits of the areas of competences.

This dataset is the 2010 map, updated August 2016.

The boundaries have not been validated by the relevant authorities.

Data are updated in intervals that are uneven in duration.

See 'Other access/use constraint(s)'.

Please see 'Citation' for guidance.

Food and Agriculture Organization of the United Nations

Owner

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KML (.kml or .kmz), Vector (polygon; .shp)

KML (.kml or .kmz), Vector (polygon; .shp)

20 Mb


http://data.fao.org/maps/wms

http://data.fao.org/maps/wms
Factsheet:

Resolution, scale:  
West bounding: -180.0  
South bounding: -90.0  
Metadata standard: UNEP-WCMC Specific  

Reference system: WGS 1984  
East bounding: 180.0  
North bounding: 90.0  
Date of metadata: 24/01/2017
Global Distribution of Dive Centres (2001)

Description: This dataset shows the global distribution of dive centres, some of which are PADI (Professional Association of Diving Instructors) affiliated.


Other cited reference(s):

Temporal range: 2001
Geographical range: Global

Supplementary information: Layer attributes include: PADI code (padi_code), diving operator (operator), Address (postal_add, Postal_a_1 to Postal_a_5, country), Reference (re1, ref2), reef name and reef system where available.

Purpose of creation: This dataset was created to accompany the World Atlas of Coral Reefs (map 2.1 in Spalding et al. 2001).

Creation methodology: Records and locations extracted from published articles, online resources (e.g. reefbase) and organisations. For most records the source information is retained within the layer.

Version: 1.2 (June 2015)

Data lineage: The original dataset (version 1.0) was created in 2001, with some edits having occurred in 2003 (ver. 1.1). This version of the dataset (ver. 1.2, June 2015) includes corrections to the latitudinal coordinates of 39 dive centre points that were incorrectly placed.

Category: Administration

Keywords: coastal, marine, human

Similar datasets: None
Limitations: This dataset is no longer maintained and should be used with caution.

Maintenance frequency: Data are not being updated.


Other access/use constraints: None

Contact organisation: UN Environment World Conservation Monitoring Centre

Organisation type: Owner

Acronym: UNEP-WCMC

Name: Lauren Weatherdon

Position: Senior Programme Officer

City: Cambridge

Country: United Kingdom

E-mail: lauren.weatherdon@unep-wcmc.org

Web site: www.unep-wcmc.org

Data format(s): Vector (point; .shp)

Distribution format(s): Vector (point; .shp)

Dataset size (uncompressed): 1.8 Mb

Webpage and/or download: http://data.unep-wcmc.org/datasets/27

Other webpage: http://www.arcgis.com/home/item.html?id=6b7e227dd13f4d6088583102e18ad099

Web map service: https://gis.unep-wcmc.org/arcgis/rest/services/marine/WCMC_030_DiveCentres2001/MapServer

Factsheet:

Resolution, scale: Not applicable

Reference system: WGS 1984

West bounding: -174.0

East bounding: 180.0

South bounding: -42.8

North bounding: 43.8

Metadata standard: UNEP-WCMC Specific

Date of metadata: 09/06/2015
Global Distribution of Islands "OSM" (2015)

Description: This dataset shows the global distribution of islands.

This dataset has been substantially refined through the work of a number of organisations, including UNEP World Conservation Monitoring Centre, Island Conservation, the University of California, Santa Cruz, BirdLife International, the Royal Society for the Protection of Birds, and the Global Island Network.


Temporal range: 2015

Geographical range: Global

Supplementary information: Attribute table: unique island ID code (id_gid); island name, if known (name); local island name, if any and if known, noting that some local names may relate to larger islands nearby (name_local); country (country); three-letter code for country (iso3).

Version 1.0 (dataset ID WCMC-005, approx. 180,000 islands) and versions 2.0 & 2.1 (dataset ID WCMC-031, approx. 460,000 islands) of the dataset can be joined using the id_ic field.

Purpose of creation: The dataset was developed so as to provide higher resolution geographic boundaries for islands.

Creation methodology: The geographic boundary dataset is originally based on Open Street Map data (© OpenStreetMap contributors), itself based on a 1:75,000 Landsat product from the US National Geospatial - Intelligence Agency.

Relevant information (essentially the island names) from version 1.0 (dataset ID WCMC-005) has been retained in subsequent versions.

Version: 2.1 (November 2015)

Data lineage: Island Conservation (IC) carried out significants improvements on version 2.0 of the dataset during 2015, thereby resulting in version 2.1 (November 2015). Over 3,000
islands were validated and edits were made to polygons where necessary (e.g. a modification to area or location, a deletion, or an addition). A record of changes carried out is available with permission from IC. In consultation with IC, UNEP-WCMC streamlined the attribute table of version 2.1, to remove unnecessary fields, including organisation-specific island IDs (island ID code used by the partner Island Conservation (id_ic); island ID code used by the partner RSPB (id_rspb)).

