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# Manual of marine and coastal datasets of biodiversity importance

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*2015 edition*



Annex 3. Detailed dataset-specific metadata

An introduction to key marine and coastal biodiversity datasets

# Manual of marine and coastal datasets of biodiversity importance, 2015 edition

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**Published** December 2015. ISBN: 978-92-807-3500-0. Job Number: DEW/1914/CA

## Acknowledgements

The authors are grateful to the Proteus Partnership who part-financed this work.

## Suggested citation

Weatherdon LV, Fletcher R, Jones MC, Kaschner K, Sullivan E, Tittensor DP, Mcowen C, Geffert JL, van Bochove JW, Thomas H, Blyth S, Ravillious C, Tolley M, Stanwell-Smith D, Fletcher S, Martin CS (2015). Manual of marine and coastal datasets of biodiversity importance. December 2015 edition. Cambridge (UK): UNEP World Conservation Monitoring Centre. 30 pp. (+ 4 annexes totalling 221 pp. and one e-supplement)

## Edition

This Manual was first published by Martin *et al.* in 2014. The 2015 edition includes updated annexes (50 new datasets and 24 additional metadata sheets), with minor edits throughout the main text.

This publication is available online at: [wcmc.io/MarineDataManual](http://wcmc.io/MarineDataManual)



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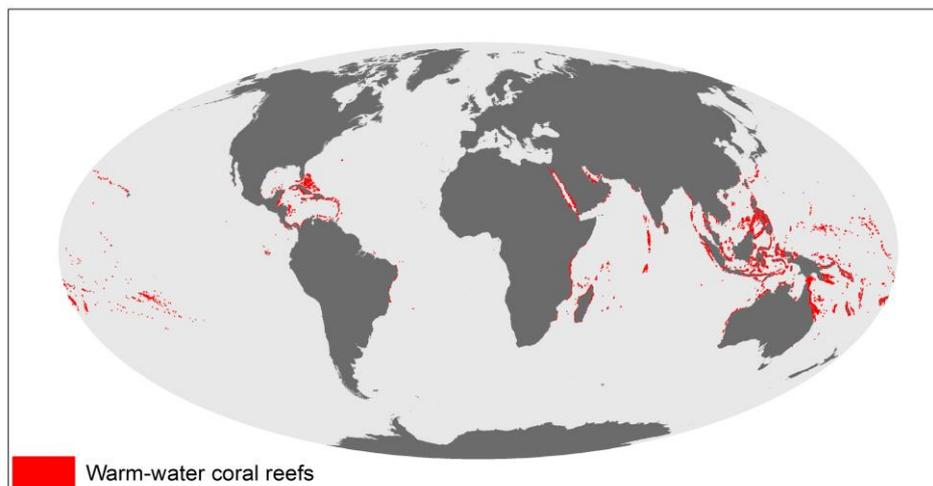
Cover page image: Anemone fish, Copyright: F. Wasserfuehrer, 2014 (Image ID: 96446297). Used under license from Shutterstock.com.

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## Global Distribution of Coral Reefs (2010)



**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):** UNEP-WCMC, WorldFish Centre, WRI, TNC (2010). Global distribution of coral reefs, compiled from multiple sources including the Millennium Coral Reef Mapping Project. Version 1.3, updated by UNEP-WCMC. Includes contributions from IMaRS-USF and IRD (2005), IMaRS-USF (2005) and Spalding et al. (2001). Cambridge (UK): UNEP World Conservation Monitoring Centre. URL: <http://data.unep-wcmc.org/datasets/1>

For further information on the Millennium Coral Reef Mapping Project, see: Andréfouët S, Muller-Karger FE, Robinson JA, Kranenburg CJ, Torres-Pulliza D, Spraggins SA, Murch B. (2006). Global assessment of modern coral reef extent and diversity for regional science and management applications: a view from space. Proceedings of 10th International Coral Reef Symposium: 1732-1745.

Citations for the separate entities:

IMaRS-USF (Institute for Marine Remote Sensing-University of South Florida) (2005). Millennium Coral Reef Mapping Project. Unvalidated maps. These maps are unendorsed by IRD, but were further interpreted by UNEP World Conservation Monitoring Centre. Cambridge (UK): UNEP World Conservation Monitoring Centre.

IMaRS-USF, IRD (Institut de Recherche pour le Développement) (2005). Millennium Coral Reef Mapping Project. Validated maps. Cambridge (UK): UNEP World Conservation Monitoring Centre.

Spalding MD, Ravilious C, Green EP (2001). World Atlas of Coral Reefs. Berkeley (California, USA): The University of California Press. 436 pp. URL: <https://archive.org/details/worldatlasofcora01spal>

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

Burke L, Reynter K, Spalding M, Perry A. (2011). *Reefs at Risk Revisited*. Washington, DC: World Resources Institute. 115 pp. URL: <http://www.wri.org/publication/reefs-risk-revisited>

**Temporal range:** 1954-2009

**Geographical range:** Global

**Supplementary information:** Attribute table: geomorphological type (COV\_TYPE); ReefBase classification by type and location (RB\_ATTRIB; types: barrier reef, fringing reef, patch reef, shelf reef; locations: island, continental; classification available for 30% of the records); Reefbase code (RB\_CODE; 2-barrier island, 3-barrier continental, 4-barrier atoll-bank, 5-fringing island, 6-fringing continental, 7-patch island, 8-patch continental; 9-patch atoll-bank, 10-shelf island, 11-shelf continental); ReefBase depth code (1-shallow reef, 2-variable depth reef, 3-deep reef; 4-shallow non reef); ReefBase coral classification by depth (RB\_DEPTH\_A; shallow, mixed, deep, non-reef); ISO 3166 3 character code of country (ISO3\_1); coral reef name (REEF\_NAM\_1; available for almost 3,000 reefs); island name (ISLAND\_N\_1); country name (COUNTRY\_1); country sovereignty (SOVEREIG\_1); source ID (SOURCE\_ID, to be used with the "Coral\_Source.mdb" table that lists 78 original sources of information); polygon perimeter (Shape\_Leng; in m); polygon area (Shape\_Area; in sq-m).

**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 Millennium 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](http://www.ukho.gov.uk)) © British Crown Copyright and/or database rights. The dataset is mostly fitted to ESRI's base layer.

**Version:** 1.3

**Data lineage:** 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:** coral reef, tropical, subtropical, marine, coastal, biogenic, habitat, benthic

**Similar datasets:** WCMC-09

**Limitations:** While having global coverage, the dataset was compiled from multiple sources with varying scale and quality (outlined in "Coral\_Source.dbf," which is 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.

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

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

**Contact organisation:** UNEP World Conservation Monitoring Centre

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

**Name:** Dr. Steve Fletcher **Position:** Head of Programme

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

**E-mail:** [steve.fletcher@unep-wcmc.org](mailto:steve.fletcher@unep-wcmc.org)

**Web site:** [www.unep-wcmc.org](http://www.unep-wcmc.org)

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

Dataset ID: WCMC-008

Distribution format(s):	Vector (polygon; .shp)	Dataset size (uncompressed):	1.33 GB
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Webpage and/or download: <http://data.unep-wcmc.org/datasets/1>

Other webpage: <http://www.arcgis.com/home/item.html?id=97071c96008d4ea6b0aabe4ed125661f>

Web map service: [http://ec2-54-204-216-109.compute-1.amazonaws.com:6080/arcgis/rest/services/marine/WCMC\\_008\\_CoralReefs2010/MapServer](http://ec2-54-204-216-109.compute-1.amazonaws.com:6080/arcgis/rest/services/marine/WCMC_008_CoralReefs2010/MapServer)

Factsheet: [http://wcmc.io/warm\\_coral\\_reef](http://wcmc.io/warm_coral_reef)

Resolution, scale:	Variable	Reference system:	WGS 1984
West bounding:	-180.0	East bounding:	180.0
South bounding:	-34.3	North bounding:	32.5
Metadata standard:	UNEP-WCMC Specific	Date of metadata:	29/05/2015

## Global Distribution of Coral Reefs - 1 Km Data (2003)



■ Warm-water coral reefs

**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).

**Citation(s):** UNEP-WCMC (2003). Global distribution of coral reefs (version 7.0). A 1 km resolution grid produced by UNEP-WCMC from an updated version of the data layer in Spalding et al. (2001). Cambridge (UK): UNEP World Conservation Monitoring Centre.

**Other cited reference(s):**

Spalding MD, Ravilious C, Green EP (2001). World Atlas of Coral Reefs. Berkeley (California, USA): The University of California Press. 436 pp. URL: <https://archive.org/details/worldatlasofcora01spal>

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

Burke L, Reyttar K, Spalding M, Perry A. (2011). Reefs at Risk Revisited. Washington, DC: World Resources Institute. 115 pp. URL: <http://www.wri.org/publication/reefs-risk-revisited>

**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 1 km 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

Dataset ID: WCMC-009

Similar datasets: WCMC-08

**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.

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

**Other access/use constraints:** None

**Contact organisation:** UNEP World Conservation Monitoring Centre

<b>Organisation type:</b>	Custodian	<b>Acronym:</b>	UNEP-WCMC
<b>Name:</b>	Dr. Steve Fletcher	<b>Position:</b>	Head of Programme
<b>City:</b>	Cambridge	<b>Country:</b>	United Kingdom
<b>E-mail:</b>	<a href="mailto:steve.fletcher@unep-wcmc.org">steve.fletcher@unep-wcmc.org</a>		

**Web site:** [www.unep-wcmc.org](http://www.unep-wcmc.org)

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

<b>Distribution format(s):</b>	Vector (polygon; .shp)	<b>Dataset size (uncompressed):</b>	5.89MB
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**Webpage and/or download:** [See metadata](#)

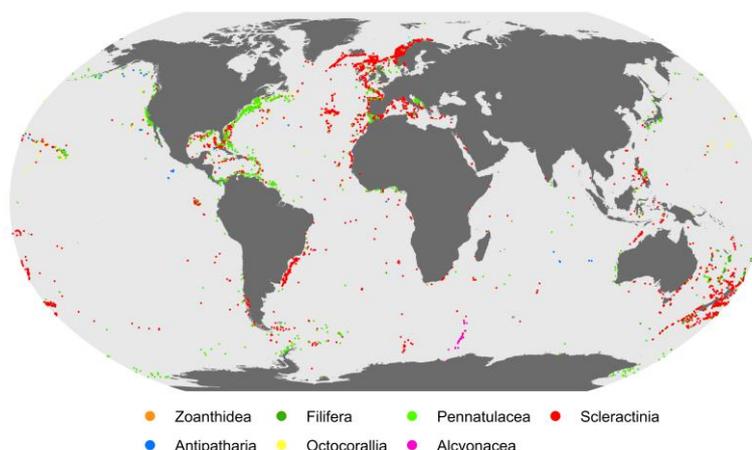
**Other webpage:**

**Web map service:**

**Factsheet:** [http://wcmc.io/warm\\_coral\\_reef](http://wcmc.io/warm_coral_reef)

<b>Resolution, scale:</b>	1 km cell size	<b>Reference system:</b>	WGS 1984
<b>West bounding:</b>	-180.0	<b>East bounding:</b>	180.0
<b>South bounding:</b>	-34.3	<b>North bounding:</b>	32.5
<b>Metadata standard:</b>	UNEP-WCMC Specific	<b>Date of metadata:</b>	29/05/2015

## Global Distribution of Cold-water Corals (2017)



**Description:** This dataset shows of 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.

**Citation(s):** Freiwald A, Rogers A, Hall-Spencer J, Guinotte JM, Davies AJ, Yesson C, Martin CS, Weatherdon LV (2017). Global distribution of cold-water corals (version 3.0). Second update to the dataset in Freiwald et al. (2004) by UNEP-WCMC, in collaboration with Andre Freiwald and John Guinotte. Cambridge (UK): UNEP World Conservation Monitoring Centre. URL: <http://data.unep-wcmc.org/datasets/3>

**Other cited reference(s):**

Freiwald A, Fosså JH, Grehan A, Koslow T, Roberts JM (2004). Cold-water coral reefs: out of sight – no longer out of mind. Biodiversity Series 22. Cambridge (UK): UNEP World Conservation Monitoring Centre. 86 pp. URL: <https://archive.org/details/coldwatercoralre04frei>

OSPAR Commission. (2015). OSPAR Threatened and/or Declining Habitats 2015. URL: <http://www.ospar.org/work-areas/bdc/species-habitats/list-of-threatened-declining-species-habitats>. Data URL: <http://www.emodnet-seabedhabitats.eu/download>.

**Temporal range:** 1915-2014

**Geographical range:** Global

**Supplementary information:** Attribute table: depth range, including upper and lower depths (DEPTH\_RANG, DEPTH\_UPPE, and DEPTH\_LOWE, in metres); region (REGION); country [C\_NAMELONG]; Class [CLASS], order [ORDER], and species [TAXON]; person(s) who identified the species [DETERMINER]; country or territory and parent country, where applicable ["ISO3" and "PARENT\_ISO"]; status of the sample, where available (live, dead, etc); reference where the record was first published, and much more; start and end date of data collection ["START\_DATE" and "END\_DATE"]; type of dates used in the former ["DateType": D - nearest day; DD - nearest days; Y - nearest year; YY - range of years; -Y - only end date known; ND or U - no date].

Dataset ID: WCMC-001

**Purpose of creation:** Version 1 of the dataset was created to accompany the report by Freiwald et al. (2004). Versions 2 and 3 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. The "FILE\_NAME" and "REFERENCE\_" fields provide further details regarding the sources.

**Version:** 3.0

**Data lineage:** 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. The latest version, version 3.0 published January 2017, 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 License (excluding WDPA). See [www.unep-wcmc.org/policies/general-data-license-excluding-wdpa#data\\_policy](http://www.unep-wcmc.org/policies/general-data-license-excluding-wdpa#data_policy) and [www.unep-wcmc.org/policies](http://www.unep-wcmc.org/policies). For commercial use, please contact [business-support@unep-wcmc.org](mailto:business-support@unep-wcmc.org).

**Other access/use constraints:** None

**Contact organisation:** UNEP World Conservation Monitoring Centre

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

**Name:** Dr. Steve Fletcher **Position:** Head of Programme

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**Web site:** [www.unep-wcmc.org](http://www.unep-wcmc.org)

**Data format(s):** Vector (point; .shp)

Dataset ID: WCMC-001

Distribution format(s): Vector (point; .shp) Dataset size (uncompressed): 23 Mb

Webpage and/or download: <http://data.unep-wcmc.org/datasets/3>

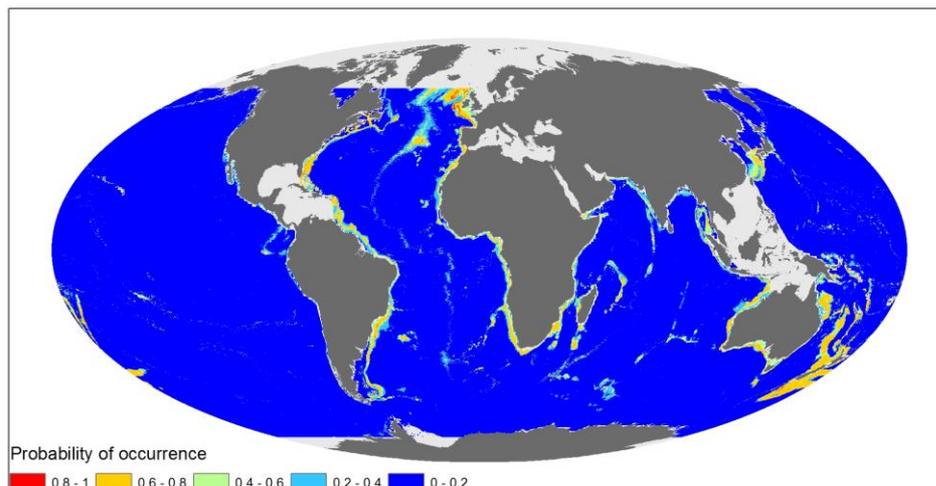
Other webpage: <http://www.arcgis.com/home/item.html?id=3ecb764343324bcab4c64c66d324cbd0>

Web map service: [http://ec2-54-204-216-109.compute-1.amazonaws.com:6080/arcgis/rest/services/marine/WCMC001\\_ColdwaterCorals2017/MapServer/WMSServer](http://ec2-54-204-216-109.compute-1.amazonaws.com:6080/arcgis/rest/services/marine/WCMC001_ColdwaterCorals2017/MapServer/WMSServer)

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

Resolution, scale:	--	Reference system:	WGS 1984
West bounding:	-179.9	East bounding:	179.9
South bounding:	-77.9	North bounding:	71.4
Metadata standard:	UNEP-WCMC Specific	Date of metadata:	10/01/2017

## 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.

**Citation(s):** Davies AJ, Guinotte JM (2011). Global habitat suitability for framework-forming cold-water corals. PLoS ONE 6(4): e18483. doi: 10.1371/journal.pone.0018483.

**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 *Solenosmillia 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 *Solenosmillia 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

Dataset ID: Bangor-001

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](mailto:andrew.j.davies@bangor.ac.uk) and [John.Guinotte@marine-conservation.org](mailto:John.Guinotte@marine-conservation.org).

Contact organisation: School of Ocean Sciences, University of Bangor

Organisation type: Owner Acronym:

Name: Dr Andrew J. Davies Position: Senior Lecturer

City: Bangor Country: United Kingdom

E-mail: [andrew.j.davies@bangor.ac.uk](mailto: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>

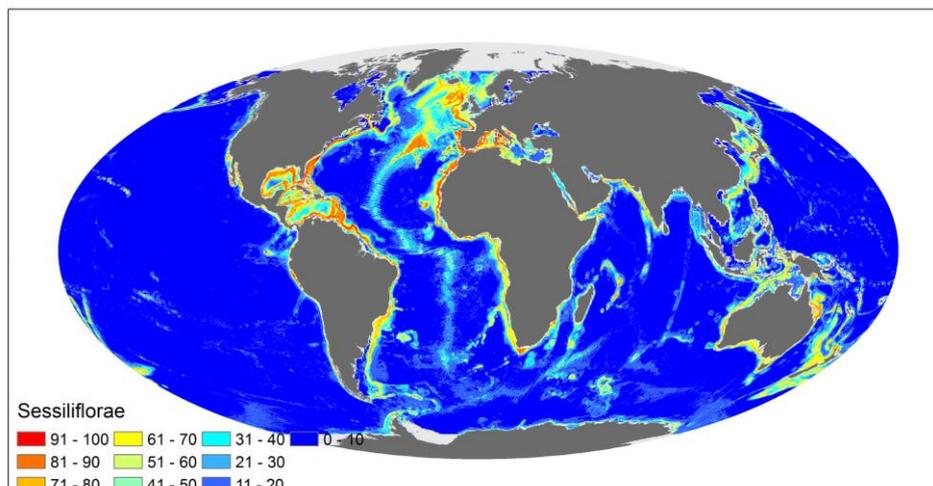
Resolution, scale: -- Reference system: WGS 1984

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.

**Citation(s):** Yesson C, Taylor ML, Tittensor DP, Davies AJ, Guinotte J, Baco A, Black J, Hall-Spencer JM, Rogers AD (2012). Global habitat suitability of cold-water Octocorals. *Journal of Biogeography* 39: 1278-1292. Paper DOI: 10.1111/j.1365-2699.2011.02681.x. Data URL: <http://doi.pangaea.de/10.1594/PANGAEA.775081>; <http://data.unep-wcmc.org/datasets/40>

**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



Dataset ID: ZSL-001

Web map service: [http://ec2-54-204-216-109.compute-1.amazonaws.com:6080/arcgis/rest/services/marine/ZSL\\_001\\_ModelledOctocorals\\_2012/MapServer](http://ec2-54-204-216-109.compute-1.amazonaws.com:6080/arcgis/rest/services/marine/ZSL_001_ModelledOctocorals_2012/MapServer)

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

Resolution, scale: 0.166 dd (10x10 arc-min.)

West bounding: -180.0

South bounding: -72.0

Metadata standard: UNEP-WCMC Specific

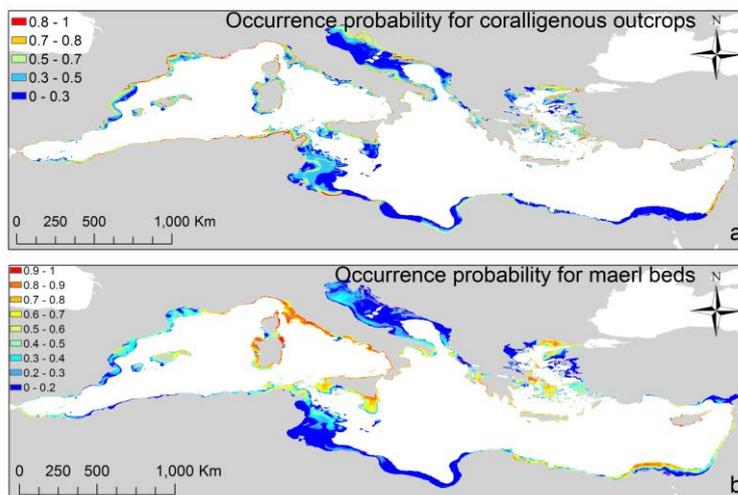
Reference system: WGS 1984

East bounding: 180.0

North bounding: 70.0

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):** Martin CS, Giannoulaki M, De Leo F, Scardi M, Salomidi M, Knitweiss L, Pace ML, Garofalo G, Gristina M, Ballesteros E, Bavestrello G, Belluscio A, Cebrian E, Gerakaris V, Pergent G., Pergent-Martini C, Schembri PJ, Terribile K, Rizzo L, Ben Souissi J, Bonacorsi M, Guarnieri G, Krzelj M, Macic V, Punzo E, Valavanis V, Fraschetti S (2014) Coralligenous and maerl habitats: predictive modelling to identify their spatial distributions across the Mediterranean Sea. *Scientific Reports* 4: 5073. URL: <http://www.nature.com/srep/2014/140527/srep05073/full/srep05073.html> ; <http://www.emodnet-seabedhabitats.eu/default.aspx?page=1974>

**Other cited reference(s):**

Giannoulaki M, Belluscio A, Colloca F, Fraschetti S, Scardi M, Smith C, Panayotidis P, Valavanis V, Spedicato MT (Eds.) (2013). *Mediterranean Sensitive Habitats (MEDISEH), final project report*. DG MARE Specific Contract SI2.600741. Heraklion (Greece): Hellenic Centre for Marine Research. 557 p. URL: <http://mareaproject.net/download/71>

**Temporal range:** 2014

**Geographical range:** Mediterranean basin

**Supplementary information:** The maps show the predicted occurrence probabilities for coralligenous outcrops and maërl 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 Frascchetti at the University of Salento, Italy ([simona.frascchetti@unisalento.it](mailto:simona.frascchetti@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:**

**Limitations:**

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.

**Maintenance frequency:**

Data are updated in intervals that are uneven in duration.

Dataset ID: Mediseh-001

**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:** UNEP World Conservation Monitoring Centre

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

**Name:** Dr. Corinne Martin **Position:** Programme Officer, Marine P

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

**E-mail:** [corinne.martin@unep-wcmc.org](mailto:corinne.martin@unep-wcmc.org)

**Web site:** [www.unep-wcmc.org](http://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)

**Webpage and/or download:** <http://www.emodnet-seabedhabitats.eu/default.aspx?page=1974>

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

**Web map service:**

**Factsheet:**

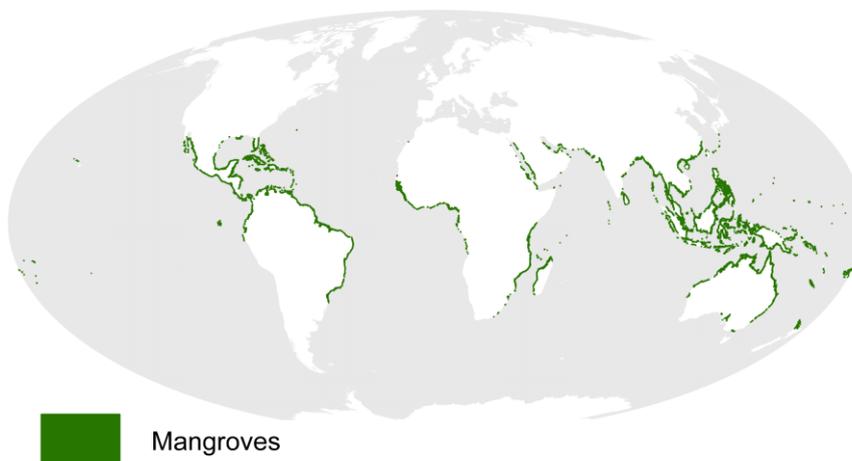
**Resolution, scale:** 0.004166 dd **Reference system:** WGS 1984

**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)



<b>Description:</b>	This dataset shows the global distribution of mangrove forests, derived from earth observation satellite imagery.
<b>Citation(s):</b>	Giri C, Ochieng E, Tieszen LL, Zhu Z, Singh A, Loveland T, Masek J, Duke N (2011). Status and distribution of mangrove forests of the world using earth observation satellite data (version 1.3, updated by UNEP-WCMC). <i>Global Ecology and Biogeography</i> 20: 154-159. Paper DOI: 10.1111/j.1466-8238.2010.00584.x; Data URL: <a href="http://data.unep-wcmc.org/datasets/4">http://data.unep-wcmc.org/datasets/4</a>
<b>Temporal range:</b>	1997-2000
<b>Geographical range:</b>	Global
<b>Supplementary information:</b>	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).
<b>Purpose of creation:</b>	The aim was to use a globally consistent and repeatable methodology, to produce a high-resolution dataset.
<b>Creation methodology:</b>	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.
<b>Version:</b>	1.3 (June 2015)
<b>Data lineage:</b>	Changes to this dataset include: <ul style="list-style-type: none"> <li>- Ver 1.1: Country codes (ISO3) added by UNEP-WCMC.</li> <li>- 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</li> </ul>

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 Pulau Rupert 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 License (excluding WDPA). See [www.unep-wcmc.org/policies/general-data-license-excluding-wdpa#data\\_policy](http://www.unep-wcmc.org/policies/general-data-license-excluding-wdpa#data_policy) and [www.unep-wcmc.org/policies](http://www.unep-wcmc.org/policies). For commercial use, please contact [business-support@unep-wcmc.org](mailto:business-support@unep-wcmc.org).

Dataset ID: WCMC-010

Other access/use None  
constraints:

Contact organisation: UNEP World Conservation Monitoring Centre

Organisation type: Custodian Acronym: UNEP-WCMC

Name: Dr. Steve Fletcher Position: Head of Programme

City: Cambridge Country: United Kingdom

E-mail: [steve.fletcher@unep-wcmc.org](mailto:steve.fletcher@unep-wcmc.org)

Web site: [www.unep-wcmc.org](http://www.unep-wcmc.org)

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

Distribution format(s): Vector (polygon; .shp) Dataset size (uncompressed): 0.98 Gb

Webpage and/or download: <http://data.unep-wcmc.org/datasets/4>

Other webpage: <http://www.arcgis.com/home/item.html?id=62b6797f5091428fa89e10f7b3a1f73c>

Web map service: [http://ec2-54-204-216-109.compute-1.amazonaws.com:6080/arcgis/rest/services/marine/WCMC\\_010\\_MangrovesUSGS2011/MapServer](http://ec2-54-204-216-109.compute-1.amazonaws.com:6080/arcgis/rest/services/marine/WCMC_010_MangrovesUSGS2011/MapServer)

Factsheet: <http://wcmc.io/mangroves>

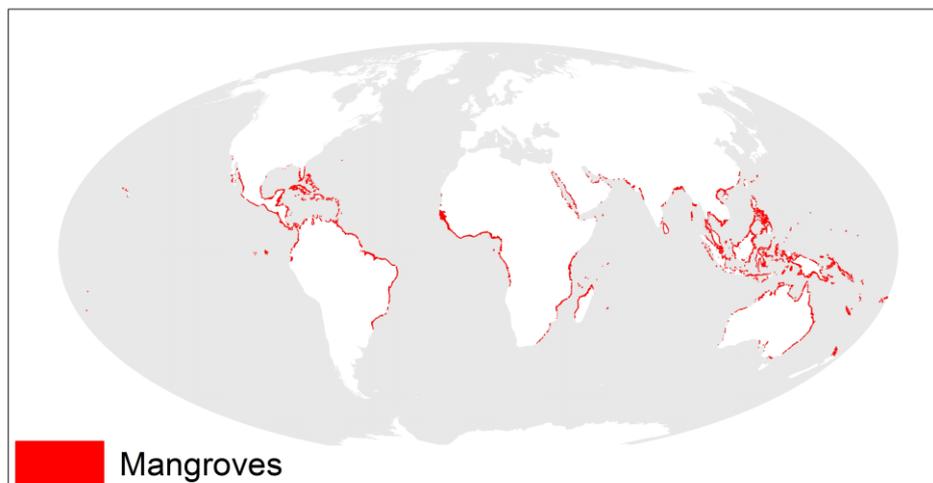
Resolution, scale: 30 m Reference system: WGS 1984

West bounding: -180.0 East bounding: 180.0

South bounding: -38.8 North bounding: 32.4

Metadata standard: UNEP-WCMC Specific Date of metadata: 01/07/2015

## World Atlas of Mangroves (2010)



**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), United Nations Environment Programme 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.

**Citation(s):** Spalding M, Kainuma M, Collins L (2010). World Atlas of Mangroves (version 1.1). A collaborative project of ITTO, ISME, FAO, UNEP-WCMC, UNESCO-MAB, UNU-INWEH and TNC. London (UK): Earthscan, London. 319 pp. URL: <http://www.routledge.com/books/details/9781844076574> ; <http://data.unep-wcmc.org/datasets/5>

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

**Geographical range:** Global

**Supplementary information:** The dataset is distributed with a list of data sources ("WCMC-011-AtlasMangrove2010-MapReferences.pdf"), organised by region. This dataset is also known as the "Global Mangrove Partnership Dataset".

Attribute table: ISO 3166 3 character code of country (ISO3); surface area (AREA\_KM2; in sq-km); total mangrove surface area for the country (CTRYMANG; in sq-km); data source (SOURCE).

**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").

Dataset ID: WCMC-011

**Version:** 1.1

**Data lineage:** This dataset supersedes WCMC-012 (1997).

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

**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 License (excluding WDPA). See [www.unep-wcmc.org/policies/general-data-license-excluding-wdpa#data\\_policy](http://www.unep-wcmc.org/policies/general-data-license-excluding-wdpa#data_policy) and [www.unep-wcmc.org/policies](http://www.unep-wcmc.org/policies). For commercial use, please contact [business-support@unep-wcmc.org](mailto:business-support@unep-wcmc.org).

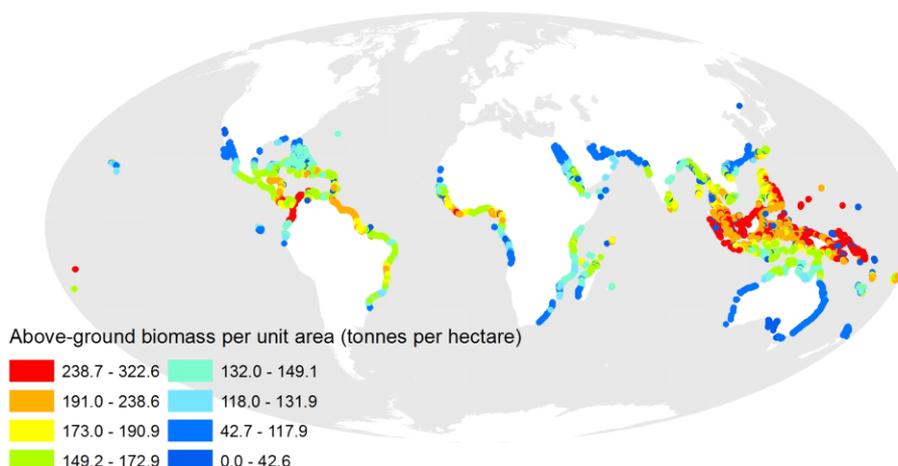
**Other access/use constraints:** Please also refer to the license file ("WCMC-011-AtlasMangrove2010-License.pdf") distributed with the dataset.

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](mailto:isme@mangrove.or.jp)).

For commercial use of the dataset, please contact [business-support@unep-wcmc.org](mailto:business-support@unep-wcmc.org) and [isme@mangrove.or.jp](mailto:isme@mangrove.or.jp).



## 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.

**Citation(s):** Hutchison J, Manica A, Swetnam R, Balmford A, Spalding M (2014) Predicting global patterns in mangrove forest biomass. *Conservation Letters* 7(3): 233–240. doi: <http://dx.doi.org/10.1111/conl.12060>; Data URL: <http://data.unep-wcmc.org/datasets/39>

**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; WCMC-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 km<sup>2</sup>); 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 recommended that the layer be used in fine scale analyses.

**Purpose of creation:** This 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 recommended 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 be sensibly used).

Dataset ID: TNC-001

Maintenance frequency: Data are not being updated.

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

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](mailto: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: [http://ec2-54-204-216-109.compute-1.amazonaws.com:6080/arcgis/rest/services/marine/TNC\\_001\\_GlobalMangroveBioMass2014/MapServer](http://ec2-54-204-216-109.compute-1.amazonaws.com:6080/arcgis/rest/services/marine/TNC_001_GlobalMangroveBioMass2014/MapServer)

Factsheet: <http://wcmc.io/mangroves>

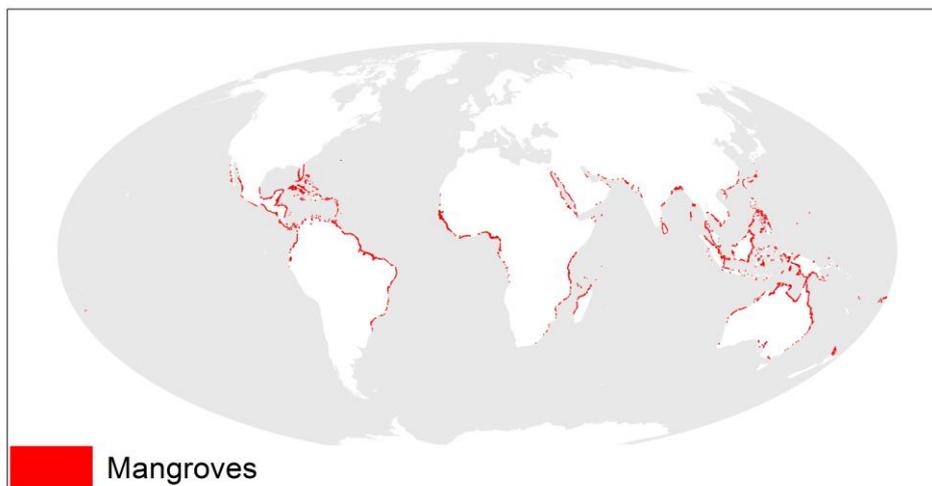
Resolution, scale: Not applicable      Reference system: WGS 1984

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

## World Mangrove Atlas (1997)



<b>Description:</b>	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).
<b>Citation(s):</b>	Spalding MD, Blasco F, Field CD (Eds.) (1997). World Mangrove Atlas. Okinawa (Japan): International Society for Mangrove Ecosystems. 178 pp. Compiled by UNEP-WCMC, in collaboration with the International Society for Mangrove Ecosystems (ISME). URL: <a href="https://archive.org/details/worldmangroveat197spal">https://archive.org/details/worldmangroveat197spal</a> ; <a href="http://data.unep-wcmc.org/datasets/6">http://data.unep-wcmc.org/datasets/6</a>
<b>Temporal range:</b>	1960-1996
<b>Geographical range:</b>	Global
<b>Supplementary information:</b>	Attribute table: ISO 3166 3 character code of country (ISO3); data source type (DESCRIPTIO); 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).
<b>Purpose of creation:</b>	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.
<b>Creation methodology:</b>	This composite dataset was compiled from data at various scales (some quite coarse). Some data were digitised by hand from paper maps.
<b>Version:</b>	1.0
<b>Data lineage:</b>	This dataset is superseded by WCMC-011 (2010).
<b>Category:</b>	Biogenic habitat
<b>Keywords:</b>	coastal, blue carbon, mangrove, forest, habitat, ecosystem
<b>Similar datasets:</b>	WCMC-010, WCMC-011
<b>Limitations:</b>	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.

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

**Other access/use constraints:** None

**Contact organisation:** UNEP World Conservation Monitoring Centre

<b>Organisation type:</b>	Custodian	<b>Acronym:</b>	UNEP-WCMC
<b>Name:</b>	Dr. Steve Fletcher	<b>Position:</b>	Head of Programme
<b>City:</b>	Cambridge	<b>Country:</b>	United Kingdom
<b>E-mail:</b>	<a href="mailto:steve.fletcher@unep-wcmc.org">steve.fletcher@unep-wcmc.org</a>		
<b>Web site:</b>	<a href="http://www.unep-wcmc.org">www.unep-wcmc.org</a>		

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

<b>Distribution format(s):</b>	Vector (polygon; .shp)	<b>Dataset size (uncompressed):</b>	93.4 MB
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**Webpage and/or download:** <http://data.unep-wcmc.org/datasets/6>

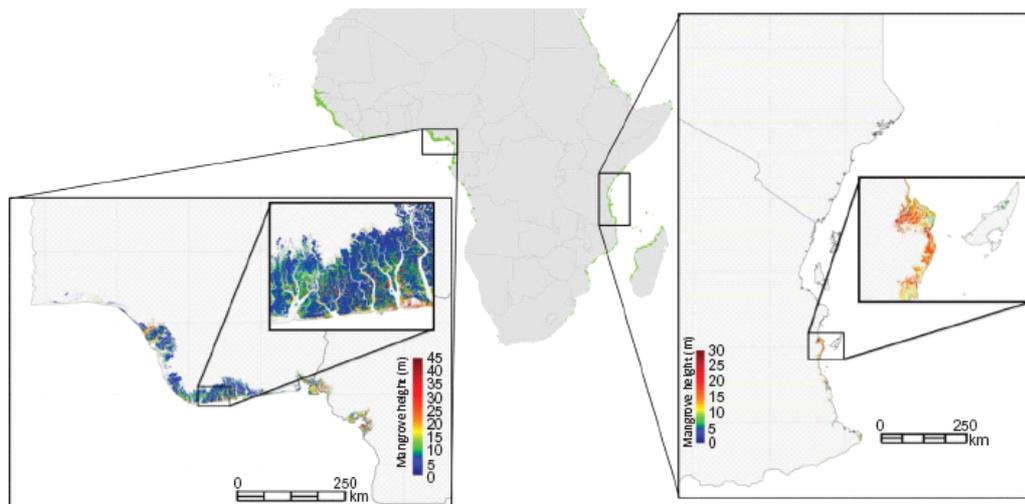
**Other webpage:** <http://www.arcgis.com/home/item.html?id=20b7cc32b97442848d8b66904765d8e8>

**Web map service:** [http://downloads.wdpa.org/ArcGIS/rest/services/ocean\\_data\\_viewer/mangroves2/MapServer](http://downloads.wdpa.org/ArcGIS/rest/services/ocean_data_viewer/mangroves2/MapServer)

**Factsheet:** <http://wcmc.io/mangroves>

<b>Resolution, scale:</b>	1:1,000,000	<b>Reference system:</b>	WGS 1984
<b>West bounding:</b>	-175.3	<b>East bounding:</b>	179.9
<b>South bounding:</b>	-38.9	<b>North bounding:</b>	32.4
<b>Metadata standard:</b>	UNEP-WCMC Specific	<b>Date of metadata:</b>	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.
- Citation(s):** Fatoyinbo T, Simard M (2013) Height and biomass of mangroves in Africa from ICESat/GLAS and SRTM, *International Journal of Remote Sensing*, 34:2, 668-681. DOI: 10.1080/01431161.2012.712224
- Temporal range:** 2000 and 2007
- Geographical range:** Africa
- Supplementary information:**
- Purpose of creation:** 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:**
- Limitations:** 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.
- Maintenance frequency:** Data are not being updated.
- Main access/use constraint:** UNEP-WCMC General Data License (excluding WDPA). See [www.unep-wcmc.org/policies/general-data-license-excluding-wdpa#data\\_policy](http://www.unep-wcmc.org/policies/general-data-license-excluding-wdpa#data_policy) and

Dataset ID: NASA-001

[www.unep-wcmc.org/policies](http://www.unep-wcmc.org/policies). For commercial use, please contact [business-support@unep-wcmc.org](mailto:business-support@unep-wcmc.org).

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](mailto: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: [Contactmarine@unep-wcmc.org](mailto:Contactmarine@unep-wcmc.org)

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

Web map service:

Factsheet: <http://wcmc.io/mangroves>

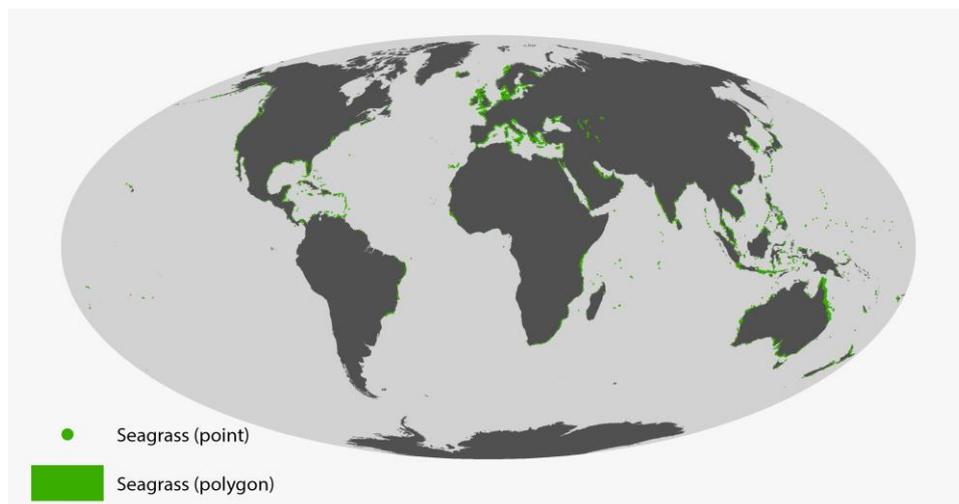
Resolution, scale: 90m Reference system: WGS 1984

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 (2016)



**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. OSPAR), and projects (e.g. the European project Mediterranean Sensitive Habitats "Mediseh"), across the globe (full list available in "Seagrass\_Metadata\_v4.dbf").

**Citation(s):** UNEP-WCMC, Short FT (2016). Global distribution of seagrasses (version 4.0). Fourth update to the data layer used in Green and Short (2003). Cambridge (UK): UNEP World Conservation Monitoring Centre. URL: <http://data.unep-wcmc.org/datasets/7>

## Other cited reference(s):

Green EP, Short FT (2003). World atlas of seagrasses. Prepared by UNEP World Conservation Monitoring Centre. Berkeley (California, USA): University of California. 332 pp. URL: <https://archive.org/details/worldatlasofseag03gree>

Belluscio A, Panayiotidis P, Gristina M, Knittweis L, Pace ML, Telesca L, Criscoli A, Apostolaki ET, Gerakaris V, Frascchetti S, Spedicato MT, Lembo G, Salomidi M, Mifsud R, Fabi G, Badalamenti F, Garofalo G, Alagna A, Ardizzone GD, Martin CS, Valavanis V (2013). Task 1.1. Seagrass beds distribution along the Mediterranean coasts. In: Mediterranean Sensitive Habitats (MEDISEH), final project report (Eds. M Giannoulaki, A Belluscio, F Colloca, S Frascchetti, M Scardi, C Smith, P Panayotidis, V Valavanis, MT Spedicato). DG - MARE, specific contract SI2.600741. Heraklion (Greece): Hellenic Centre for Marine Research. 557 pp. URL: <http://mareaproject.net/download/71>

Telesca L, Belluscio A, Criscoli A, Ardizzone G, Apostolaki ET, Frascchetti S, Gristina M, Knittweis L, Martin CS, Pergent G, Alagna A, Badalamenti F, Garofalo G, Gerakaris V, Pace ML, Pergent-Martini C, Salomidi M, 2015. Seagrass meadows (*Posidonia oceanica*) distribution and trajectories of change. *Scientific Reports* 5: 12505. URL: <http://www.nature.com/articles/srep12505>

OSPAR Commission. (2015). OSPAR Threatened and/or Declining Habitats 2015. URL: <http://www.ospar.org/work-areas/bdc/species-habitats/list-of-threatened-declining-species-habitats>. Data URL: <http://www.emodnet-seabedhabitats.eu/download>.

Dataset ID: WCMC-013-014

Temporal range: 1934-2015

Geographical range: Global

Supplementary information: Attribute table: ISO 3166 3 character code of country ("ISO3"); species (BIO\_CLASS); common name (COM\_NAME); data source (TITLE, AUTHORS, PUBLISHER, YEAR, etc), record-specific additional information (NOTES).

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: 4.0 (November 2016)

Data lineage: The following changes were made to reach version 4.0 of 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.

The attributes have also been updated to use ISO3 to represent respective countries, 'AREA\_HA' and 'AREA\_SQKM' as the standard units, and 'METADATAID' to refer to the data sources (outlined in the accompanying file geodatabase). Information regarding start and end dates of data collection were also added to the polygon dataset, where available.

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

Dataset ID: WCMC-013-014

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

**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 hawaiiiana*, *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.

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

**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:** UNEP World Conservation Monitoring Centre

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

**Name:** Dr. Steve Fletcher **Position:** Head of Programme

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

**E-mail:** [steve.fletcher@unep-wcmc.org](mailto:steve.fletcher@unep-wcmc.org)

**Web site:** [www.unep-wcmc.org](http://www.unep-wcmc.org)

Dataset ID: WCMC-013-014

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

Distribution format(s):	Vector (point; .shp), Vector (polygon; .shp)	Dataset size (uncompressed):	853 MB (polygons), 21 Mb (points)
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Webpage and/or download: <http://data.unep-wcmc.org/datasets/7>

Other webpage: <http://www.arcgis.com/home/item.html?id=36b176f90cd341429ccb1b9b1e9aceeb>

Web map service: [http://ec2-54-204-216-109.compute-1.amazonaws.com:6080/arcgis/rest/services/marine/WCMC\\_013\\_014\\_Seagrass/MapServer](http://ec2-54-204-216-109.compute-1.amazonaws.com:6080/arcgis/rest/services/marine/WCMC_013_014_Seagrass/MapServer)

Factsheet: <http://wcmc.io/seagrass>

Resolution, scale: 1:1,000,000

Reference system: WGS 1984

West bounding: -176.6

East bounding: 178.6

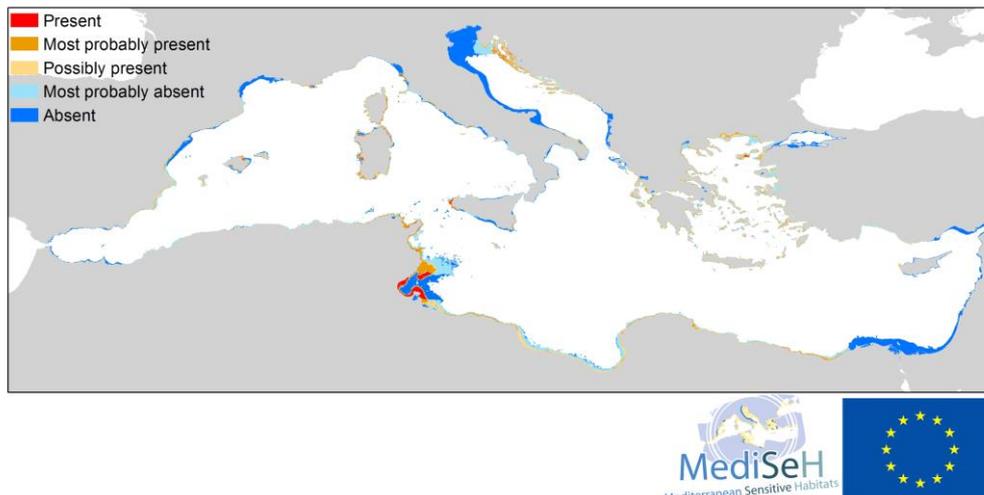
South bounding: -46.9

North bounding: 70.0

Metadata standard: UNEP-WCMC Specific

Date of metadata: 07/11/2016

## Modelled *Posidonia oceanica* Distribution (2013)



**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):** Giannoulaki M, Belluscio A, Colloca F, Fraschetti S, Scardi M, Smith C, Panayotidis P, Valavanis V, Spedicato MT (Eds.) (2013). Mediterranean Sensitive Habitats (MEDISEH), final project report. DG MARE Specific Contract SI2.600741. Heraklion (Greece): Hellenic Centre for Marine Research. 557 p. URL: <http://mareaproject.net/download/71> ; <http://www.emodnet-seabedhabitats.eu/default.aspx?page=1974>

**Other cited reference(s):**

Telesca L, Belluscio A, Criscoli A, Ardizzone G, Apostolaki ET, Fraschetti S, Gristina M, Knittweis L, Martin CS, Pergent G, Alagna A, Badalamenti F, Garofalo G, Gerakaris V, Pace ML, Pergent-Martini C, Salomidi M. Seagrass meadows (*Posidonia oceanica*) distribution and trajectories of change. *Scientific Reports* 5: 12505. URL: <http://www.nature.com/srep/2015/150728/srep12505/full/srep12505.html>

Scardi M, Martin CS, Valavanis V, Fraschetti S, Belluscio A, Gristina M, Salomidi M, Punzo E, Panayotidis P, Giannoulaki M (2013). Task 1.3. Modelling of protected habitats using predictor variables. In: Mediterranean Sensitive Habitats (MEDISEH), final project report (Eds. M Giannoulaki, A Belluscio, F Colloca, S Fraschetti, M Scardi, C Smith, P Panayotidis, V Valavanis, MT Spedicato). DG - MARE, specific contract SI2.600741. Heraklion (Greece): Hellenic Centre for Marine Research. 557 pp.