Versions 2 replaces version 1.0 (dataset ID WCMC-005), which is based on a lower resolution dataset from the GSHHS (Global Self-consistent, Hierarchical, High-resolution Geography) Database.

Category: Administration
Keywords: coastal

Similar datasets: WCMC-005

Limitations: This dataset is an intermediate product, and we welcome feedback from users. Please contact marine@unep-wcmc.org for directions on how to document changes. Presence of fake islands throughout the dataset. Not all islands listed have an associated name. The boundaries, names and designations used in this dataset do not imply official endorsement nor acceptance by the United Nations and contributory organisations.

Maintenance frequency: Data are updated in intervals that are uneven in duration.

Main access/use constraint: See 'Other access/use constraint(s)'.


Underlying geographic boundary dataset ("geometries"): CC BY-SA 3.0, Open Database License (http://www.openstreetmap.org/copyright, http://opendatacommons.org/licenses/odbl/, http://creativecommons.org/licenses/by-sa/3.0/).

Contact organisation: UN Environment World Conservation Monitoring Centre

Organisation type: Custodian          Acronym: UNEP-WCMC
Name: Lauren Weatherdon            Position: Senior Programme Officer
City: Cambridge                 Country: United Kingdom
E-mail: lauren.weatherdon@unep-wcmc.org
Web site: www.unep-wcmc.org
Data format(s): File geodatabase (.fgdb)
Distribution format(s): File geodatabase (.fgdb), Vector (polygon; .shp)
Dataset size (uncompressed): 311 Mb

Webpage and/or download: Contact: marine@unep-wcmc.org
Other webpage:
Web map service:

Factsheet:
Resolution, scale: Reference system: WGS 1984
West bounding: -180.0 East bounding: 180.0
South bounding: -80.0 North bounding: 83.7
Metadata standard: UNEP-WCMC Specific Date of metadata: 19/04/2016
Marine Regions Data Portal

Description: Marine Regions is an integration of the VLIMAR Gazetteer and the VLIZ Maritime Boundaries Geodatabase. The VLIMAR Gazetteer is a database with geographic, mainly marine names such as seas, sandbanks, seamounts, ridges, bays or even standard sampling stations used in marine research. The geographic cover of the VLIMAR gazetteer is global but initially focused on the Belgian Continental Shelf and the Scheldt Estuary and the Southern Bight of the North Sea. Gradually more regional and global geographic information was added to VLIMAR and combining this information with the Maritime Boundaries database, representing the Exclusive Economic Zone (EEZ) of the world, led to the creation of marineregions.org.


Temporal range: Variable
Geographical range: Global
Supplementary information: None.
Purpose of creation: Geographic Information Systems have become indispensable tools in managing and displaying marine data and information. However, a unique georeferenced standard of marine place names and areas was not available, hampering several marine geographic applications, for example the linking of these locations to databases to integrate data. 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.

Creation methodology: Marine Regions depends on data and knowledge sharing from global, European, regional and national data providers and relevant experts. By setting up Collaboration Agreements, data providers will benefit from belonging to the Marine Regions partnership as they would get increased visibility, gain access to a variety of data analysis services which will benefit from integration of several distributed spatial datasets, as well as enjoying the benefit of the creation of stable unique
identifiers.
Please contact info@marineregions.org if your organisation is interested to explore this collaboration.

Version:
Data lineage: Marine Regions is managed by the Flanders Marine Institute. Funding for the creation of the VLIMAR gazetteer was provided initially through the EU Network of Excellence MarBEF, but also other European initiatives such as Lifewatch provide the necessary funding for the maintenance and management of Marine Regions.

Category: Administration
Keywords: Administrative boundaries, EEZ, gazetteer, maritime zones, territorial seas, ecological classifications, fishing zones, bathymetry

Similar datasets: VLIZ-007, GEBCO-001

Limitations: Marine Regions works with an editorial board, responsible for the content and quality control of the data. We have editors that are responsible for the content of a specific source and the update of that source within Marine Regions, and regional editors that are in charge of a specific geographic area. You can apply for membership by sending your contact details, interest and proposed contribution

Maintenance frequency: Data are updated in intervals that are uneven in duration.

Main access/use constraint: Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0)
https://creativecommons.org/licenses/by-nc-sa/4.0/

Other access/use constraints: None.