**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:**

**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.

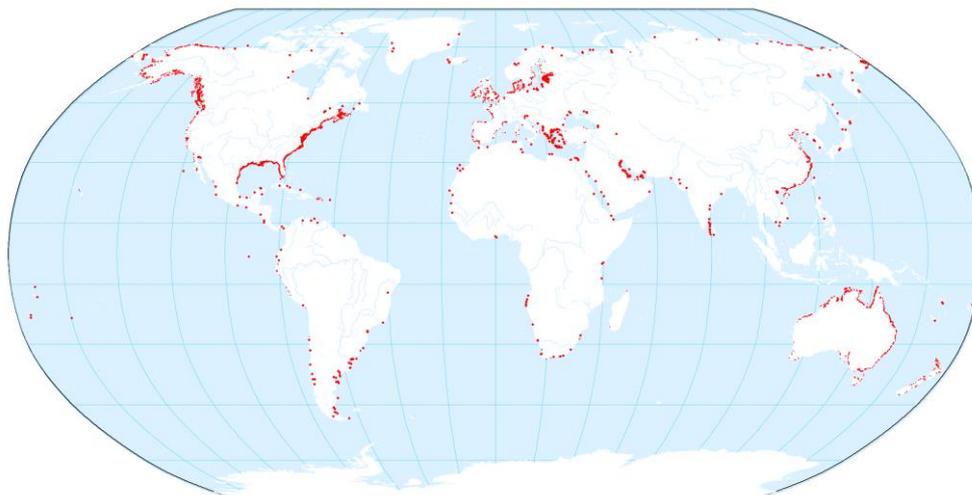
**Main access/use constraint:**

Unrestricted

**Other access/use constraints:**



## 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).
- Citation(s):** UNEP-WCMC, Conservation International, and The Nature Conservancy (2017). Global distribution of saltmarsh (ver. 4.0). Cambridge (UK): UNEP World Conservation Monitoring Centre. URL: <http://data.unep-wcmc.org/datasets/43>
- Temporal range:** 1973 - 2015
- Geographical range:** Global
- Supplementary information:** The dataset consists of one polygon layer, one point layer, and an accompanying Access database that contains species information (linked exclusively to the point dataset).

Polygon layer: ISO 3166 3 character code of country ("PARENT\_ISO"); ISO 3166 3 character code of country or territory where the saltmarsh is located ("ISO3"); region of data ("REGION"); habitat type recorded the original language ("HABITAT") and translated into English by UNEP-WCMC, if applicable ("HABTRANS"); code obtained from data provider, if available ("ORIG\_CODE"); area in square kilometres ("AREA\_SQKM") and hectares ("AREA\_HA") calculated using Mollweide equal-area projection; unique metadata ID ("METADATAID") linking to the data source table; approximate start and end dates of data collection, if documented ("START\_DATE" and "END\_DATE"); high-level method(s) used for data collection, if documented ("METHOD").

Point layer: location record ID number ("LOCRECID"), which links to the accompanying Access database; ISO 3166 3 character code of country ("PARENT\_ISO"); ISO 3166 3 character code of country or territory where the saltmarsh is located ("ISO3"); country (COUNTRY); region within the country (REGION); latitude ("LAT") and longitude ("LON") of mid-point; reported surface area in hectares ("REPORTAREA"); and comment ("COMMENT"; e.g., Ramsar site, bounding coordinates); metadata ID - incomplete ("METADATAID").

Metadata: source ID, to which multiple metadata IDs may be linked ("SOURCE\_ID"); metadata ID ("METADATAID"); title of dataset or project ("DATA\_TITLE"); responsible organisation, contact and e-mail ("RESP\_PARTY", "RESP\_PERS", and "RESP\_EMAIL"); language of the dataset ("LANGUAGE"); recommended citation

("CITATION"); type of remote sensing, if applicable ("RS\_TYPE"); whether the data are ground-truthed, if reported ("GRND\_TRUTH"); definition of saltmarsh, where available ("DEF\_SALTM"); data lineage ("LINEAGE"); data collection methodology ("METHOD"); year and month captured, if reported ("CAPT\_YR" and "CAPT\_MO"); data resolution and/or scale ("RESOLUTION" and "SCALE"); whether the data were peer-reviewed ("PEER\_REV"); data extent ("EXTENT"); data quality ("DATA\_QUAL"); original coordinate system ("Coord\_syst"); URL or paper DOI, if published in a peer-reviewed publication ("URL").

#### 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.biodiversityz.org/content/saltmarsh>.

#### Creation methodology:

The UNEP 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:

4.0 (January 2017)

#### Data lineage:

Version 4.0 of the "Global Distribution of Saltmarshes" was released in May 2016. 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.

This dataset supersedes three previous versions that 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

Dataset ID: WCMC-027

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 'LOCRECID' 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 "WCMC027\_Metadata\_v4" table and Excel spreadsheet ("Habitat translation").

**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.

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

**Other access/use constraints:** None

**Contact organisation:** UNEP World Conservation Monitoring Centre

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

**Name:** Dr. Steve Fletcher **Position:** Head of Programme

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

**E-mail:** [steve.fletcher@unep-wcmc.org](mailto:steve.fletcher@unep-wcmc.org)

**Web site:** [www.unep-wcmc.org](http://www.unep-wcmc.org)

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

Dataset ID: WCMC-027

Distribution format(s): Access database (.accdb), Vector (point; .shp), Vector (polygon; .shp) Dataset size (uncompressed): 2.11 GB

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

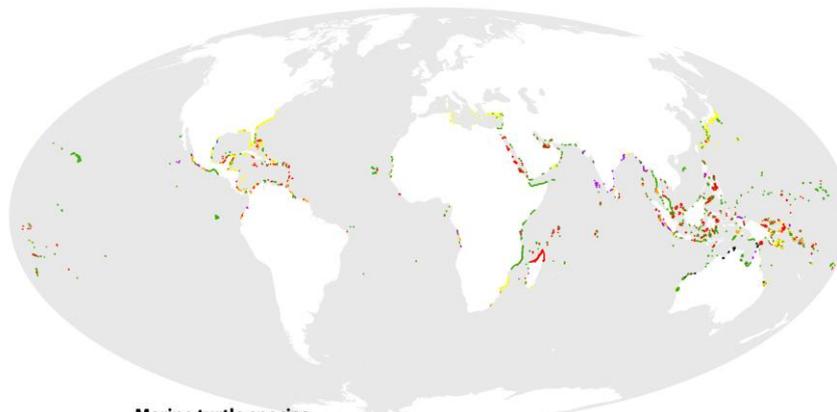
Other webpage: <http://www.arcgis.com/home/item.html?id=5e53621170494edab5a1970ffa61a313>

Web map service: [http://ec2-54-204-216-109.compute-1.amazonaws.com:6080/arcgis/rest/services/marine/WCMC027\\_Saltmarsh/MapServer](http://ec2-54-204-216-109.compute-1.amazonaws.com:6080/arcgis/rest/services/marine/WCMC027_Saltmarsh/MapServer)

Factsheet: <http://wcmc.io/saltmarsh>

Resolution, scale:	Between 1:10,000 to 1:4,00	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:	20/01/2016

## Global Distribution of Sea Turtle Nesting Sites (1999)



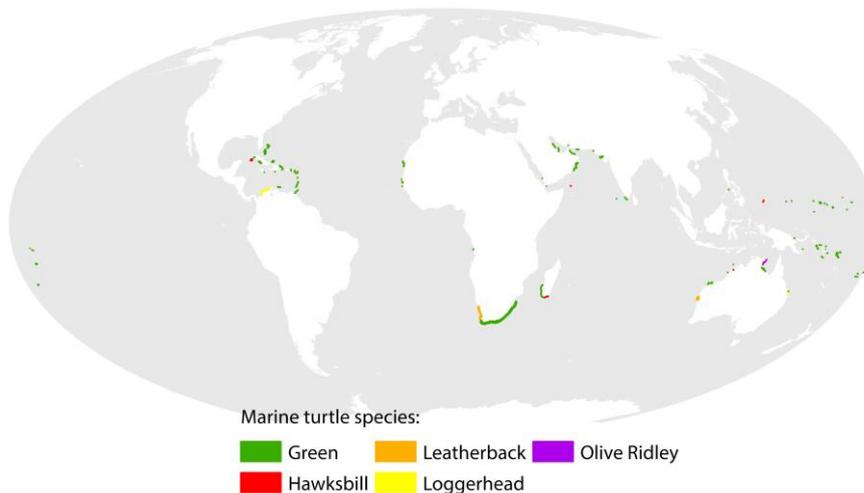
## Marine turtle species

— Flatback — Hawksbill — Leatherback — Olive Ridley  
 — Green — Kemp's Ridley — Loggerhead

<b>Description:</b>	This dataset shows the known locations of sea turtle nesting sites, for all seven species: hawksbill turtle ( <i>Eretmochelys imbricata</i> ), Kemp's ridley turtle ( <i>Lepidochelys kempii</i> ), leatherback turtle ( <i>Dermochelys coriacea</i> ), green turtle ( <i>Chelonia mydas</i> ), loggerhead turtle ( <i>Caretta caretta</i> ), olive ridley turtle ( <i>Lepidochelys olivacea</i> ), and flatback turtle ( <i>Natator depressus</i> ).
<b>Citation(s):</b>	UNEP-WCMC (1999). Global distribution of sea turtle nesting sites (version 1.1, updated by UNEP-WCMC). Cambridge (UK): UNEP World Conservation Monitoring Centre. URL: <a href="http://data.unep-wcmc.org/datasets/22">http://data.unep-wcmc.org/datasets/22</a>
<b>Temporal range:</b>	1949-1993
<b>Geographical range:</b>	Global
<b>Supplementary information:</b>	This dataset is the only 'line' dataset of observed nesting occurrence. The 'State of the World's Sea Turtles' (SWOT) database ( <a href="http://seamap.env.duke.edu/dataset/545">http://seamap.env.duke.edu/dataset/545</a> ) is a more up to date alternative source on nesting site locations (point data).  Attribute table: IUCN Red List threat status (REDLISTC; DD: data deficient, VU: vulnerable, EN: endangered, CR: critically endangered), assessment year (REDLYEAR).
<b>Purpose of creation:</b>	At the time of compilation, the dataset was the only global source of sea turtle nesting sites.
<b>Creation methodology:</b>	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.
<b>Version:</b>	1.1 (May 2015)
<b>Data lineage:</b>	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.
<b>Category:</b>	Species habitat



## 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*).

**Citation(s):** UNEP-WCMC (1999). Global distribution of sea turtle feeding sites (version 1.1). Cambridge (UK): UNEP World Conservation Monitoring Centre. URL: <http://data.unep-wcmc.org/datasets/21>

**Temporal range:** 1993

**Geographical range:** Global

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

Attribute table: IUCN Red List threat status (REDLISTC; DD: data deficient, VU: vulnerable, EN: endangered, CR: critically endangered), assessment year (REDLYEAR).

**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.

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

**Other access/use constraints:** None

**Contact organisation:** UNEP World Conservation Monitoring Centre

<b>Organisation type:</b>	<b>Owner</b>	<b>Acronym:</b>	UNEP-WCMC
<b>Name:</b>	Dr. Steve Fletcher	<b>Position:</b>	Head of Programme
<b>City:</b>	Cambridge	<b>Country:</b>	United Kingdom
<b>E-mail:</b>	<a href="mailto:steve.fletcher@unep-wcmc.org">steve.fletcher@unep-wcmc.org</a>		
<b>Web site:</b>	<a href="http://www.unep-wcmc.org">www.unep-wcmc.org</a>		
<b>Data format(s):</b>	Vector (polygon; .shp)		

<b>Distribution format(s):</b>	Vector (polygon; .shp)	<b>Dataset size (uncompressed):</b>	3 Mb
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**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:** [http://ec2-54-204-216-109.compute-1.amazonaws.com:6080/arcgis/rest/services/marine/WCMC\\_006\\_TurtleFeeding1999/MapServer](http://ec2-54-204-216-109.compute-1.amazonaws.com:6080/arcgis/rest/services/marine/WCMC_006_TurtleFeeding1999/MapServer)

#### Factsheet:

<b>Resolution, scale:</b>	Not applicable	<b>Reference system:</b>	WGS 1984
<b>West bounding:</b>	-175.4	<b>East bounding:</b>	180.0
<b>South bounding:</b>	-35.3	<b>North bounding:</b>	27.4
<b>Metadata standard:</b>	UNEP-WCMC Specific	<b>Date of metadata:</b>	17/08/2015

## Ocean Biogeographic Information System (OBIS)



- Description:** The Ocean Biogeographic Information System (OBIS; [www.iobis.org](http://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.
- 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)
- Other cited reference(s):  
 Grassle JF (2000) The Ocean Biogeographic Information System (OBIS): An on-line, worldwide atlas for accessing, modeling and mapping marine biological data in a multidimensional geographic context. *Oceanography* 13(3):5–7, <http://dx.doi.org/10.5670/oceanog.2000.01>
- Temporal range:** --
- Geographical range:** Global

Dataset ID: OBIS-003

**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

**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>.

For detailed disclaimer: <http://www.iobis.org/data/policy/disclaimer>.

**Maintenance frequency:** Data are updated a few times per year.

**Main access/use constraint:** OBIS Data Use Agreement (<http://www.iobis.org/node/639>).

Dataset ID: OBIS-003

Other access/use --  
constraints:

Contact organisation: 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](http://www.iobis.org)

Data format(s): Online database

Distribution format(s): Online database Dataset size (uncompressed): --

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

## 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:  
 <citation field information><year>. The IUCN Red List of Threatened Species. Version <Red List version>. <http://www.iucnredlist.org>. Downloaded on <insert appropriate date>.

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:  
 IUCN 2016. The IUCN Red List of Threatened Species. Version 2016-1. <http://www.iucnredlist.org>. Downloaded on <insert appropriate date>.

Other cited reference(s):

Brooks TM, Akçakaya HR, Burgess ND, Butchart SHM, Hilton-Taylor C, Hoffmann M, Juffe-Bignoli D, Kingston N, MacSharry B, Parr M, Perianin L, Regan EC, Rodrigues ASL, Rondinini C, Shennan-Farpon Y, and Young BE. (2016). Analysing biodiversity and conservation knowledge products to support regional environmental assessments. *Scientific Data* 3: 160007. doi:10.1038/sdata.2016.7.

**Temporal range:** --

**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/](http://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.

<b>Creation methodology:</b>	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).		
<b>Version:</b>	v5.1		
<b>Data lineage:</b>	These data are an update from previous versions.		
<b>Category:</b>	Species distribution		
<b>Keywords:</b>	marine, coastal, pelagic, benthic, high seas, deep sea, species, habitat, biodiversity		
<b>Similar datasets:</b>			
<b>Limitations:</b>	Please check on the IUCN Red List website "Spatial Resources" page for an updated version of the metadata: <a href="http://www.iucnredlist.org/technical-documents/red-list-training/iucnspatialresources">http://www.iucnredlist.org/technical-documents/red-list-training/iucnspatialresources</a> .		
<b>Maintenance frequency:</b>	Data are updated in intervals that are uneven in duration.		
<b>Main access/use constraint:</b>	IUCN Red List Terms and Conditions of Use (version 2.1). See <a href="http://www.iucnredlist.org/info/terms-of-use">http://www.iucnredlist.org/info/terms-of-use</a> for details.		
<b>Other access/use constraints:</b>	Datasets are freely available for non-commercial use according to published terms ( <a href="http://www.iucnredlist.org/info/terms-of-use">http://www.iucnredlist.org/info/terms-of-use</a> ), and under data licence for commercial use through IBAT ( <a href="https://www.ibatforbusiness.org/">https://www.ibatforbusiness.org/</a> ). 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, sub-licensing, 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.		
<b>Contact organisation:</b>	International Union for Conservation of Nature		
<b>Organisation type:</b>	Creator	Acronym:	IUCN
<b>Name:</b>		Position:	
<b>City:</b>		Country:	
<b>E-mail:</b>			
<b>Web site:</b>	<a href="http://www.iucn.org">www.iucn.org</a>		
<b>Data format(s):</b>	Vector (polygon; .shp)		

Dataset ID: IUCN-001

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

Dataset size (uncompressed):

Webpage and/or download: <http://www.iucnredlist.org>

Other webpage:

Web map service:

Factsheet: <http://www.iucnredlist.org/technical-documents/spatial-data>

Resolution, scale:

Reference system: WGS 1984

West bounding: -180.0

East bounding: 180.0

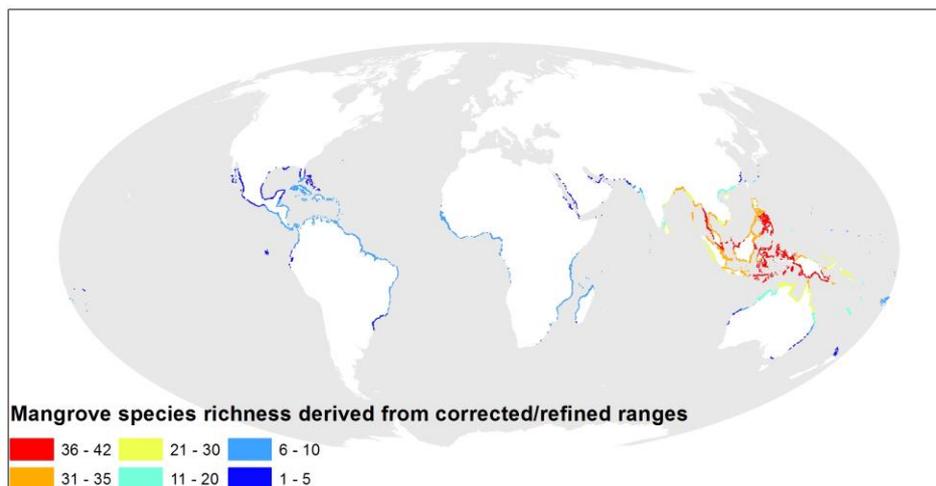
South bounding: -90.0

North bounding: 90.0

Metadata standard: UNEP-WCMC Specific

Date of metadata: 25/01/2017

## 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:

Giri C, Ochieng E, Tieszen LL, Zhu Z, Singh A, Loveland T, Masek J, Duke N (2011). Status and distribution of mangrove forests of the world using earth observation satellite data. *Global Ecology and Biogeography* 20: 154-159. URL: <http://onlinelibrary.wiley.com/doi/10.1111/j.1466-8238.2010.00584.x/abstract> ; <http://data.unep-wcmc.org/datasets/4>

IUCN (2014). IUCN Red List of Threatened Species. Version 2014.2. URL: [www.iucnredlist.org](http://www.iucnredlist.org)

Polidoro BA, Carpenter KE, Collins L, Duke NC, Ellison AM, et al. (2010) The Loss of Species: Mangrove Extinction Risk and Geographic Areas of Global Concern. *PLoS ONE* 5(4): e10095. doi:10.1371/journal.pone.0010095

**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-projecting 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](mailto:marine@unep-wcmc.org) in the first instance. Permission to access the data will require permission from both IUCN and UNEP-WCMC.

**Contact organisation:** UNEP World Conservation Monitoring Centre

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

**Name:** Dr. Steve Fletcher **Position:** Head of Programme

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

**E-mail:** [steve.fletcher@unep-wcmc.org](mailto:steve.fletcher@unep-wcmc.org)

**Web site:** [www.unep-wcmc.org](http://www.unep-wcmc.org)

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

Dataset ID: IUCN-002

Distribution format(s): File geodatabase (.fgdb)

Dataset size (uncompressed): 7.1 Gb

Webpage and/or download: [marine@unep-wcmc.org](mailto:marine@unep-wcmc.org)

Other webpage:

Web map service:

Factsheet: <http://wcmc.io/mangroves>

Resolution, scale: --

West bounding: -180.0

South bounding: -38.8

Metadata standard: UNEP-WCMC Specific

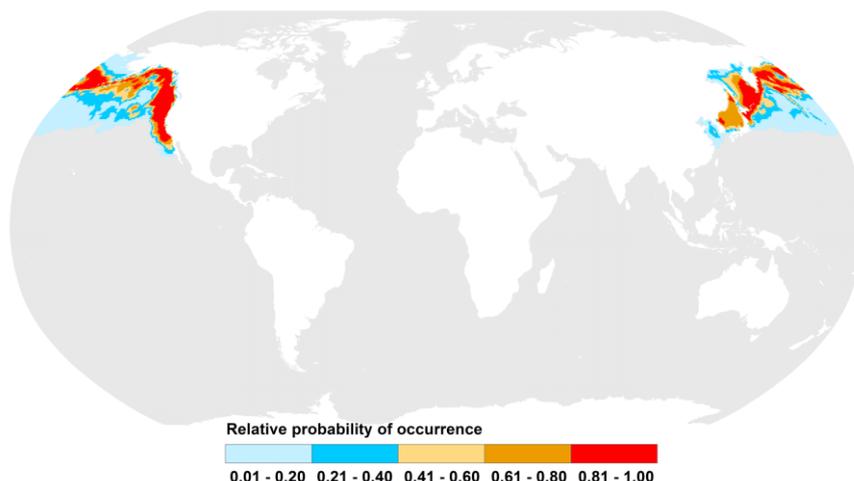
Reference system: WGS 1984

East bounding: 180.0

North bounding: 32.4

Date of metadata: 05/08/2015

## Global Distribution of Northern Fur Seals (2013)



**Description:** This dataset shows the modelled distribution of Northern fur seals (*Callorhinus ursinus*). AquaMaps ([www.aquamaps.org](http://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).

**Citation(s):** Kaschner K, Rius-Barile J, Kesner-Reyes K, Garilao C, Kullander SO, Rees T, Froese R (2013). AquaMaps: Predicted range maps for aquatic species. World wide web electronic publication: [www.aquamaps.org](http://www.aquamaps.org), Version August 2013

**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  $\geq 0.4$  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 (GBIF; [www.gbif.org](http://www.gbif.org)). These were supplemented by additional information obtained

through online species databases such as FishBase ([www.fishbase.org](http://www.fishbase.org)) and SeaLifeBase ([www.Sealifebase.org](http://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.

Environmental dataset used: HCAF version 5 (August 2013; [www.aquamaps.org/envtdata/main.php](http://www.aquamaps.org/envtdata/main.php)).

**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](http://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".

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.

**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:** 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](mailto: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): 723 Kb

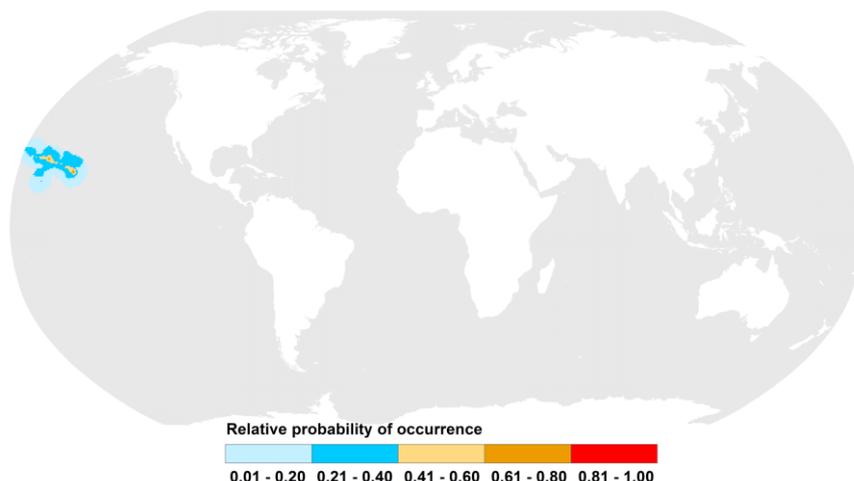
Webpage and/or download: <http://www.aquamaps.org>  
Other webpage: <http://data.unep-wcmc.org/datasets/35>

Web map service:

Factsheet:

Resolution, scale:	0.5 dd	Reference system:	WGS 1984
West bounding:	-100.0	East bounding:	100.0
South bounding:	0.0	North bounding:	90.0
Metadata standard:	UNEP-WCMC Specific	Date of metadata:	29/05/2015

## Global Distribution of Hawaiian Monk Seals (2013)



- Description:** This dataset shows the modelled distribution of Hawaiian monk seals (*Monachus schauinslandi*). AquaMaps ([www.aquamaps.org](http://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).
- Citation(s):** Kaschner K, Rius-Barile J, Kesner-Reyes K, Garilao C, Kullander SO, Rees T, Froese R (2013). AquaMaps: Predicted range maps for aquatic species. World wide web electronic publication: [www.aquamaps.org](http://www.aquamaps.org), Version August 2013
- 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  $\geq 0.4$  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](http://www.gbif.org)). These were supplemented by additional information obtained

through online species databases such as FishBase ([www.fishbase.org](http://www.fishbase.org)) and SeaLifeBase ([www.Sealifebase.org](http://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.

Environmental dataset used: HCAF version 5 (August 2013; [www.aquamaps.org/envtdata/main.php](http://www.aquamaps.org/envtdata/main.php)).

**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](http://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.

**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:** 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](mailto:business-support@unep-wcmc.org).

Dataset ID: Kaschner-002

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](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): 90 Kb

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

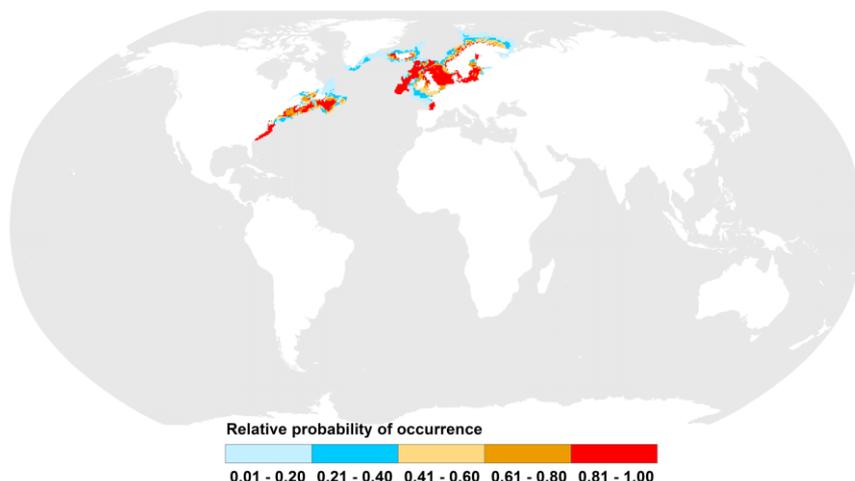
Other webpage: <http://data.unep-wcmc.org/datasets/34>

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](http://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).

**Citation(s):** Kaschner K, Rius-Barile J, Kesner-Reyes K, Garilao C, Kullander SO, Rees T, Froese R (2013). AquaMaps: Predicted range maps for aquatic species. World wide web electronic publication: [www.aquamaps.org](http://www.aquamaps.org), Version August 2013

**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  $\geq 0.4$  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](http://www.gbif.org)). These were supplemented by additional information obtained through online species databases such as FishBase ([www.fishbase.org](http://www.fishbase.org)) and

SeaLifeBase ([www.Sealifebase.org](http://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.

Environmental dataset used: HCAF version 5 (August 2013; [www.aquamaps.org/envtdata/main.php](http://www.aquamaps.org/envtdata/main.php)).

**Category:** Species distribution

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

**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](http://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](mailto: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](mailto:Kristin.Kaschner@biologie.uni-freiburg.de)

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

Dataset ID: Kaschner-003

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>

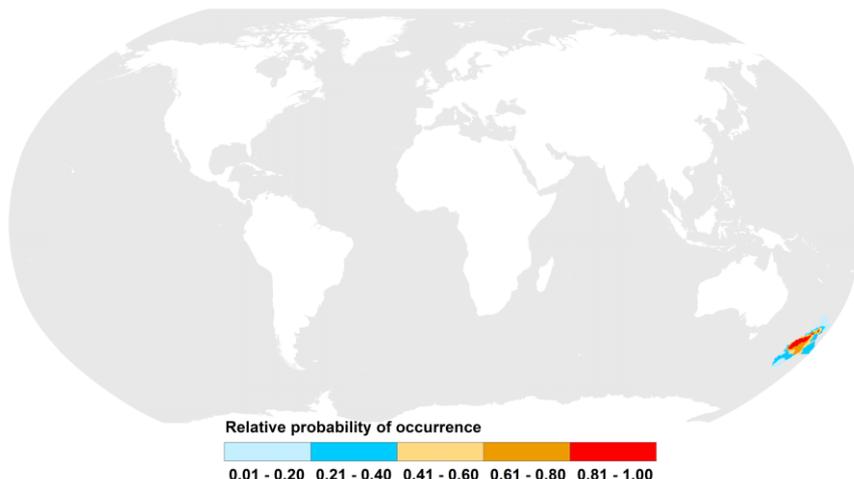
Other webpage: <http://data.unep-wcmc.org/datasets/33>

Web map service:

Factsheet:

Resolution, scale:	0.5 dd	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 Hector's Dolphins (2013)



**Description:** This dataset shows the modelled distribution of Hector's dolphins (*Cephalorhynchus hectori*). AquaMaps ([www.aquamaps.org](http://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).

**Citation(s):** Kaschner K, Rius-Barile J, Kesner-Reyes K, Garilao C, Kullander SO, Rees T, Froese R (2013). AquaMaps: Predicted range maps for aquatic species. World wide web electronic publication: [www.aquamaps.org](http://www.aquamaps.org), Version August 2013

**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](http://www.gbif.org)). These were supplemented by additional information obtained through online species databases such as FishBase ([www.fishbase.org](http://www.fishbase.org)) and SeaLifeBase ([www.Sealifebase.org](http://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.

Environmental dataset used: HCAF version 5 (August 2013; [www.aquamaps.org/envtdata/main.php](http://www.aquamaps.org/envtdata/main.php)).

**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](http://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.

**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:** 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](mailto:business-support@unep-wcmc.org).

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

**Organisation type:** Owner Acronym:

**Name:** Dr. Kristin Kaschner **Position:** Research Affiliate

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Dataset ID: Kaschner-004

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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): 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

Reference system: WGS 1984

West bounding: 160.0

East bounding: 180.0

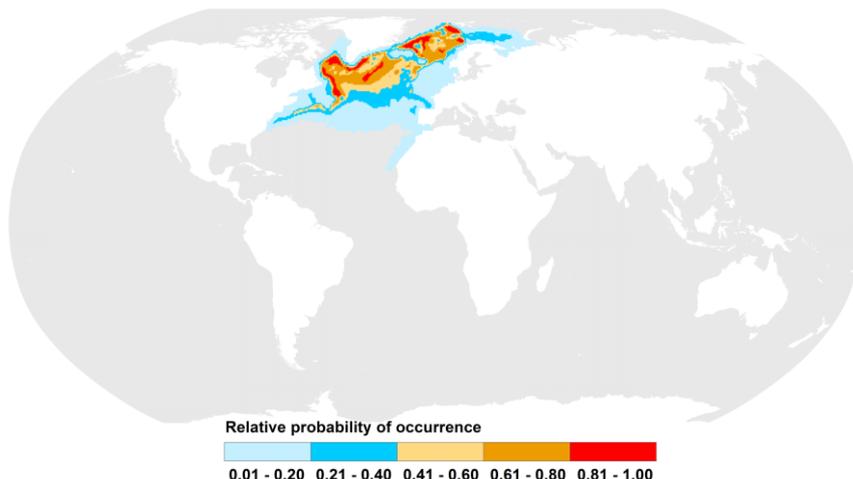
South bounding: -90.0

North bounding: 0.0

Metadata standard: UNEP-WCMC Specific

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](http://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).

**Citation(s):** Kaschner K, Rius-Barile J, Kesner-Reyes K, Garilao C, Kullander SO, Rees T, Froese R (2013). AquaMaps: Predicted range maps for aquatic species. World wide web electronic publication: [www.aquamaps.org](http://www.aquamaps.org), Version August 2013

**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  $\geq 0.4$  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 (142 cells; FAO areas: 21, 27, 31, 34, 37, 41) were obtained (August 2013) from the Global Biodiversity Information Facility (GBIF; [www.gbif.org](http://www.gbif.org)). These were supplemented by additional information obtained

through online species databases such as FishBase ([www.fishbase.org](http://www.fishbase.org)) and SeaLifeBase ([www.Sealifebase.org](http://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.

Environmental dataset used: HCAF version 5 (August 2013; [www.aquamaps.org/envtdata/main.php](http://www.aquamaps.org/envtdata/main.php)).

**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](http://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.

**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:** 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](mailto:business-support@unep-wcmc.org).

Dataset ID: Kaschner-005

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): 872 Kb

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

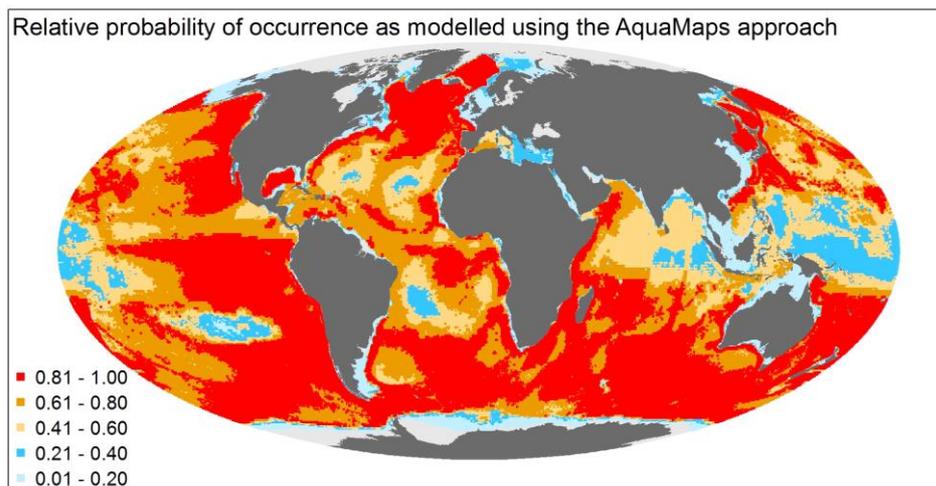
Other webpage: <http://data.unep-wcmc.org/datasets/29>

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 Sperm Whales (2013)



**Description:** This dataset shows the modelled distribution of sperm whales (*Physeter macrocephalus*). AquaMaps ([www.aquamaps.org](http://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).

**Citation(s):** Kaschner K, Rius-Barile J, Kesner-Reyes K, Garilao C, Kullander SO, Rees T, Froese R (2013). AquaMaps: Predicted range maps for aquatic species. World wide web electronic publication: [www.aquamaps.org](http://www.aquamaps.org), Version August 2013

**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  $\geq 0.4$  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](http://www.gbif.org)). These were

supplemented by additional information obtained through online species databases such as FishBase ([www.fishbase.org](http://www.fishbase.org)) and SeaLifeBase ([www.Sealifebase.org](http://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.

Environmental dataset used: HCAF version 5 (August 2013; [www.aquamaps.org/envtdata/main.php](http://www.aquamaps.org/envtdata/main.php)).

**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](http://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.

**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:** 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](mailto:business-support@unep-wcmc.org).

Dataset ID: Kaschner-006

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): 872 Kb

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

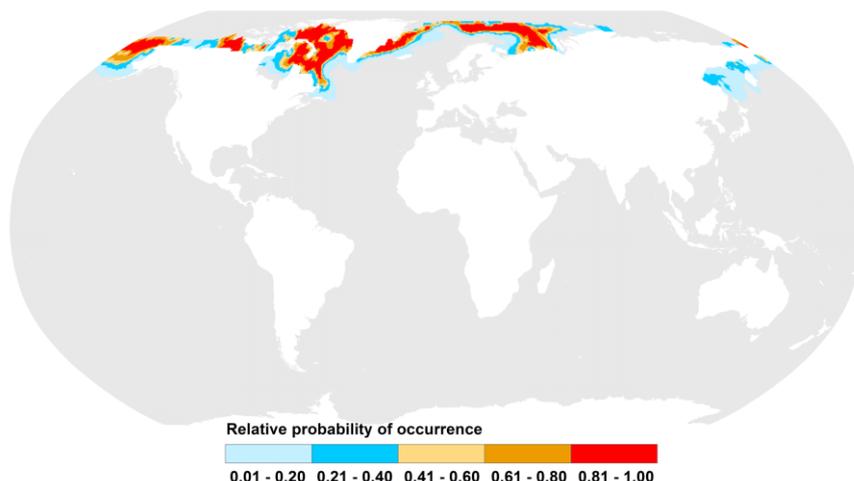
Other webpage: <http://data.unep-wcmc.org/datasets/10>

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 Bowhead Whales (2013)



<b>Description:</b>	This dataset shows the modelled distribution of bowhead whales ( <i>Balaena mysticetus</i> ). AquaMaps ( <a href="http://www.aquamaps.org">www.aquamaps.org</a> ) 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).
<b>Citation(s):</b>	Kaschner K, Rius-Barile J, Kesner-Reyes K, Garilao C, Kullander SO, Rees T, Froese R (2013). AquaMaps: Predicted range maps for aquatic species. World wide web electronic publication: <a href="http://www.aquamaps.org">www.aquamaps.org</a> , Version August 2013
<b>Temporal range:</b>	2013
<b>Geographical range:</b>	Global
<b>Supplementary information:</b>	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 <a href="http://www.cmar.csiro.au/csquares/about-csquares.htm">http://www.cmar.csiro.au/csquares/about-csquares.htm</a> 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 $\geq 0.2$ 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. <i>Nature Communications</i> 4: 1677
<b>Purpose of creation:</b>	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.

<b>Creation methodology:</b>	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; <a href="http://www.gbif.org">www.gbif.org</a> ). These were supplemented by additional information obtained through online species databases such as FishBase ( <a href="http://www.fishbase.org">www.fishbase.org</a> ) and SeaLifeBase ( <a href="http://www.Sealifebase.org">www.Sealifebase.org</a> ), 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).
<b>Version:</b>	1.0 (August 2013)
<b>Data lineage:</b>	<p>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.</p> <p>Environmental dataset used: HCAF version 5 (August 2013; <a href="http://www.aquamaps.org/envtdata/main.php">www.aquamaps.org/envtdata/main.php</a>).</p>
<b>Category:</b>	Species distribution
<b>Keywords:</b>	marine, coastal, model, pelagic, high seas, deep sea
<b>Similar datasets:</b>	None
<b>Limitations:</b>	<p>Excluded from the model: species misidentifications, fossil records and outliers.</p> <p>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 <a href="http://www.aquamaps.org/rating.html">www.aquamaps.org/rating.html</a> 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 were 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. <i>Marine Policy</i> 44: 375-389</p>
<b>Maintenance frequency:</b>	Data are updated in intervals that are uneven in duration.
<b>Main access/use constraint:</b>	Creative Commons Attribution-NonCommercial 3.0 Unported (CC BY-NC 3.0). See <a href="http://creativecommons.org/licenses/by-nc/3.0/">http://creativecommons.org/licenses/by-nc/3.0/</a> 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:** 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](mailto: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](mailto: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>

**Other webpage:** <http://data.unep-wcmc.org/datasets/28>

**Web map service:**

**Factsheet:**

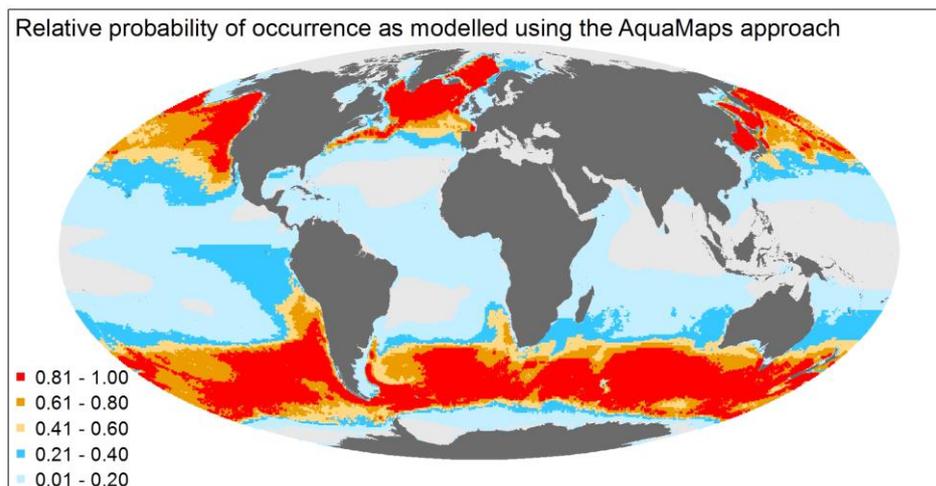
**Resolution, scale:** 0.5 dd **Reference system:** WGS 1984

**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)



<b>Description:</b>	This dataset shows the modelled distribution of sei whales ( <i>Balaenoptera borealis</i> ). AquaMaps ( <a href="http://www.aquamaps.org">www.aquamaps.org</a> ) 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).
<b>Citation(s):</b>	Kaschner K, Rius-Barile J, Kesner-Reyes K, Garilao C, Kullander SO, Rees T, Froese R (2013). AquaMaps: Predicted range maps for aquatic species. World wide web electronic publication: <a href="http://www.aquamaps.org">www.aquamaps.org</a> , Version August 2013
<b>Temporal range:</b>	2013
<b>Geographical range:</b>	Global
<b>Supplementary information:</b>	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 <a href="http://www.cmar.csiro.au/csquares/about-csquares.htm">http://www.cmar.csiro.au/csquares/about-csquares.htm</a> 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  $\geq 0.4$  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.

<b>Purpose of creation:</b>	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.
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<b>Creation methodology:</b>	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; <a href="http://www.gbif.org">www.gbif.org</a> ). These were
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supplemented by additional information obtained through online species databases such as FishBase ([www.fishbase.org](http://www.fishbase.org)) and SeaLifeBase ([www.Sealifebase.org](http://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.

Environmental dataset used: HCAF version 5 (August 2013; [www.aquamaps.org/envtdata/main.php](http://www.aquamaps.org/envtdata/main.php)).

**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](http://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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**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-009

For commercial use, please contact [business-support@unep-wcmc.org](mailto:business-support@unep-wcmc.org).

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Organisation type: Owner Acronym:

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City: Freiburg Country: Germany

E-mail: [Kristin.Kaschner@biologie.uni-freiburg.de](mailto: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): 10.2 Mb

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

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

Web map service:

Factsheet:

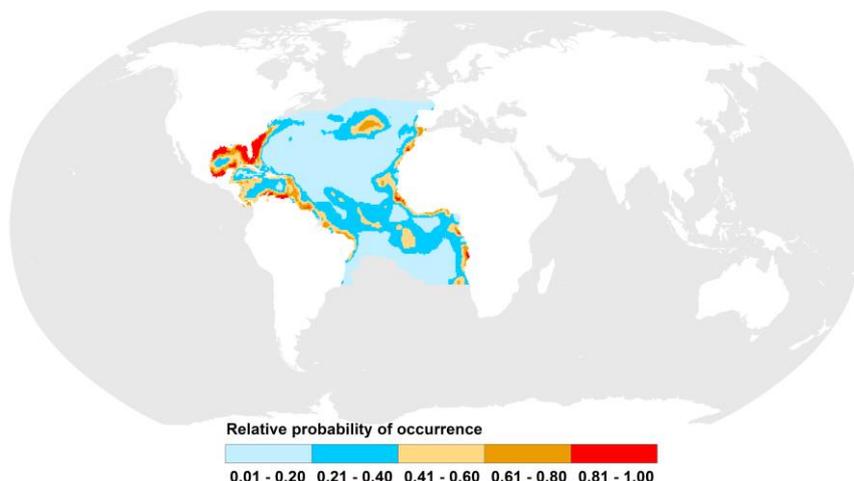
Resolution, scale: 0.5 dd Reference system: WGS 1984

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 Atlantic Spotted Dolphins (2013)



- Description:** This dataset shows the modelled distribution of Atlantic spotted dolphins (*Stenella frontalis*). AquaMaps ([www.aquamaps.org](http://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).
- Citation(s):** Kaschner K, Rius-Barile J, Kesner-Reyes K, Garilao C, Kullander SO, Rees T, Froese R (2013). AquaMaps: Predicted range maps for aquatic species. World wide web electronic publication: [www.aquamaps.org](http://www.aquamaps.org), Version August 2013
- 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  $\geq 0.6$  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 (GBIF; [www.gbif.org](http://www.gbif.org)). These were supplemented by additional information obtained

through online species databases such as FishBase ([www.fishbase.org](http://www.fishbase.org)) and SeaLifeBase ([www.Sealifebase.org](http://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.

Environmental dataset used: HCAF version 5 (August 2013; [www.aquamaps.org/envtdata/main.php](http://www.aquamaps.org/envtdata/main.php)).

**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](http://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](mailto:business-support@unep-wcmc.org).

Dataset ID: Kaschner-011

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): 1.1 Mb

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

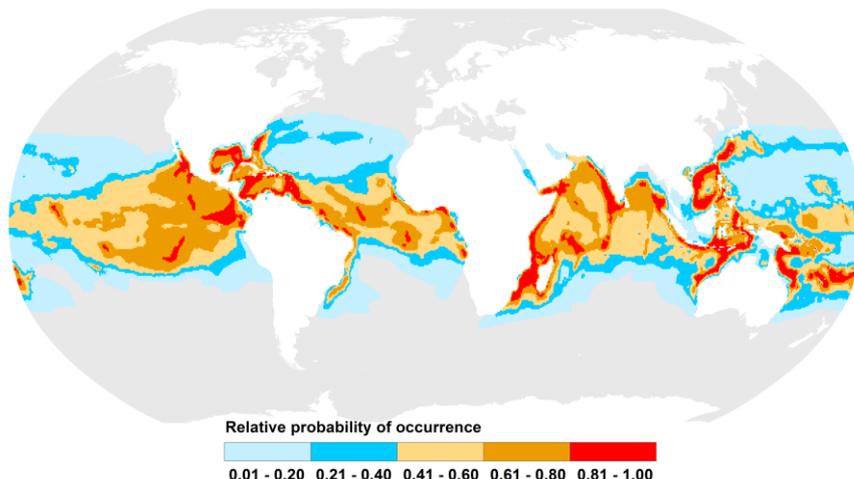
Other webpage: <http://data.unep-wcmc.org/datasets/30>

Web map service:

Factsheet:

Resolution, scale:	0.5 dd	Reference system:	WGS 1984
West bounding:	-180.0	East bounding:	18.0
South bounding:	-21.0	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](http://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).
- Citation(s):** Kaschner K, Rius-Barile J, Kesner-Reyes K, Garilao C, Kullander SO, Rees T, Froese R (2013). AquaMaps: Predicted range maps for aquatic species. World wide web electronic publication: [www.aquamaps.org](http://www.aquamaps.org), Version August 2013
- 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  $\geq 0.4$  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](http://www.gbif.org)). These were supplemented by additional information obtained through online species databases such as FishBase ([www.fishbase.org](http://www.fishbase.org)) and SeaLifeBase ([www.Sealifebase.org](http://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.