Contact organisation: Flanders Marine Institute
Acronym: VLIZ

Resource provider

Name: Simon Claus
Position: Project Manager
City: Ostend
Country: Belgium
E-mail: info@marineregions.org
Web site: www.marineregions.org

Data format(s): Vector (point; .shp), Vector (polygon; .shp), Vector (polyline; .shp)

Distribution format(s): Vector (point; .shp), Vector (polygon; .shp), Vector (polyline; .shp), WMS

Dataset size (uncompressed): Variable

Webpage and/or download: http://www.marineregions.org
Other webpage:

Web map service:
| Dataset ID: VLIZ-003                                                                 |
| Resolution, scale: Variable                                                          |
| West bounding: -180.0                                                                 |
| South bounding: -60.0                                                                |
| Metadata standard: UNEP-WCMC Specific                                                |
| Reference system: Unknown                                                            |
| East bounding: 180.0                                                                  |
| North bounding: 60.0                                                                 |
| Date of metadata: 04/03/2019                                                          |
Global distribution of spatial planning in the marine environment

Description: This dataset is a first attempt at mapping the global distribution of areas in which initiatives of some kind are in place to undertake spatial planning in the marine realm. This layer is based upon the work done in the "International cross-border MSP [Marine Spatial Planning] best practice" (2016-2017) project. Spatial planning in the marine environment involves the analysis and allocation of spatial and temporal distributions of human activities in marine areas in order to achieve ecological, economic and social objectives. Some defining characteristics of marine spatial planning processes are that they are ecosystem-based, area-based and participatory. Spatial planning processes often involve multiple marine users or sectors, however they can involve only one sector or user. Spatial planning can therefore have single outcomes or multiple outcomes depending on those involved and the environmental and socio-economic needs of the area.

This version of the dataset only contains 23 sites not located in European waters, though the country coverage is likely to be increased in future versions. Also, the processes were selected on a set of six pre-defined criteria, as defined during the project "International cross-border MSP best practice" (2016-2017).


Temporal range: 1975 - 2013
Geographical range: Global

Supplementary information: Attribute table: PROC_ID (unique identification number given to each spatial planning process, as assigned during the project "International cross-border MSP best practice"); NAME (name of the process); YEAR (year in which the process was initiated); COUNTRIES (countries involved in the process); SP_SCALE (spatial scale of process, e.g. local, regional, international); AREA_KM2 (surface area (km2) of process implementation area); X_BORDER (cross border planning (Y/N)); LEAD_ENT (lead entity in MSP); ENT_TYPE (entity type, e.g. local government, NGO); SECTORS (sectors involved at all stages of process); DATASOURC (data sources).

Purpose of creation: Spatial planning processes are becoming increasingly prevalent across the globe and are expected to have various implications for human activities at sea. It is hoped that the information provided by this dataset will aid users of the sea in

planning their activities so as to ensure a balance between economic prosperity, social stability, and environmental sustainability and conservation.

It is also hoped that this dataset can contribute to tracking progress against Sustainable Development Goal 14 ("Life below water"), in particular indicator "14.2.1 - Proportion of national exclusive economic zones managed using ecosystem-based approaches".

Based on an inventory of spatial planning processes carried out as part of the project "International cross-border MSP best practice" (2016-2017), spatial data on the (mainly external) boundaries of processes were collated from online sources including SeaSketch projects, Protected Planet (https://www.protectedplanet.net), the Coral Triangle Atlas (http://ctatlas.reefbase.org/), and various planning process websites. Data were also requested from individuals involved in each planning process.

The 23 processes included in this dataset were assessed against six pre-defined selection criteria, developed during the "International cross-border MSP best practice" project: 1) aims to achieve ecological, economic and social objectives which contribute to an overarching sustainability goal; 2) applies the ecosystem approach; 3) includes multiple (at least two) marine sectors in the planning process; 4) aims to improve coherence between spatial planning and other processes, such as ICM [Integrated Coastal Management] and multiple use Marine Protected Areas; 5) involves stakeholders (government and/or private) and/or the public; and 6) makes use of marine spatial data.

Version: 1.0

Data lineage:
Category: Administration
Keywords: Marine Spatial Planning, marine, coastal

This dataset is a first, non-exhaustive, attempt at mapping spatial planning processes at sea based on processes that meet a set of six criteria. It is hoped that this first effort will be continued and additional processes incorporated in the global dataset.

There are limitations associated with the ‘NAME’ attribute as some of these processes are transboundary and are therefore likely to go by different names in each of these countries.

‘X_BORDER’ refers to whether the planning process currently includes some form of cross border planning. However, there are processes that have the potential for cross-border planning, but have yet to implement such measures.

There are various participative stages that marine sectors may be involved in (e.g. consultation, implementation). ‘SECTORS’ refers to sectors involved throughout the planning process and does not differentiate between those involved at separate stages, merely that they have been involved at some point or another.
Maintenance frequency: Data are updated in intervals that are uneven in duration.


Other access/use constraints: Contact organisation: UN Environment World Conservation Monitoring Centre

Organisation type: Custodian
Acronym: UNEP-WCMC

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Data format(s): Vector (polygon; .shp)
Distribution format(s): Vector (polygon; .shp)
Dataset size (uncompressed): 69.9 Mb

Webpage and/or download: Contact: marine@unep-wcmc.org
Other webpage:
Web map service:

Factsheet:
Resolution, scale: Not applicable
West bounding: -180.0
South bounding: -90.0
Metadata standard: UNEP-WCMC Specific
Reference system: WGS 1984
East bounding: 180.0
North bounding: 90.0
Date of metadata: 07/02/2017