Environmental dataset used: HCAF version 5 (August 2013; [www.aquamaps.org/envtdata/main.php](http://www.aquamaps.org/envtdata/main.php)).

**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](http://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](mailto:business-support@unep-wcmc.org).

Dataset ID: Kaschner-012

Contact organisation: Albert-Ludwigs-University of Freiburg

Organisation type: Owner Acronym:

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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): 4.4 Mb

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

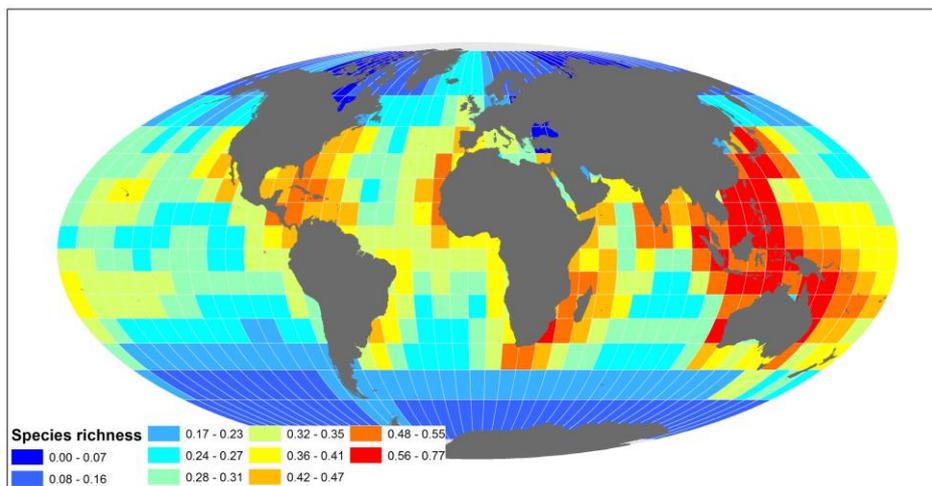
Other webpage: <http://data.unep-wcmc.org/datasets/31>

Web map service:

Factsheet:

Resolution, scale:	0.5 dd	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 Patterns of Marine Biodiversity (2010)



**Description:** 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-latitude 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):** Tittensor DP, Mora C, Jetz W, Lotze HK, Ricard D, Vanden Berghe E, Worm B (2010). Global patterns and predictors of marine biodiversity across taxa. *Nature* 466: 1098-1101. URL: [www.nature.com/nature/journal/v466/n7310/full/nature09329.html](http://www.nature.com/nature/journal/v466/n7310/full/nature09329.html), <http://data.unep-wcmc.org/datasets/17>

**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 (X\_COORD); latitude of the cell mid-point (Y\_COORD); 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 (X\_COORD); latitude of the cell mid-point (Y\_COORD); 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 (TunaBillfish); 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](http://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:**

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**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 License (excluding WDPA). See [www.unep-wcmc.org/policies/general-data-license-excluding-wdpa#data\\_policy](http://www.unep-wcmc.org/policies/general-data-license-excluding-wdpa#data_policy) and [www.unep-wcmc.org/policies](http://www.unep-wcmc.org/policies). For commercial use, please contact [business-support@unep-wcmc.org](mailto: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-taxa), 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: UNEP World Conservation Monitoring Centre

Organisation type:	Owner	Acronym:	UNEP-WCMC
Name:	Dr. Derek Tittensor	Position:	Senior Marine Scientist
City:	Cambridge	Country:	United Kingdom
E-mail:	derek.tittensor@unep-wcmc.org		
Web site:	<a href="http://www.unep-wcmc.org">www.unep-wcmc.org</a>		
Data format(s):	Vector (polygon; .shp)		

Distribution format(s):	Vector (polygon; .shp)	Dataset size (uncompressed):	1.04 MB
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Webpage and/or download: <http://data.unep-wcmc.org/datasets/17>

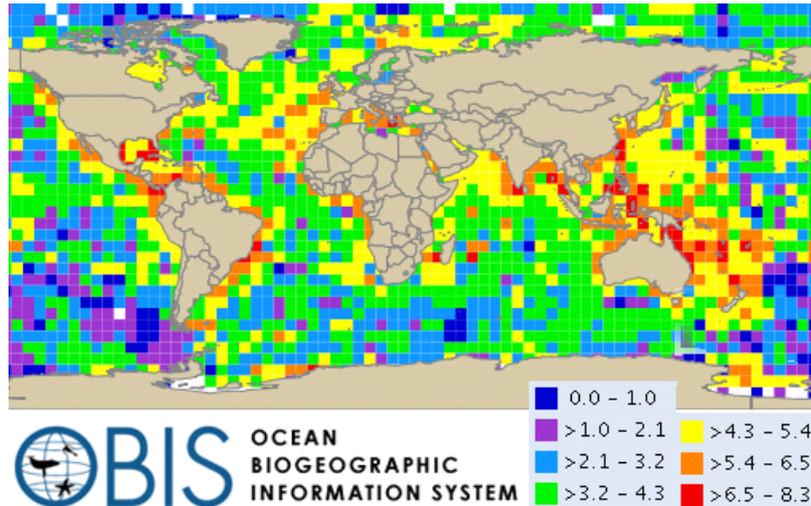
Other webpage: <http://www.arcgis.com/home/item.html?id=0118186f2e144cb38579e477e10e2221>

Web map service: [http://ec2-54-204-216-109.compute-1.amazonaws.com:6080/arcgis/rest/services/marine/WCMC\\_019\\_PatternsBiodiversity2010/MapServer](http://ec2-54-204-216-109.compute-1.amazonaws.com:6080/arcgis/rest/services/marine/WCMC_019_PatternsBiodiversity2010/MapServer)

Factsheet:

Resolution, scale:	880 km	Reference system:	WGS 1984
West bounding:	-180.0	East bounding:	180.0
South bounding:	-74.8	North bounding:	81.8
Metadata standard:	UNEP-WCMC Specific	Date of metadata:	09/06/2015

### 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](http://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](http://www.coml.org)), and is the marine sister-network of the Global Biodiversity Information Facility (GBIF; [www.gbif.org](http://www.gbif.org)), and the biodiversity data management component of the Intergovernmental Oceanographic Commission (IOC; <http://ioc-unesco.org/>).

**Citation(s):** Ocean Biogeographic Information System (OBIS) (2014). Global map of Shannon's index of biodiversity. Oostende (Belgium): Intergovernmental Oceanographic Commission (IOC) of the United Nations Educational, Scientific and Cultural Organization (UNESCO). URLs: [www.iobis.org/node/214](http://www.iobis.org/node/214), <http://data.unep-wcmc.org/datasets/15>

**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.

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](http://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](http://www.iobis.org/data/policy/disclaimer). Data and maps must be cited as per [www.iobis.org/about/citation](http://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](mailto:w.appeltans@unesco.org)

Web site: [www.iobis.org](http://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](http://www.iobis.org/node/214)

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

#### Factsheet:

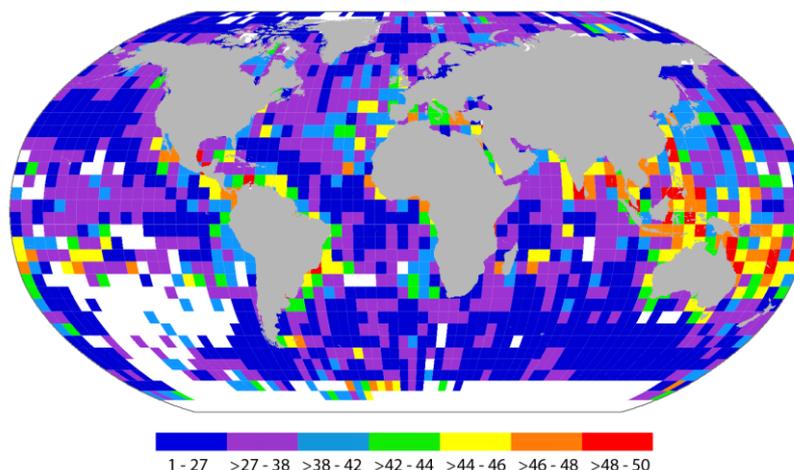
Resolution, scale: 1 dd      Reference system: WGS 1984

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 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](http://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](http://www.coml.org)), and is the marine sister-network of the Global Biodiversity Information Facility (GBIF; [www.gbif.org](http://www.gbif.org)), and the biodiversity data management component of the Intergovernmental Oceanographic Commission (IOC; <http://ioc-unesco.org/>).

**Citation(s):** Ocean Biogeographic Information System (OBIS) (2014). Global map of Hurlbert's index of biodiversity. Oostende (Belgium): Intergovernmental Oceanographic Commission (IOC) of the United Nations Educational, Scientific and Cultural Organization (UNESCO). URLs: [www.iobis.org/node/214](http://www.iobis.org/node/214), <http://data.unep-wcmc.org/datasets/16>

**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](http://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](http://www.iobis.org/data/policy/disclaimer). Data and maps must be cited as per [www.iobis.org/about/citation](http://www.iobis.org/about/citation).

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

<b>Organisation type:</b>	Resource provider	<b>Acronym:</b>	OBIS, IOC
<b>Name:</b>	Mr Ward Appeltans	<b>Position:</b>	Project Manager
<b>City:</b>	Oostende	<b>Country:</b>	Belgium
<b>E-mail:</b>	w.appeltans@unesco.org		
<b>Web site:</b>	<a href="http://www.iobis.org">www.iobis.org</a>		

**Data format(s):** Web map service

<b>Distribution format(s):</b>	Web map service	<b>Dataset size (uncompressed):</b>	Not applicable
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**Webpage and/or download:** <http://data.unep-wcmc.org/datasets/16>

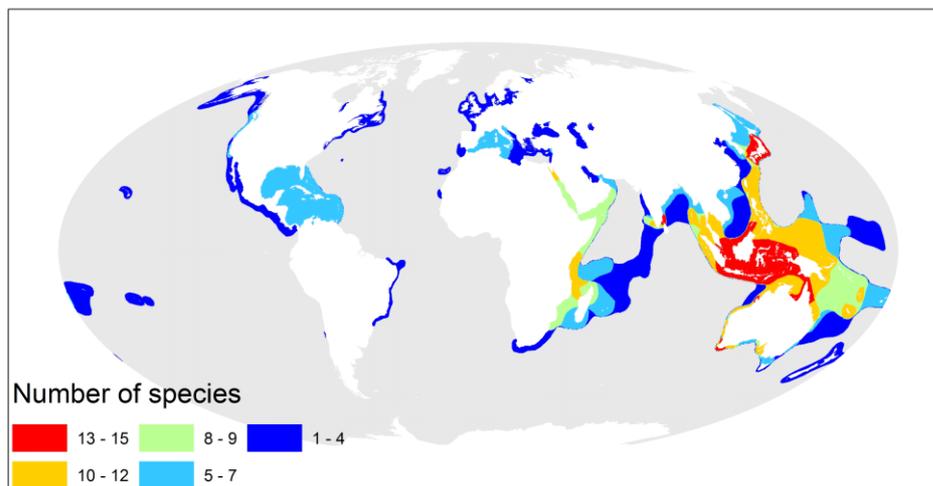
**Other webpage:** [www.iobis.org/node/214](http://www.iobis.org/node/214)

**Web map service:** <http://iobis.org/geoserver/wms>

#### Factsheet:

<b>Resolution, scale:</b>	1 dd	<b>Reference system:</b>	WGS 1984
<b>West bounding:</b>	-180.0	<b>East bounding:</b>	180.0
<b>South bounding:</b>	-90.0	<b>North bounding:</b>	90.0
<b>Metadata standard:</b>	UNEP-WCMC Specific	<b>Date of metadata:</b>	03/11/2015

## Global Seagrass Species Richness (2003)



<b>Description:</b>	This dataset shows the global distribution of seagrass species richness, or global seagrass biodiversity.
<b>Citation(s):</b>	Green EP, Short FT (2003). World atlas of seagrasses. Prepared by UNEP World Conservation Monitoring Centre. Berkeley (California, USA): University of California. 332 pp. URL: <a href="https://archive.org/details/worldatlasofseag03gree">https://archive.org/details/worldatlasofseag03gree</a> ; <a href="http://data.unep-wcmc.org/datasets/9">http://data.unep-wcmc.org/datasets/9</a>
<b>Temporal range:</b>	2003
<b>Geographical range:</b>	Global
<b>Supplementary information:</b>	Attribute table: number of seagrass species (gridcode).
<b>Purpose of creation:</b>	
<b>Creation methodology:</b>	The ranges of individual seagrass species were combined so as to produce a layer showing the number of species present in given areas.
<b>Version:</b>	1.0
<b>Data lineage:</b>	
<b>Category:</b>	Biodiversity metric
<b>Keywords:</b>	coastal, marine, blue carbon, seagrass, habitat, biodiversity, species richness
<b>Similar datasets:</b>	WCMC-013-014
<b>Limitations:</b>	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.
<b>Maintenance frequency:</b>	Data are not being updated.
<b>Main access/use constraint:</b>	UNEP-WCMC General Data License (excluding WDPA). See <a href="http://www.unep-wcmc.org/policies/general-data-license-excluding-wdpa#data_policy">www.unep-wcmc.org/policies/general-data-license-excluding-wdpa#data_policy</a> and <a href="http://www.unep-wcmc.org/policies">www.unep-wcmc.org/policies</a> . For commercial use, please contact <a href="mailto:business-support@unep-wcmc.org">business-support@unep-wcmc.org</a> .

Dataset ID: WCMC-015

Other access/use constraints: None

Contact organisation: UNEP World Conservation Monitoring Centre

Organisation type: Custodian Acronym: UNEP-WCMC

Name: Dr. Steve Fletcher Position: Head of Programme

City: Cambridge Country: United Kingdom

E-mail: [steve.fletcher@unep-wcmc.org](mailto:steve.fletcher@unep-wcmc.org)

Web site: [www.unep-wcmc.org](http://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>

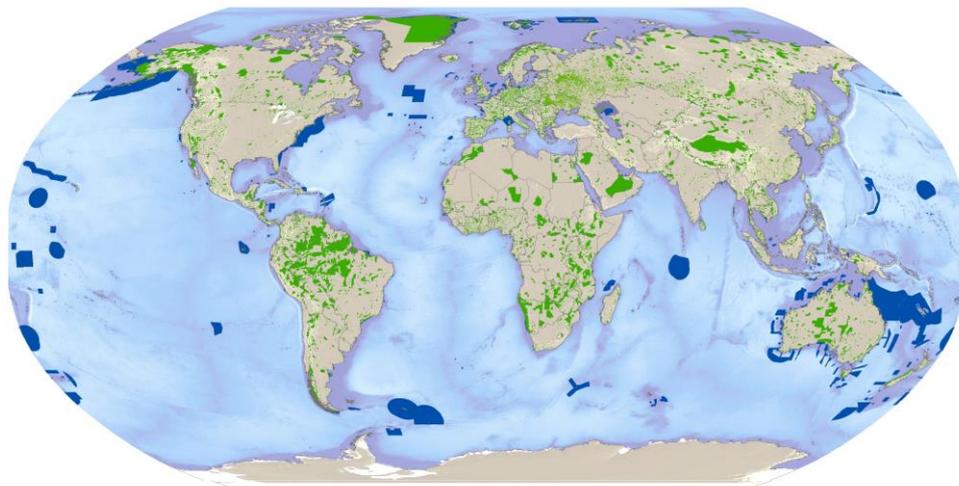
Other webpage: <http://www.arcgis.com/home/item.html?id=602b6f6acb674774925f47e6fb2a61bd>

Web map service: [http://downloads.wdpa.org/ArcGIS/rest/services/ocean\\_data\\_viewer/seagrass\\_diversity/MapServer](http://downloads.wdpa.org/ArcGIS/rest/services/ocean_data_viewer/seagrass_diversity/MapServer)

#### Factsheet:

Resolution, scale:	Not applicable	Reference system:	WGS 1984
West bounding:	-180.0	East bounding:	180.0
South bounding:	-48.7	North bounding:	67.4
Metadata standard:	UNEP-WCMC Specific	Date of metadata:	14/09/2015

## 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):** IUCN and UNEP-WCMC [year]. The World Database on Protected Areas (WDPA). [Insert month/year of the version downloaded]. Cambridge (UK): UNEP World Conservation Monitoring Centre. Available at: [www.protectedplanet.net](http://www.protectedplanet.net)

**Other cited reference(s):**

UNEP-WCMC (2015). World Database on Protected Areas User Manual 1.0. UNEP-WCMC: Cambridge, UK

Juffe-Bignoli, D, et al. (2014). Protected Planet Report 2014. Cambridge (UK): UNEP World Conservation Monitoring Centre

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)

UNEP-WCMC (2014) Global statistics from the World Database on Protected Areas (WDPA), August 2014. Cambridge (UK): UNEP World Conservation Monitoring Centre.

Deguignet et al. (2014). United Nations List of Protected Areas. Cambridge (UK): UNEP World Conservation Monitoring Centre.

**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](http://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](http://www.unep-wcmc.org/policies/wdpa-data-licence#data_policy) and [www.unep-wcmc.org/policies](http://www.unep-wcmc.org/policies). For commercial use, please contact [business-support@unep-wcmc.org](mailto:business-support@unep-wcmc.org).

**Other access/use constraints:** None

**Contact organisation:** UNEP 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](mailto:protectedareas@unep-wcmc.org)

**Web site:** [www.unep-wcmc.org](http://www.unep-wcmc.org)

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

**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/>

Dataset ID: WCMC-016

Other webpage: <http://data.unep-wcmc.org/datasets/12>

Web map service: <http://ec2-54-204-216-109.compute-1.amazonaws.com:6080/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

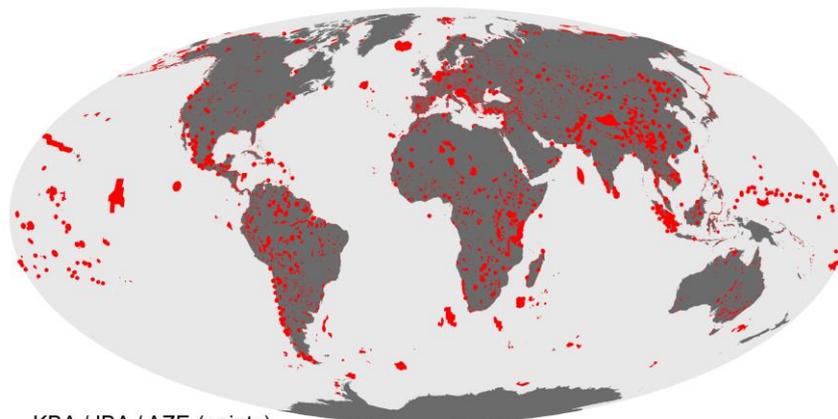
South bounding: -90.0

North bounding: 90.0

Metadata standard: UNEP-WCMC Specific

Date of metadata: 29/05/2015

## Global Distribution of KBAs, IBAs and AZEs



- KBA / IBA / AZE (points)
- KBA / IBA / AZE (polygons)

**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](http://www.birdlife.org)

Other cited references:

IUCN (2016) A global standard for the identification of Key Biodiversity Areas, version 1.0. First edition. Gland (Switzerland): IUCN.

Brooks TM, Akçakaya HR, Burgess ND, Butchart SHM, Hilton-Taylor C, Hoffmann M, Juffe-Bignoli D, Kingston N, MacSharry B, Parr M, Perianin L, Regan EC, Rodrigues ASL, Rondinini C, Shennan-Farpon Y, and Young BE. (2016). Analysing biodiversity and conservation knowledge products to support regional environmental assessments. *Scientific Data* 3: 160007. doi:10.1038/sdata.2016.7.

**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 country + a unique sites number); latitude (SITLAT); longitude (SITLONG); surface

area (SITAREA, in hectare); proportion of the site which is protected with protected area coverage (PROTECT; whole, yes, little/none, most, some, unknown); number of protected areas which either partly or wholly cover the KBA (NO\_PA), three fields coding for IBA/KBA/AZE status (IBASTATUS/KBASTATUS/AZESTATUS; confirmed, proposed, candidate, superseded); creator (CREATEDBY); person who added the record (ADDEDDBY); date when added to the dataset (ADDEDDATE); person who edited the record and when (CHANGEBY/CHANGEDATE); data source (SOURCE); DELTXT (comments for edits); geometry type (DELGEOM; draft or refined polygon); MarineIBA (whether this is a marine IBA).

The factsheets providing background information relevant to this dataset can be found at:

- <http://wcmc.io/KBA>
- [www.biodiversitya-z.org/content/alliance-for-zero-extinction-sites-aze](http://www.biodiversitya-z.org/content/alliance-for-zero-extinction-sites-aze)
- [www.biodiversitya-z.org/content/important-bird-and-biodiversity-areas-iba](http://www.biodiversitya-z.org/content/important-bird-and-biodiversity-areas-iba)

**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](http://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](http://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](http://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](mailto:birdlife@birdlife.org)) for terms of use.

**Contact organisation:** Birdlife International

**Organisation type:** Custodian **Acronym:**

**Name:** Mark Balman **Position:** GIS Support Analyst

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

**E-mail:** [Mark.Balman@birdlife.org](mailto:Mark.Balman@birdlife.org)

**Web site:** [www.birdlife.org](http://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://maps.birdlife.org/marineIBAs/default.html>

**Other webpage:** <http://www.birdlife.org/datazone/sowb/casestudy/88>

**Web map service:**

**Factsheet:** <http://wcmc.io/KBA>

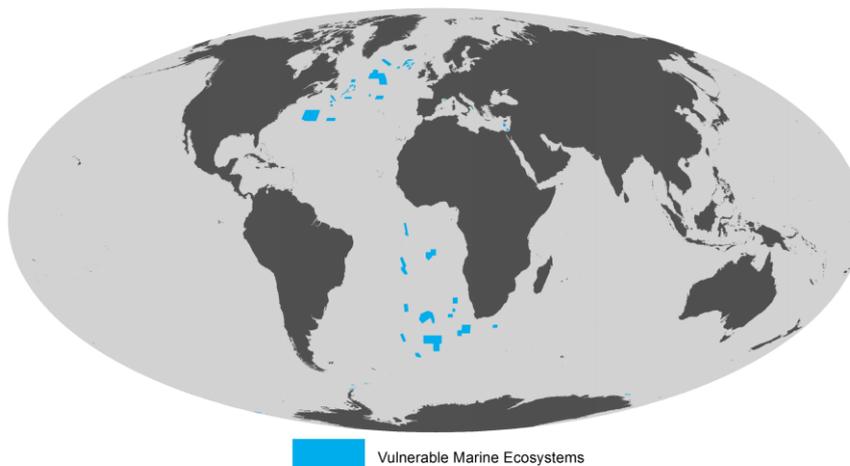
**Resolution, scale:** -- **Reference system:** WGS 1984

**West bounding:** -180.0 **East bounding:** 180.0

**South bounding:** -69.4 **North bounding:** 81.4

**Metadata standard:** UNEP-WCMC Specific **Date of metadata:** 25/01/2017

## Global Distribution of Vulnerable Marine Ecosystems



**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.

**Citation(s):** Food and Agriculture Organization of the United Nations (FAO) (2015). Vulnerable Marine Ecosystems (VME) Database. A global inventory of fisheries measures to protect vulnerable marine ecosystems in areas beyond national jurisdiction. URL: [http://www.fao.org/in-action/vulnerable-marine-ecosystems/background/vme-tools/en/#download\\_shapefiles](http://www.fao.org/in-action/vulnerable-marine-ecosystems/background/vme-tools/en/#download_shapefiles)

**Other cited reference(s):**

FAO (Food and Agriculture Organization of the United Nations) (2009). International Guidelines for the Management of Deep-sea Fisheries in the High Seas. Rome (Italy): FAO. 92 pp

**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).

In 2016, UNEP-WCMC downloaded individual datasets at [http://www.fao.org/in-action/vulnerable-marine-ecosystems/background/vme-tools/en/#download\\_shapefiles](http://www.fao.org/in-action/vulnerable-marine-ecosystems/background/vme-tools/en/#download_shapefiles), and compiled them in a single dataset.

Version:	1.0		
Data lineage:	The database took a few years to develop, and was finally released in 2015.		
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: <a href="http://www.fao.org/contact-us/terms/en/">http://www.fao.org/contact-us/terms/en/</a>		
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:	<a href="http://www.fao.org">www.fao.org</a>		
Data format(s):	Vector (polygon; .shp)		
Distribution format(s):	Vector (polygon; .shp)	Dataset size (uncompressed):	561 Kb
Webpage and/or download:	<a href="http://www.fao.org/in-action/vulnerable-marine-ecosystems/background/vme-tools/en/#download_shapefiles">http://www.fao.org/in-action/vulnerable-marine-ecosystems/background/vme-tools/en/#download_shapefiles</a>		
Other webpage:	<a href="http://www.fao.org/in-action/vulnerable-marine-ecosystems/vme-database/en/">http://www.fao.org/in-action/vulnerable-marine-ecosystems/vme-database/en/</a>		
Web map service:			
Factsheet:	<a href="http://wcmc.io/VME">http://wcmc.io/VME</a>		

Dataset ID: FAO-002

Resolution, scale: --

West bounding: -180.0

South bounding: -90.0

Metadata standard: UNEP-WCMC Specific

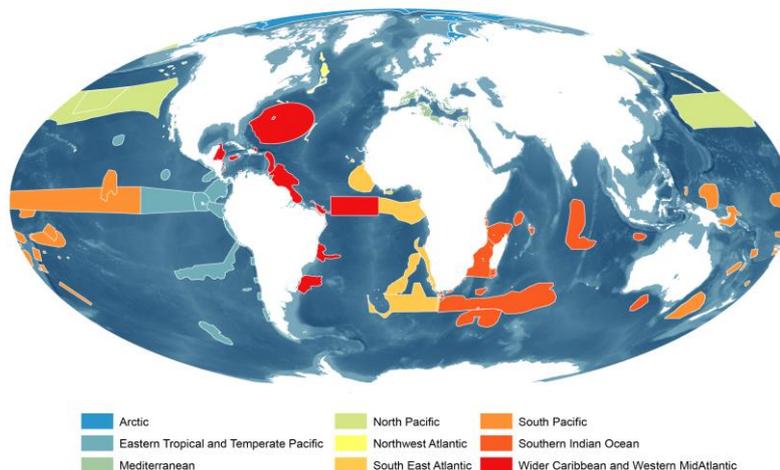
Reference system: WGS 1984

East bounding: 180.0

North bounding: 90.0

Date of metadata: 23/01/2017

## Global Distribution of Ecologically or Biologically Significant Marine Areas



**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) 9 Decision IX/20). Compiled by the Marine Geospatial Ecology Laboratory (MGEL), Duke University. URL: <https://www.cbd.int/ebsa/>

**Other cited reference(s):**

Secretariat of the Convention on Biological Diversity (CBD) (2008). Conference of the Parties (COP) 09 Decision IX/20 Marine and Coastal Biodiversity. Annex 1. Scientific criteria for identifying Ecologically or Biologically Sensitive Marine Areas in need of protection in open ocean waters and deep habitats. URL: [www.cbd.int/doc/decisions/cop-09/cop-09-dec-20-en.pdf](http://www.cbd.int/doc/decisions/cop-09/cop-09-dec-20-en.pdf)

Ardron J, Dunn D, Corrigan C, Gjerde K, Halpin P, Rice J, Vanden Berghe E, Vierros M (2009). Defining ecologically or biologically significant areas in the open oceans and deep seas: Analysis, tools, resources and illustrations. Presented at the CBD Scientific Expert Workshop on ecological criteria, Ottawa (Canada), 29 September – 2 October 2009. Global Ocean Biodiversity Initiative (GOBI). URL: [http://cmsdata.iucn.org/downloads/gobi\\_report\\_2009.pdf](http://cmsdata.iucn.org/downloads/gobi_report_2009.pdf)

**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).

**Purpose of creation:** 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.

<b>Creation methodology:</b>	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).		
<b>Version:</b>	1.0		
<b>Data lineage:</b>	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).		
<b>Category:</b>	Protected areas and areas of biodiversity importance		
<b>Keywords:</b>	Ecology, biology, ecosystem services, marine, species, population, ecosystem		
<b>Similar datasets:</b>			
<b>Limitations:</b>	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.		
<b>Maintenance frequency:</b>	Data are updated in intervals that are uneven in duration.		
<b>Main access/use constraint:</b>	For details regarding CBD Terms of Use for EBSA, please visit: <a href="https://www.cbd.int/terms/">https://www.cbd.int/terms/</a>		
<b>Other access/use constraints:</b>	--		
<b>Contact organisation:</b>	Secretariat of the Convention on Biological Diversity		
<b>Organisation type:</b>	Custodian	<b>Acronym:</b>	CBD
<b>Name:</b>	Jihyun Lee	<b>Position:</b>	CBD Secretariat - Marine tea
<b>City:</b>	Montreal	<b>Country:</b>	Canada
<b>E-mail:</b>	secretariat@cbd.int		
<b>Web site:</b>	<a href="http://www.cbd.int">www.cbd.int</a>		
<b>Data format(s):</b>	Vector (polygon; .shp)		
<b>Distribution format(s):</b>	Vector (polygon; .shp)	<b>Dataset size (uncompressed):</b>	5.37 Mb

Dataset ID: CBD-001

Webpage and/or <https://www.cbd.int/ebsa/>  
download:

Other webpage:

Web map service:

Factsheet: <http://wcmc.io/EBSA>

Resolution, scale: --

West bounding: -180.0

South bounding: -90.0

Metadata standard: UNEP-WCMC Specific

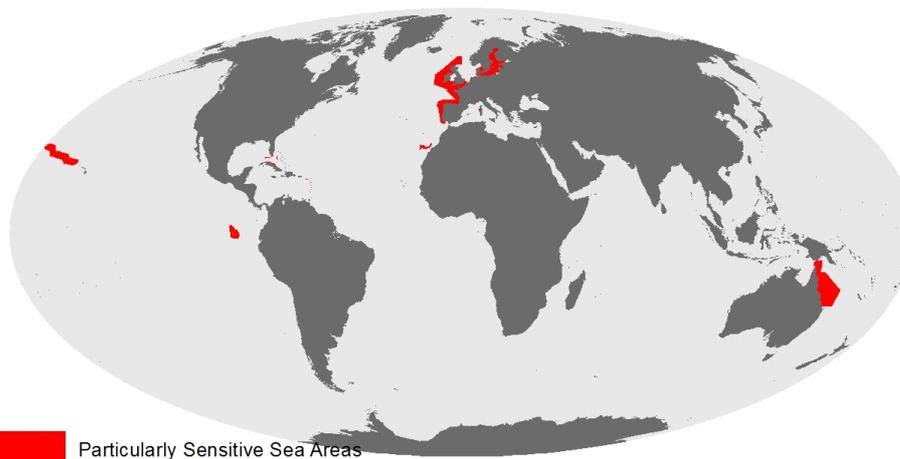
Reference system: WGS 1984

East bounding: 180.0

North bounding: 90.0

Date of metadata: 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:** 2016

**Geographical range:** Global

**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

Dataset ID: IMO-001

Keywords: marine, coastal, designation, PSSA

Similar datasets:

Limitations:

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 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](http://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>

Other webpage:

Web map service:

Factsheet: <http://wcmc.io/PSSA>

Resolution, scale: N/A

Reference system: WGS 1984

West bounding: -179.5

East bounding: 154.0

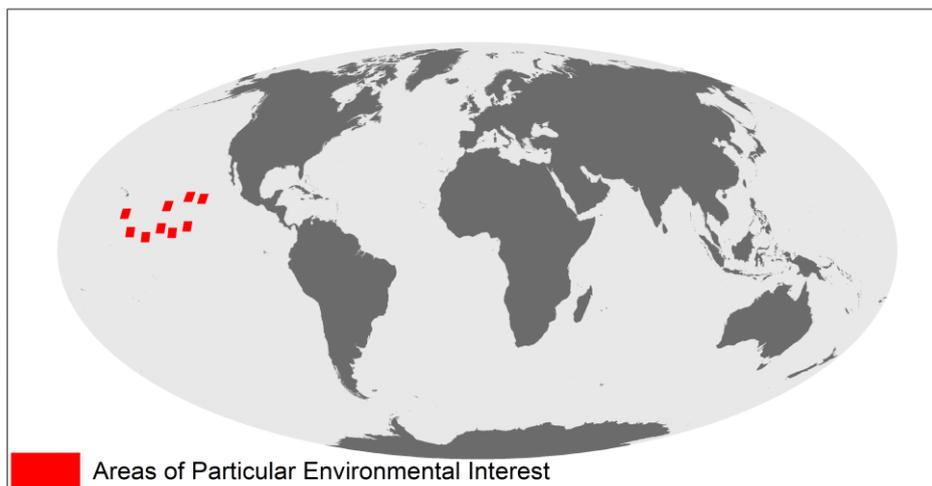
South bounding: -24.5

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:

Wedding LM, Friedlander AM, Kittinger JN, Watling L, Gaines SD, Bennett M, Hardy SM, Smith CR (2013). From principles to practice: a spatial approach to systematic conservation planning in the deep sea. *Proceedings of the Royal Society B* 280. 20131684. URL: <http://dx.doi.org/10.1098/rspb.2013.1684>

**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).

**Version:** 1.0 (2012)

**Data lineage:**

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

Dataset ID: ISA-001

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](mailto:marine@unep-wcmc.org) in the first instance.

Contact organisation: International Seabed Authority

Organisation type: Owner Acronym: ISA

Name: Sandor Mulsow Position: Head (Res. & Env. Monit.)

City: Kingston Country: Jamaica

E-mail:

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: [See metadata](#)

Other webpage: <https://www.isa.org.jm>

Web map service: <http://www.isa.org.jm/files/documents/EN/18Sess/Council/ISBA-18C-22.pdf>

Factsheet:

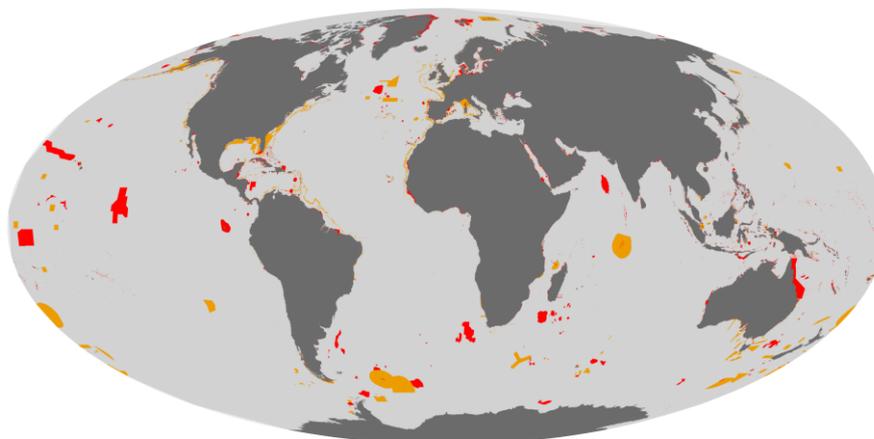
Resolution, scale: N/A Reference system: WGS 1984

West bounding: -155.1 East bounding: -119.6

South bounding: 2.9 North bounding: 20.7

Metadata standard: UNEP-WCMC Specific Date of metadata: 25/06/2015

## A Global Map of Marine Critical Habitat (2015) as per IFC PS6



■ Likely CH 
 ■ Potential CH 
 ■ Unclassified

**Description:** This dataset shows the spatial distribution of 'Critical Habitat' (CH), as defined by the International Finance Corporation's Performance Standard 6 (IFC-PS6) ([http://wcmc.io/IFC\\_PS6\\_Criteria](http://wcmc.io/IFC_PS6_Criteria)). The composite CH map classifies 11 marine and coastal biodiversity features into 'Potential' and 'Likely' CH, based a classification scheme (see Figure 1 in Martin et al. 2015) developed to reflect biodiversity data layer alignment with IFC-PS6 CH criteria/scenarios and inherent degree of certainty (in terms of presence on the ground).

**Citation(s):** Martin CS, Tolley MJ, Farmer E, Mcowen CJ, Geffert JL, Scharlemann JPW, Thomas HL, van Bochove JH, Stanwell-Smith D, Hutton JM, Lascelles B, Pilgrim JD, Ekstrom JMM, Tittensor DP (2015). A global map to aid the identification and screening of critical habitat for marine industries. *Marine Policy* 53: 45-53. doi: 10.1016/j.marpol.2014.11.007

**Temporal range:** 2013

**Geographical range:** Global

**Supplementary information:** The 11 biodiversity features used in the creation of the composite CH map are: protected areas, Key Biodiversity Areas [KBA], sea turtle nesting sites, cold-and warm-water corals, seamounts, seagrass beds, mangroves, saltmarshes, hydrothermal vents and cold-seeps (references and dataset versions are given in Table 2 of Martin et al. 2015).

In the composite data layer, Likely CH is given the value '2', Potential CH the value '1', and unclassified areas the value '0'. Supplementary material for Martin et al. (2015) are available online at <http://dx.doi.org/10.1016/j.marpol.2014.11.007>, and includes other global datasets considered, as well as documentation and justification of biodiversity feature classification.

Due to data use constraints (e.g. non-commercial restriction), it is not currently possible to "drill down" into the composite data layer to extract the trigger behind a given class. However, the composite data layer is accompanied by an "interactive PDF" (iPDF) that allows viewing most of the underlying component data layers. Also provided is a "data factsheet" that outlines the availability of the underlying datasets to Proteus Partners.

**Purpose of creation:** An important emerging regulatory framework on environmental sustainability for business operations is the International Finance Corporation's Performance

Standard 6 (IFC PS6). Within PS6, identification of 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. No publicly available tools have been developed in either the marine or terrestrial realm to assess the likelihood of sites or operations being located within PS6-defined Critical Habitat. This map presents a starting point towards filling this gap.

**Creation methodology:**

Assessment of potentially relevant data layers led to the selection of eleven biodiversity-related features which 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. An analysis mask covering all oceans was created and used to standardise all the biodiversity data layers to rasters of 1 km cell size in a cylindrical equal-area projection, representing the the minimum-mapping-unit of the analysis. A classification scheme was established to reflect the alignment of biodiversity features with IFC-PS6 Critical Habitat criteria and additional scenarios as well as degrees of certainty in the data layers. Subsequently, a global map of 'Likely' and 'Potential' Critical Habitat was produced by combining all classified biodiversity data layers into one composite layer, in which the highest designation or ‘warmest’ colour (in order, red, orange, and grey) was retained for each cell.

**Version:** 1.0 (August 2013)

**Data lineage:** This is the composite dataset published in Martin et al. (2015). Several of the datasets used to create this composite have since been updated (e.g. protected area, warm-water coral reef, saltmarsh, seagrass, vent).

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

**Keywords:** marine, coastal, high seas, deep sea, IFC PS6, critical habitat

**Similar datasets:** None

**Limitations:** Global data layers provide a starting point for identifying Critical Habitat features. On the ground surveys are however crucial to conduct a thorough assessment to determine the presence or absence of Critical Habitat unambiguously. One key data limitation is that all data sets used in this study are likely to have errors of commission and/or omission.

Known issues occur near Madagascar and South Africa due to errors in the saltmarsh dataset used in the analysis.

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

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

**Other access/use constraints:** The dataset should not be circulated externally. UNEP-WCMC may authorise its use in specific named projects. Interested users should contact [marine@unep-wcmc.org](mailto:marine@unep-wcmc.org).

Dataset ID: WCMC-029

Contact organisation: UNEP World Conservation Monitoring Centre

Organisation type:	Custodian	Acronym:	UNEP-WCMC
Name:	Dr. Steve Fletcher	Position:	Head of Programme
City:	Cambridge	Country:	United Kingdom
E-mail:	steve.fletcher@unep-wcmc.org		
Web site:	<a href="http://www.unep-wcmc.org">www.unep-wcmc.org</a>		
Data format(s):	Raster (ESRI Grid), Vector (polygon; .shp)		

Distribution format(s):	Raster (ESRI Grid)	Dataset size (uncompressed):	262 Mb
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Webpage and/or download: <http://dx.doi.org/10.1016/j.marpol.2014.11.007>

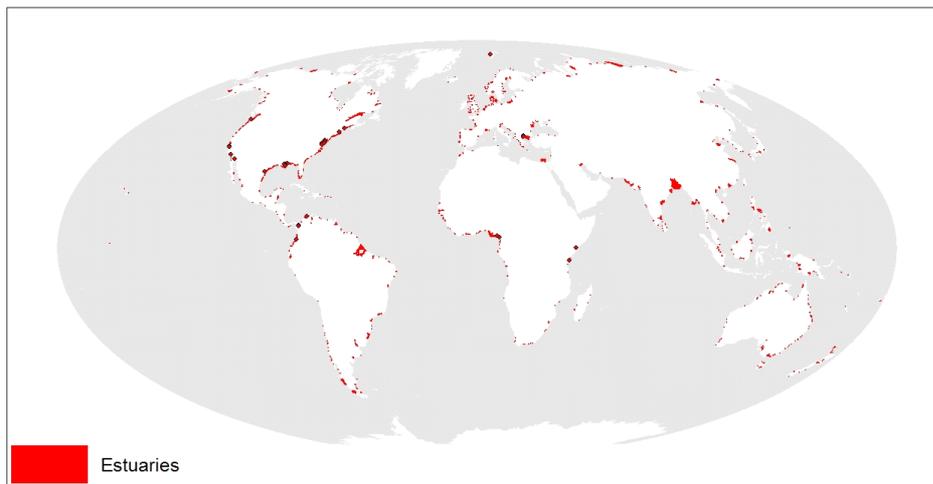
Other webpage: [http://wcmc.io/IFC\\_PS6\\_Criteria](http://wcmc.io/IFC_PS6_Criteria)

Web map service:

Factsheet: <http://wcmc.io/critical-habitat>

Resolution, scale:	1 km cell size	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:	29/01/2016

## Global Estuary Database (2003)



**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.searoundus.org](http://www.searoundus.org)).

**Citation(s):** Alder J (2003). Putting the coast in the "Sea Around Us". The Sea Around Us Newsletter 15: 1-2. URL: <http://searoundus.org/newsletter/Issue15.pdf>; <http://data.unep-wcmc.org/datasets/23> (version 2.0)

Other cited reference(s):

Watson R, Alder J, Booth S, Christensen V, Kaschner K, Kitchingman A, Lai S, Palomares MLD, Valdez F, Pauly D (2004). Welcome to [www.searoundus.org](http://www.searoundus.org): launching our 'product' on the web. The Sea Around Us Newsletter 22: 1-8

**Temporal range:** 2003

**Geographical range:** Global

**Supplementary information:** Attribute table: estuary ID number (ID Number), estuary name (LABEL), ISO3 country code (COUNTRY), continent (CONTINENT), average discharge in m<sup>3</sup>.s<sup>-1</sup> (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.searoundus.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 km<sup>2</sup>) and mean freshwater input (in m<sup>3</sup>.s<sup>-1</sup>) (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.

<b>Version:</b>	2.0 (2014)		
<b>Data lineage:</b>	This is a modified version of the 2003 version of the dataset. See 'Creation methodology' for details.		
<b>Category:</b>	Biogeographic classification		
<b>Keywords:</b>	Estuaries, coastal, marine		
<b>Similar datasets:</b>	None		
<b>Limitations:</b>	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.		
<b>Maintenance frequency:</b>	Data are not being updated.		
<b>Main access/use constraint:</b>	UNEP-WCMC General Data License (excluding WDPA). See <a href="http://www.unep-wcmc.org/policies/general-data-license-excluding-wdpa#data_policy">www.unep-wcmc.org/policies/general-data-license-excluding-wdpa#data_policy</a> and <a href="http://www.unep-wcmc.org/policies">www.unep-wcmc.org/policies</a> . For commercial use, please contact <a href="mailto:business-support@unep-wcmc.org">business-support@unep-wcmc.org</a> .		
<b>Other access/use constraints:</b>	Please cite the data source in all publications.		
<b>Contact organisation:</b>	Sea Around Us, University of British Columbia		
<b>Organisation type:</b>	<b>Owner</b>	<b>Acronym:</b>	UBC
<b>Name:</b>	Dr. Dirk Zeller	<b>Position:</b>	Senior Researcher
<b>City:</b>	Vancouver	<b>Country:</b>	Canada
<b>E-mail:</b>	<a href="mailto:d.zeller@fisheries.ubc.ca">d.zeller@fisheries.ubc.ca</a>		
<b>Web site:</b>	<a href="http://www.seaaroundus.org">www.seaaroundus.org</a>		
<b>Data format(s):</b>	Vector (point; .shp), Vector (polygon; .shp)		
<b>Distribution format(s):</b>	Vector (polygon; .shp)	<b>Dataset size (uncompressed):</b>	4.8 Mb

Dataset ID: UBC-003

Webpage and/or <http://data.unep-wcmc.org/datasets/23>  
download:

Other webpage: [www.seararoundus.org](http://www.seararoundus.org)

Web map service: [http://ec2-54-204-216-109.compute-1.amazonaws.com:6080/arcgis/rest/services/marine/UBC\\_003\\_SAU\\_Estuaries/MapServer](http://ec2-54-204-216-109.compute-1.amazonaws.com:6080/arcgis/rest/services/marine/UBC_003_SAU_Estuaries/MapServer)

Factsheet: [www.marbef.org/wiki/estuaries](http://www.marbef.org/wiki/estuaries)

Resolution, scale: Not applicable

Reference system: WGS 1984

West bounding: -178.9

East bounding: 178.6

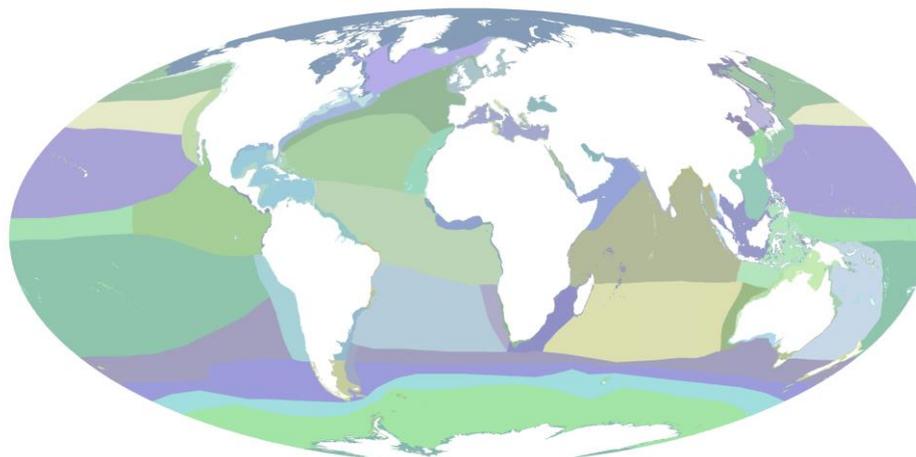
South bounding: -53.6

North bounding: 78.2

Metadata standard: UNEP-WCMC Specific

Date of metadata: 29/05/2015

## Marine Ecoregions and Pelagic Provinces of the World (2007; 2012)



**Description:** 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(s):**

Citation:

The Nature Conservancy (2012). Marine Ecoregions and Pelagic Provinces of the World. GIS layers developed by The Nature Conservancy with multiple partners, combined from Spalding et al. (2007) and Spalding et al. (2012). Cambridge (UK): The Nature Conservancy. DOIs: 10.1641/B570707; 10.1016/j.ocecoaman.2011.12.016. Data URL: <http://data.unep-wcmc.org/datasets/38>

Citations for the separate entities:

Spalding MD, Fox HE, Allen GR, Davidson N, Ferdaña ZA, Finlayson M, Halpern BS, Jorge MA, Lombana A, Lourie SA, Martin KD, McManus E, Molnar J, Recchia CA, Robertson J (2007). Marine Ecoregions of the World: a bioregionalization of coast and shelf areas. *BioScience* 57: 573-583. DOI: 10.1641/B570707. Data URL: <http://data.unep-wcmc.org/datasets/38>

Spalding MD, Agostini VN, Rice J, Grant SM (2012). Pelagic provinces of the world): a biogeographic classification of the world’s surface pelagic waters. *Ocean and*

Dataset ID: WCMC-036

Coastal Management 60: 19-30. DOI: 10.1016/j.ocecoaman.2011.12.016. Data URL: <http://data.unep-wcmc.org/datasets/38>

**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

**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.

Maintenance frequency: Data are not being updated.

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

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](mailto: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](http://dx.doi.org/10.1016)

Other webpage: <http://dx.doi.org/10.1016/j.ocecoaman.2011.12.016>

Web map service: [http://ec2-54-204-216-109.compute-1.amazonaws.com:6080/arcgis/rest/services/marine/WCMC\\_036\\_MEOW\\_PPOW\\_2007\\_2012/MapServer](http://ec2-54-204-216-109.compute-1.amazonaws.com:6080/arcgis/rest/services/marine/WCMC_036_MEOW_PPOW_2007_2012/MapServer)

Factsheet: <http://wcmc.io/PPOW>

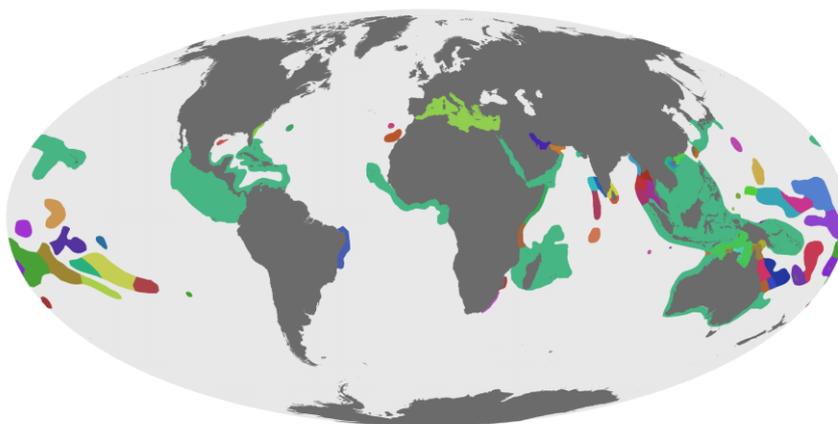
Resolution, scale: Not applicable      Reference system: WGS 1984

West bounding: -180.0      East bounding: 180.0

South bounding: -90.0      North bounding: 90.0

Metadata standard: UNEP-WCMC Specific      Date of metadata: 29/01/2016

## Coral Ecoregions of the World (2009)



<b>Description:</b>	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.
<b>Citation(s):</b>	Veron JEN, Devantier LM, Turak E, Green AL, Kininmonth S, Stafford-Smith M, Peterson N (2009). Delineating the coral triangle. <i>Journal of Coral Reef Studies</i> 11(2): 91-100. URL: <a href="https://www.jstage.jst.go.jp/article/galaxea/11/2/11_2_91/_pdf">https://www.jstage.jst.go.jp/article/galaxea/11/2/11_2_91/_pdf</a>
<b>Temporal range:</b>	2009
<b>Geographical range:</b>	Global
<b>Supplementary information:</b>	Attribute table: ecoregion name (ECONAME); total number of coral species (SUMTOT_S); coral diversity (diversity); coral endemism, level 1 (Endem_1); coral endemism, level 2 (Endem_2); coral endemism, level 3 (Endem_3).
<b>Purpose of creation:</b>	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.
<b>Creation methodology:</b>	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.
<b>Version:</b>	1.0
<b>Data lineage:</b>	
<b>Category:</b>	Biogeographic classification
<b>Keywords:</b>	marine, corals, ecoregion, endemism
<b>Similar datasets:</b>	
<b>Limitations:</b>	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](mailto: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](mailto: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](https://www.jstage.jst.go.jp/article/galaxea/11/2/11_2_91/pdf)

Other webpage:

Web map service:

Factsheet:

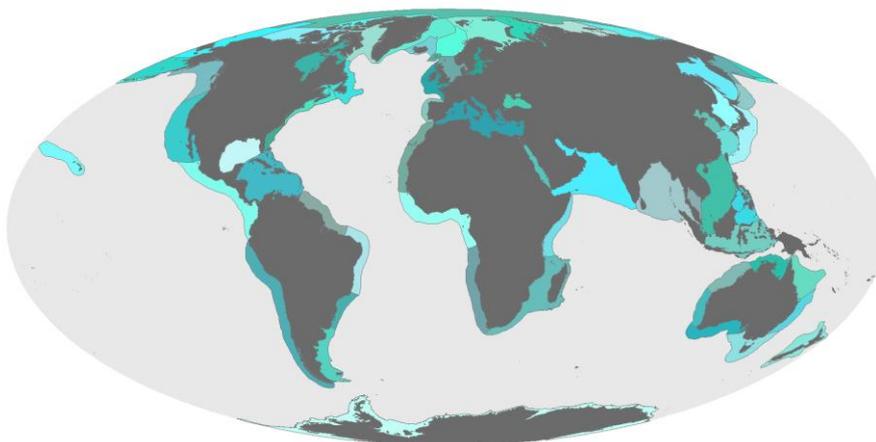
Resolution, scale: Not applicable                      Reference system: WGS 1984

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

## 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.

Dataset ID: NOAA-001

**Creation methodology:** 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:** Unrestricted

**Other access/use constraints:** The dataset must be cited when used.

**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](http://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:**

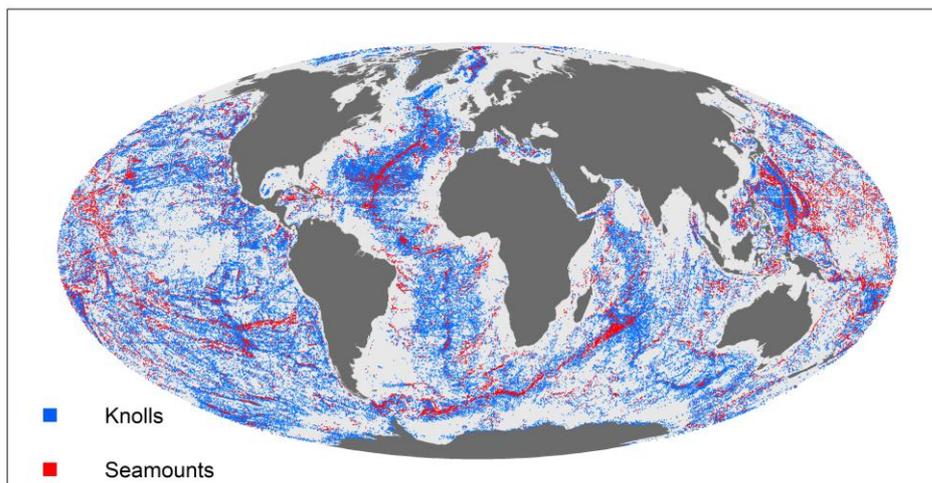
**Resolution, scale:** N/A **Reference system:** WGS 1984

**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

## Global Distribution of Seamounts and Knolls (2011)



**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).

**Citation(s):** Yesson C, Clark MR, Taylor M, Rogers AD (2011). The global distribution of seamounts based on 30-second bathymetry data. *Deep Sea Research Part I: Oceanographic Research Papers* 58: 442-453. DOI: <http://dx.doi.org/10.1016/j.dsr.2011.02.004>. Data DOI: <http://doi.pangaea.de/10.1594/PANGAEA.757564>.

**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.

Lists of predicted knolls and seamounts are also provided.

**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.

Dataset ID: ZSL-002

**Version:** 1.0 (2011)  
**Data lineage:** --  
**Category:** Biogeographic classification  
**Keywords:** deep sea, high seas, benthic, marine, model, seamount, knoll, habitat, ecosystem

**Similar datasets:** UniCal-001

**Limitations:** 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.

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

<b>Organisation type:</b>	<b>Owner</b>	<b>Acronym:</b>	ZSL
<b>Name:</b>	Dr. Chris Yesson	<b>Position:</b>	Research Scientist
<b>City:</b>	London	<b>Country:</b>	United Kingdom
<b>E-mail:</b>	chris.yesson@ioz.ac.uk		
<b>Web site:</b>	<a href="http://www.zsl.org">www.zsl.org</a>		

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

<b>Distribution format(s):</b>	Vector (point; .shp), Vector (polygon; .shp)	<b>Dataset size (uncompressed):</b>	84.5 Mb
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**Webpage and/or download:** <http://data.unep-wcmc.org/datasets/41>

**Other webpage:** <http://doi.pangaea.de/10.1594/PANGAEA.757564>

**Web map service:** [http://ec2-54-204-216-109.compute-1.amazonaws.com:6080/arcgis/rest/services/marine/ZSL\\_002\\_ModelledSeamounts2011/MapServer](http://ec2-54-204-216-109.compute-1.amazonaws.com:6080/arcgis/rest/services/marine/ZSL_002_ModelledSeamounts2011/MapServer)

Dataset ID: ZSL-002

Factsheet: <http://wcmc.io/seamounts>

Resolution, scale: Not applicable

West bounding: -180.0

South bounding: -77.8

Metadata standard: UNEP-WCMC Specific

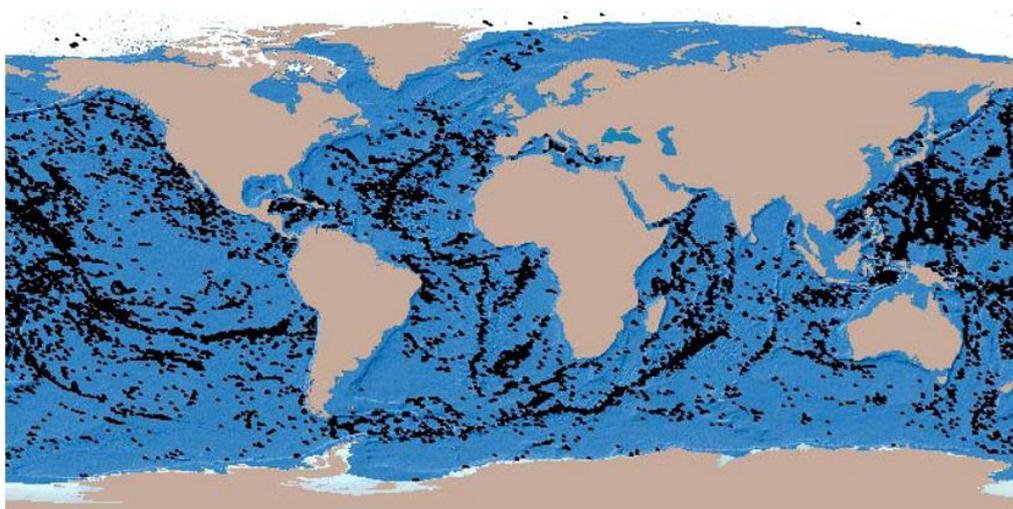
Reference system: WGS 1984

East bounding: 180.0

North bounding: 85.0

Date of metadata: 29/01/2016

## 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:**

Kitchingman A, Lai S, Morato T, Pauly D (2007). How many seamounts are there and where are they located? In: Seamounts: Ecology, Fisheries & Conservation. Pitcher TJ, Morato T, Hart PJB, Clark MR, Haggan N, Santos RS (eds.). pp. 26-40.

**Temporal range:** Unknown

**Geographical range:** Global

**Supplementary information:**

**Purpose of creation:** 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.

**Creation methodology:** 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.

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 Position: Senior Researcher

City: Vancouver Country: Canada

E-mail: d.zeller@fisheries.ubc.ca

Web site: [www.seaaroundus.org](http://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](http://www.seaaroundus.org/doc/PageContent/LargeSeamountAreas/Kitchingman_Lai-2004-Inferences-Seamounts-FCRR-12-5.pdf)

Web map service:

Factsheet: <http://wcmc.io/seamounts>

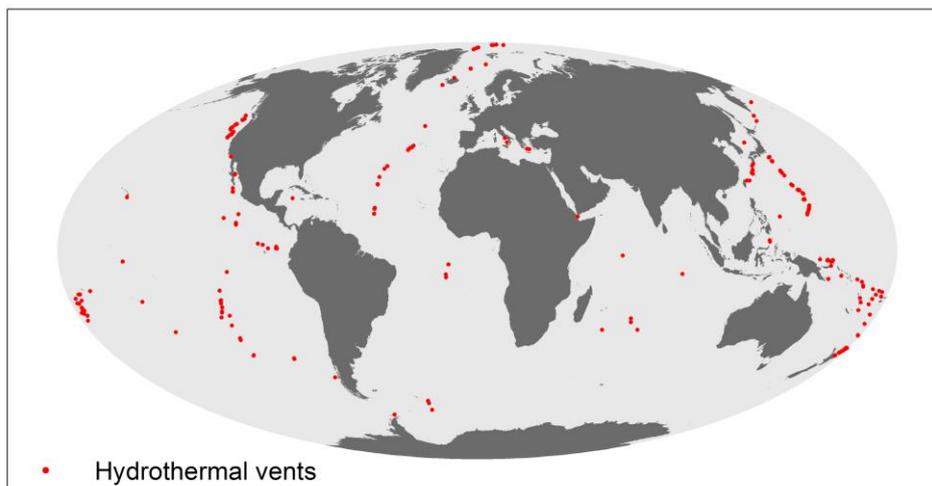
Resolution, scale: Reference system: Unknown

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, led 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](http://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](http://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

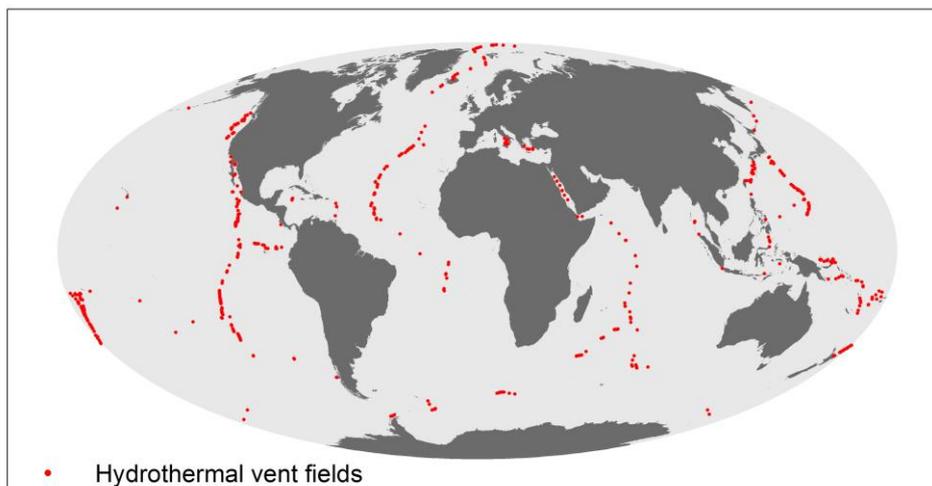


Dataset ID: ChEssBase-002

Factsheet: <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](http://www.interridge.org)).

**Citation(s):** Beaulieu SE (2013). InterRidge global database of active submarine hydrothermal vent fields ("InterRidge Vents Database"; version 3.2): prepared for InterRidge. Beijing (China): InterRidge, Peking University. URL: <http://vents-data.interridge.org> [October 2014].

Beaulieu SE, Baker ET, German CR, Maffei A (2013). An authoritative global database for active submarine hydrothermal vent fields. *Geochemistry, Geophysics, Geosystems*. Vol 14, Issue 11, pp. 4892-4905

**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](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](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](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:** 3.3 (October 2015)

**Data lineage:** Detailed lineage information can be found at the following webpage: [http://vents-data.interridge.org/about\\_the\\_database#Version3](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:** Woods Hole Oceanographic Institution

**Organisation type:** Custodian **Acronym:** WHOI

**Name:** Dr. Stace Beaulieu **Position:** Research Scientist

**City:** Woods Hole **Country:** Massachusetts, USA

**E-mail:** [stace@whoi.edu](mailto:stace@whoi.edu)

**Web site:** [www.interridge.org](http://www.interridge.org)

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

**Distribution format(s):** Tabular (.xls, .csv, or .tab) **Dataset size (uncompressed):** 639 Kb

**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)

Dataset ID: IntRid-001

Web map service:

Factsheet: <http://wcmc.io/hydrothermal-vents>

Resolution, scale: Not applicable

Reference system: WGS 1984

West bounding: -180.0

East bounding: 179.8

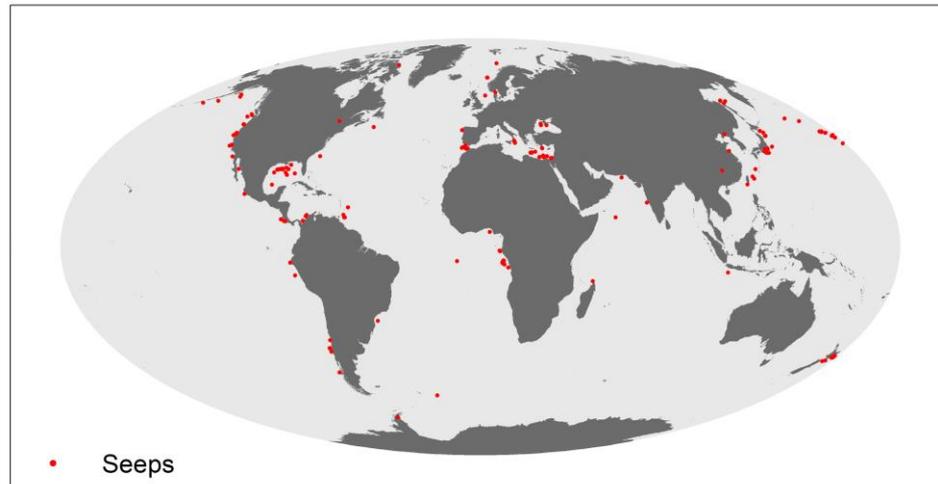
South bounding: -64.5

North bounding: 87.0

Metadata standard: UNEP-WCMC Specific

Date of metadata: 01/07/2015

## Global Distribution of Cold Seeps (2010)



<b>Description:</b>	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, led 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.
<b>Citation(s):</b>	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: <a href="http://www.noc.soton.ac.uk/chess">www.noc.soton.ac.uk/chess</a>
<b>Temporal range:</b>	Unknown
<b>Geographical range:</b>	Global
<b>Supplementary information:</b>	Attribute table: location (Name); latitude (lat); longitude (lon)  ChEssBase can be searched (taxonomy, site/location, habitat type, references, specimen) at <a href="http://www.noc.soton.ac.uk/chess/database/db_search.php">www.noc.soton.ac.uk/chess/database/db_search.php</a> . ChEssBase has been integrated with the Ocean Biogeographic Information System (OBIS; <a href="http://www.iobis.org">http://www.iobis.org</a> ).
<b>Purpose of creation:</b>	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.
<b>Creation methodology:</b>	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](http://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](mailto: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](mailto:mb11@noc.soton.ac.uk)

Web site: [www.noc.soton.ac.uk](http://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](http://www.noc.soton.ac.uk/chess/science/sci_project.php)

Other webpage: <http://www.coml.org>

Web map service: <http://arcgis.protectedplanet.net/ags2/rest/services/SeaSketchData/MapServer/0>

Dataset ID: ChEssBase-001

Factsheet: <http://wcmc.io/cold-seep>

Resolution, scale: Not applicable

West bounding: -164.1

South bounding: -65.4

Metadata standard: UNEP-WCMC Specific

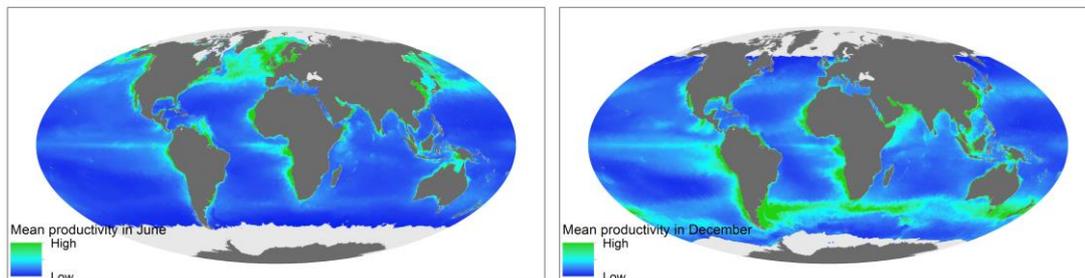
Reference system: WGS 1984

East bounding: 179.0

North bounding: 72.0

Date of metadata: 01/07/2015

## Mean Sea Surface Productivity in June and December 2003-2007 (2008)



- 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](http://www.science.oregonstate.edu/ocean.productivity)).
- Citation(s):** Kershaw F (2008). Mean sea surface productivity in June and December, for the period 2003-2007. Using data from Oregon State University's Ocean Productivity database. In: Integrating highly migratory species into high seas marine protected area planning: a global gap analysis (Oxford University, Centre for the Environment), 113 pp. Cambridge (UK): UNEP World Conservation Monitoring Centre. URL: <http://data.unep-wcmc.org/datasets/18> (June), <http://data.unep-wcmc.org/datasets/19> (December).
- 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](http://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](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](http://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.

Dataset ID: WCMC-020-021

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.

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

Other access/use constraints: None

Contact organisation: UNEP World Conservation Monitoring Centre

Organisation type: Custodian Acronym: UNEP-WCMC

Name: Dr. Steve Fletcher Position: Head of Programme

City: Cambridge Country: United Kingdom

E-mail: [steve.fletcher@unep-wcmc.org](mailto:steve.fletcher@unep-wcmc.org)

Web site: [www.unep-wcmc.org](http://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>

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/MapServer](http://downloads.wdpa.org/ArcGIS/rest/services/ocean_data_viewer/ssp_jun/MapServer)

Factsheet: <http://wcmc.io/environment-descriptors>

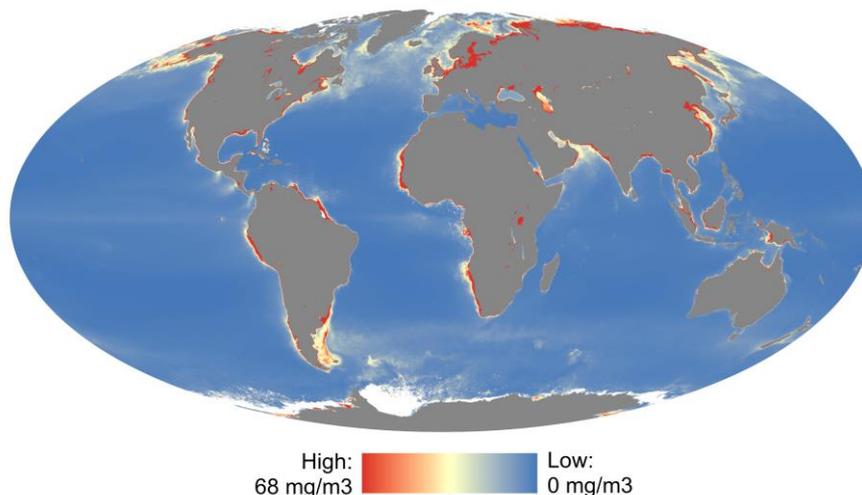
Resolution, scale: 0.18 dd Reference system: WGS 1984

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

## Mean Annual Sea Surface Chlorophyll-a Concentration 2009-2013 (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>).

**Citation(s):** NASA Ocean Biology (OB.DAAC). (2014). Mean annual sea surface chlorophyll-a concentration for the period 2009-2013 (composite dataset created by UNEP-WCMC). Data obtained from the Moderate Resolution Imaging Spectroradiometer (MODIS) Aqua Ocean Colour website (NASA OB.DAAC, Greenbelt, MD, USA). Accessed 28/11/2014. URL: <http://oceancolor.gsfc.nasa.gov/cgi/l3>. Cambridge (UK): UNEP World Conservation Monitoring Centre. URL: <http://data.unep-wcmc.org/datasets/37>.

**Other cited reference(s):**

Roberts JJ, Best BD, Dunn DC, Treml EA, Halpin PN. (2010). Marine Geospatial Ecology Tools: An integrated framework for ecological geoprocessing with ArcGIS, Python, R, MATLAB, and C++. *Environmental Modelling & Software* 25: 1197-1207. doi: 10.1016/j.envsoft.2010.03.029.

**Temporal range:** 2009-2013

**Geographical range:** Global

**Supplementary information:** Chlorophyll-a concentration is given in milligrams per cubic metre (mgChl-a/m<sup>3</sup>).

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.



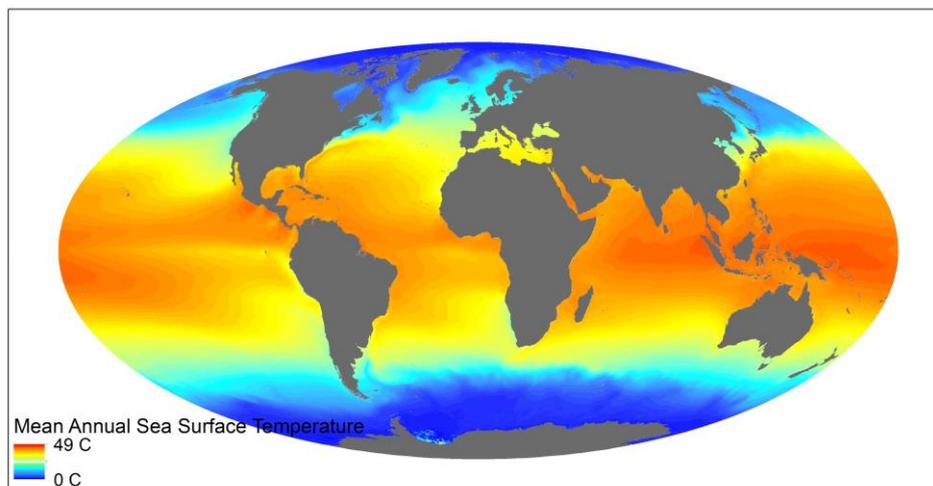
Dataset ID: WCMC-034

[ChlorophyllA2015/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

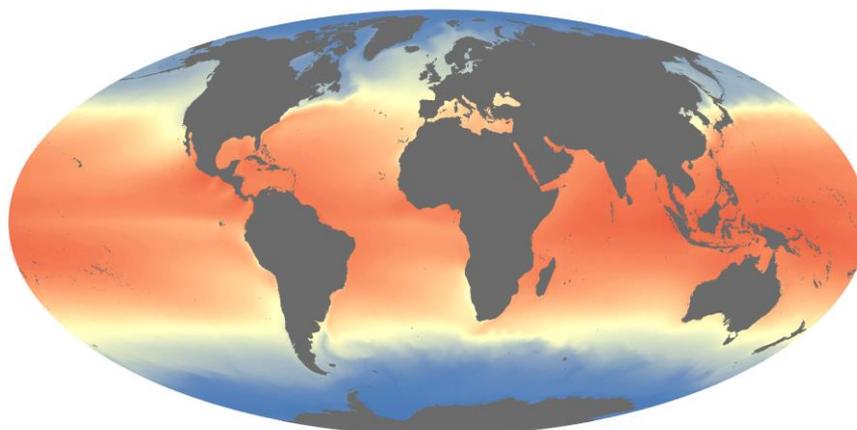
## Mean Annual Sea Surface Temperature 2003-2007 (2008)



- 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>).
- Citation(s):** Kershaw F (2008). Mean annual sea surface temperature, for the period 2003-2007. Using data from NASA's Ocean Color database. In: Integrating highly migratory species into high seas marine protected area planning: a global gap analysis (Oxford University, Centre for the Environment), 113 pp. Cambridge (UK): UNEP World Conservation Monitoring Centre. URL: <http://data.unep-wcmc.org/datasets/20>
- Temporal range:** 2003-2007
- Geographical range:** Global
- Supplementary information:** Sea surface temperature is given in degrees (Celcius).  
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.



## Mean Annual Sea Surface Temperature 2009-2013 (2015)

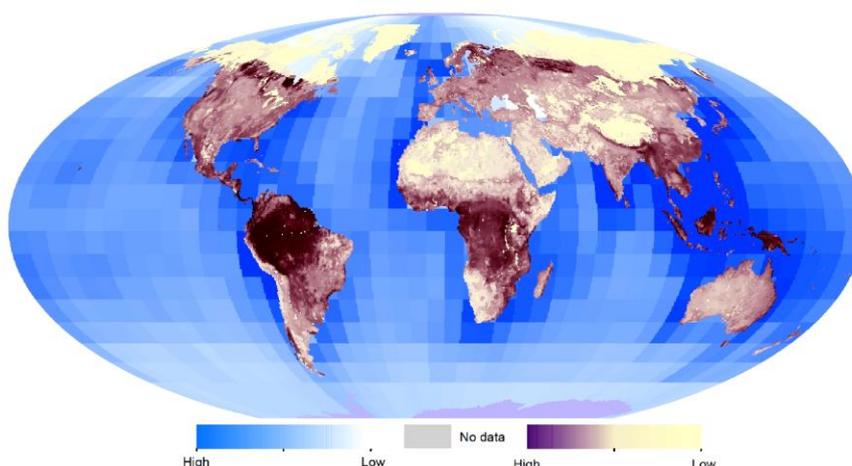


Low: 0°C High: 26°C

<b>Description:</b>	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 ( <a href="http://oceancolor.gsfc.nasa.gov">http://oceancolor.gsfc.nasa.gov</a> ).
<b>Citation(s):</b>	NASA Ocean Biology (OB.DAAC). (2014). Mean annual sea surface temperature for the period 2009-2013 (composite dataset created by UNEP-WCMC). Data obtained from the Moderate Resolution Imaging Spectroradiometer (MODIS) Aqua Ocean Colour website (NASA OB.DAAC, Greenbelt, MD, USA). Accessed 28/11/2014. URL: <a href="http://oceancolor.gsfc.nasa.gov/cgi/l3">http://oceancolor.gsfc.nasa.gov/cgi/l3</a> . Cambridge (UK): UNEP World Conservation Monitoring Centre. URL: <a href="http://data.unep-wcmc.org/datasets/36">http://data.unep-wcmc.org/datasets/36</a> .
<b>Temporal range:</b>	2009-2013
<b>Geographical range:</b>	Global
<b>Supplementary information:</b>	Sea surface temperature is given in degrees Celsius.
<b>Purpose of creation:</b>	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.
<b>Creation methodology:</b>	Information on the origins and calculations of the MODIS Aqua data can be accessed at Ocean Color Web ( <a href="http://oceancolor.gsfc.nasa.gov/cms/data/aqua">http://oceancolor.gsfc.nasa.gov/cms/data/aqua</a> ). UNEP-WCMC obtained Aqua MODIS daily sea surface temperature data in HDF format from the Ocean Color website ( <a href="http://oceancolor.gsfc.nasa.gov/cgi/l3">http://oceancolor.gsfc.nasa.gov/cgi/l3</a> ). 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.
<b>Version:</b>	1.0 (May 2015)
<b>Data lineage:</b>	
<b>Category:</b>	Environment descriptor



## A Global Map of Natural Capital (2014)



<b>Description:</b>	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.
<b>Citation(s):</b>	Dickson B, Blaney R, Miles L, Regan E, van Soesbergen A, Väänänen E, Blyth S, Harfoot M, Martin CS, McOwen C, Newbold T, van Bochove J (2014). Towards a global map of natural capital: key ecosystem assets. Nairobi (Kenya): United Nations Environment Programme. URL: <a href="http://www.unep-wcmc.org/resources-and-data/towards-a-global-map-of-natural-capital">http://www.unep-wcmc.org/resources-and-data/towards-a-global-map-of-natural-capital</a>
<b>Temporal range:</b>	2014
<b>Geographical range:</b>	Global
<b>Supplementary information:</b>	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.
<b>Purpose of creation:</b>	This layer presents the first attempt to give an overview of the global distribution of ecosystem assets.
<b>Creation methodology:</b>	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.
<b>Version:</b>	1.0 (2014)
<b>Data lineage:</b>	
<b>Category:</b>	Ecosystem services and natural capital

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

**Similar datasets:**

**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.

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

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

**Other access/use constraints:** Interested users should contact [marine@unep-wcmc.org](mailto:marine@unep-wcmc.org).

**Contact organisation:** UNEP World Conservation Monitoring Centre

<b>Organisation type:</b>	<b>Owner</b>	<b>Acronym:</b>	UNEP-WCMC
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<b>Name:</b>	Prof Jon Hutton	<b>Position:</b>	Director
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<b>City:</b>	Cambridge	<b>Country:</b>	United Kingdom
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<b>E-mail:</b>	<a href="mailto:jon.hutton@unep-wcmc.org">jon.hutton@unep-wcmc.org</a>
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<b>Web site:</b>	<a href="http://www.unep-wcmc.org">www.unep-wcmc.org</a>
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<b>Data format(s):</b>	Raster (.tif, geotiff)
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<b>Distribution format(s):</b>	Raster (.tif, geotiff)	<b>Dataset size (uncompressed):</b>	167 Mb
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**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.biodiversitya-z.org/content/natural-capital>

<b>Resolution, scale:</b>	0.017 dd (10x10 arc-min)	<b>Reference system:</b>	World Robinson
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<b>West bounding:</b>	-180.0	<b>East bounding:</b>	180.0
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<b>South bounding:</b>	-90.0	<b>North bounding:</b>	90.0
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<b>Metadata standard:</b>	UNEP-WCMC Specific	<b>Date of metadata:</b>	23/06/2015
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## 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:** --

**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.

Content owned by Third-Parties: Use of Third-Party Owned Content on Mapping Ocean Wealth that is not in Mapping Ocean Wealth Posts is not permitted by Users besides reviewing online, including but not limited to copying, distribution, publication, transfer or sale.

User-Generated Content on Mapping Ocean Wealth Posts: 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. The full terms of the License can be found on Creative Commons.

Dataset ID: TNC-004

Contact organisation: Mapping Ocean Wealth, The Nature Conservancy

Organisation type: Resource provider      Acronym: TNC

Name: --      Position: --

City: --      Country: --

E-mail: oceanwealth@tnc.org

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

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: --      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

## Marine Ecosystem Services Partnership



**Description:** The Marine Ecosystem Services Partnership (MESP; <http://www.marineecosystemservices.org/explore>) was proposed in early 2010 as an effort to create a virtual center for information and communication on the human uses of marine ecosystem services around the world.

**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:  
 Duke Nicholas Institute for Environmental Policy Solutions. Marine Ecosystem Services Partnership. URL: <http://www.marineecosystemservices.org/explore>.

**Temporal range:** --

**Geographical range:** Global

**Supplementary information:** --

**Purpose of creation:** Responding to the growing library of economic valuation data, the Partnership strives to provide up-to-date and easily accessible data for the use of policy makers, environmental managers, researchers, and marine ecosystem stakeholders. Not intended to replace other databases, the Partnership strives to be a community of practice through which data users and managers can work collectively to better integrate ecosystem services data with marine policy needs. This collaboration is aided with the use of tools such as the valuation mapper – a dynamic map allowing users to burrow down through different types of data by inputting spatial and thematic queries.

**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](mailto:info@marineecosystemservices.org)).

Dataset ID: UniDuke-001

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.

Main access/use constraint: Unrestricted

Other access/use constraints: None

Contact organisation: Nicholas Institute for Environmental Policy Solutions, Duke University

Organisation type: Custodian Acronym:

Name: -- Position: Managing Partner, Marine Ec

City: Durham Country: North Carolina (USA)

E-mail: info@marineecosystemsolutions.org

Web site: <https://nicholasinstitute.duke.edu/>

Data format(s): Online database

Distribution format(s): Online database Dataset size (uncompressed): --

Webpage and/or download: <http://mesp2.env.duke.edu/explore>

Other webpage:

Web map service:

Factsheet:

Resolution, scale: Not applicable

Reference system:

West bounding: --

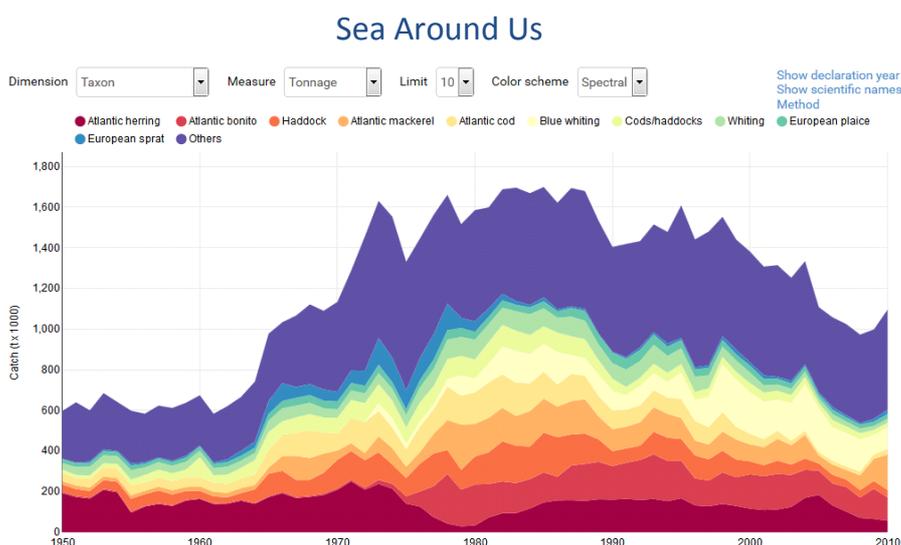
East bounding: --

South bounding: --

North bounding: --

Metadata standard: UNEP-WCMC Specific

Date of metadata: 17/08/2015



**Description:** Researchers with the University of British Columbia's Sea Around Us (SAU) project have launched a new web platform ([www.searoundus.org](http://www.searoundus.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 ([searoundus.org](http://searoundus.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 [searoundus.org](http://searoundus.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 subsidies, 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 [searoundus.org](http://searoundus.org).

**Temporal range:** 1950 - 2010

**Geographical range:** Global

Dataset ID: UBC-009

**Supplementary information:** --  
**Purpose of creation:**

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.

**Creation methodology:**

For detailed catch reconstruction and allocation methods, please visit: <http://www.searoundus.org/catch-reconstruction-and-allocation-methods/>. Other methodologies can also be found in the Sea Around Us Methods Index (<http://www.searoundus.org/sea-around-us-methods-index/>).

**Version:** --

**Data lineage:**

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.

**Category:**

Ecosystem services and natural capital

**Keywords:**

fisheries, catch reconstruction, marine, ecosystems, global, IUU, unreported catch, landings, discards

**Similar datasets:**

FishBase-001, SLBase-001

**Limitations:**

For detailed catch reconstruction and allocation methods, please visit: <http://www.searoundus.org/catch-reconstruction-and-allocation-methods/>.

**Maintenance frequency:**

Data are updated in intervals that are uneven in duration.

**Main access/use constraint:**

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.searoundus.org/citation-policy/>.

**Other access/use constraints:** --

**Contact organisation:**

Sea Around Us, University of British Columbia

**Organisation type:**

Custodian

**Acronym:**

UBC

**Name:**

Dr. Dirk Zeller

**Position:**

Senior Researcher

**City:**

Vancouver

**Country:**

Canada

**E-mail:**

d.zeller@fisheries.ubc.ca

**Web site:**

[www.searoundus.org](http://www.searoundus.org)

**Data format(s):**

Online database, PDF, Tabular (.xls, .csv, or .tab)

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

Reference system: Not applicable

West bounding: -180.0

East bounding: 180.0

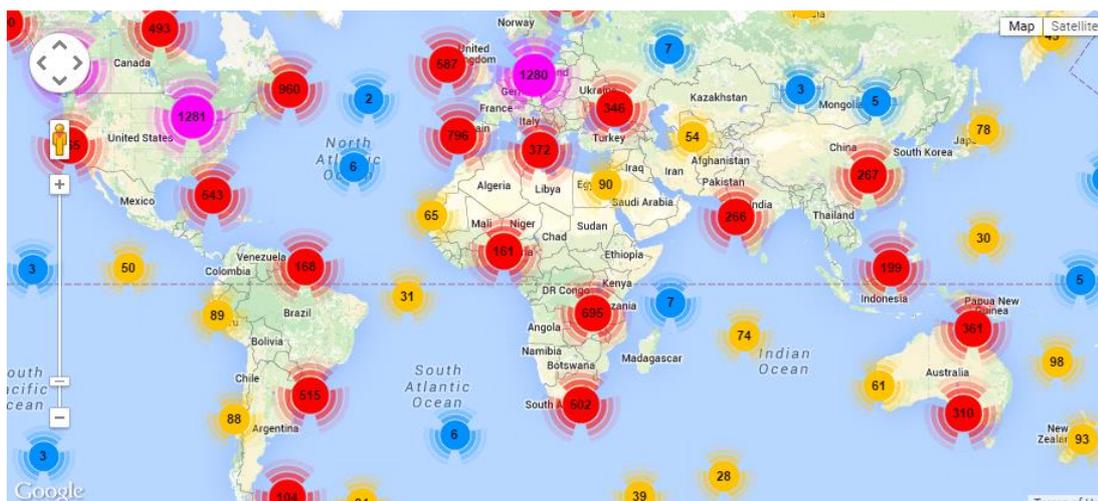
South bounding: -90.0

North bounding: 90.0

Metadata standard: UNEP-WCMC Specific

Date of metadata: 13/08/2015

## Living Planet Database (LPD)



**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):** Zoological Society of London and WWF. (2014). Living Planet Database. URL: [http://www.livingplanetindex.org/data\\_portal](http://www.livingplanetindex.org/data_portal).

**Other cited reference(s):**

Collen B, Loh J, Whitmee S, McRae L, Amin R, Baillie JEM. (2008). Monitoring change in vertebrate abundance: the Living Planet Index. *Conservation Biology* 23(2): 317-327. doi: 10.1111/j.1523-1739.2008.01117.x

Loh J, Green RE, Ricketts T, Lamoreux JF, Jenkins M, Kapos V, Randers J. (2005). The Living Planet Index: using species population time series to track trends in biodiversity. *Philosophical Transactions of the Royal Society of London B* 360: 289-295. doi: 10.1098/rstb.2004.1584

WWF (2014). The Living Planet Report 2014: Species and spaces, people and places. [McLellan, R., Iyengar, L., Jeffries, B., and N. Oerlemans (Eds.)]. Gland (Switzerland): World Wildlife Fund. URL: [http://wwf.panda.org/about\\_our\\_earth/all\\_publications/living\\_planet\\_report/](http://wwf.panda.org/about_our_earth/all_publications/living_planet_report/)

**Temporal range:** --

**Geographical range:** Global

**Supplementary information:** 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>

#### Purpose of creation:

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 planet's 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>.

#### Creation methodology:

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.

Dataset ID: WWF-002

Version: 2014

Data lineage: --

Category: Ecological status and impact

Keywords: Living Planet Index, LPI, WWF, ZSL, indicators, biodiversity, population trends

Similar datasets: None

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.

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

Main access/use constraint: Living Planet Index Data Use Policy ([http://www.livingplanetindex.org/documents/data\\_agreement.pdf](http://www.livingplanetindex.org/documents/data_agreement.pdf)).

Other access/use constraints: The full disclaimer can be obtained from the Data Use Policy ([http://www.livingplanetindex.org/documents/data\\_agreement.pdf](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](http://www.livingplanetindex.org/supporting_documents)).

Contact organisation: 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](http://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): --

Webpage and/or download: [http://www.livingplanetindex.org/data\\_portal](http://www.livingplanetindex.org/data_portal)

Other webpage:

Web map service:

Factsheet: [http://wwf.panda.org/about\\_our\\_earth/all\\_publications/living\\_planet\\_report/](http://wwf.panda.org/about_our_earth/all_publications/living_planet_report/)

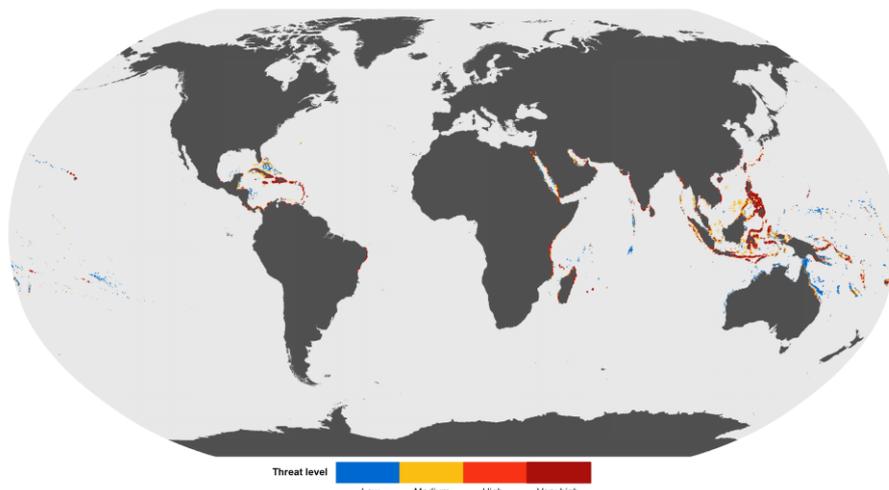
Resolution, scale: -- Reference system:

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

## Reefs at Risk Revisited (2011)



**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.

**Citation(s):** Burke L, Reynter K, Spalding M and Perry A (2011). Reefs At Risk Revisited. Washington (USA): World Resources Institute. 130 pp. URL: <http://www.wri.org/publication/reefs-risk-revisited>.

**Temporal range:** 2011

**Geographical range:** Global

**Supplementary information:** GIS Data Sets (links available from URL: <http://www.wri.org/publication/reefs-risk-revisited>):

- 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

KML Data Sets (links available from URL: <http://www.wri.org/publication/reefs-risk-revisited>):

- 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.

**Purpose of creation:** 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.

**Creation methodology:** 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 CO<sub>2</sub>, 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](http://www.wri.org/sites/default/files/technical_notes.pdf).

**Version:** 2011

**Data lineage:** This is an update from Reefs at Risk: A Map-Based Indicator of Threats to the World's Coral Reefs (1998), available at: <http://www.wri.org/publication/reefs-risk>.

**Category:** Ecological status and impact

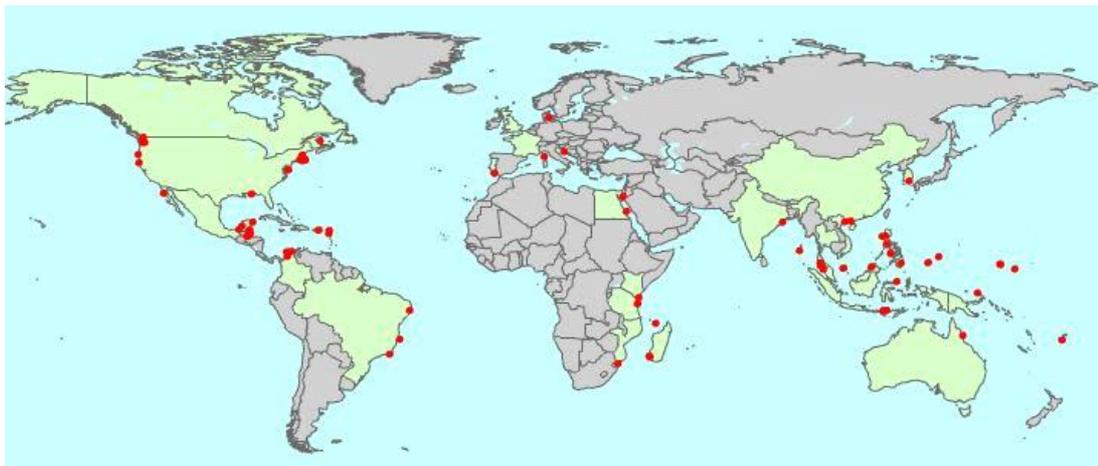
**Keywords:** coral reefs, climate change, ecosystem services, fisheries, oceans, water

**Similar datasets:** WCMC-008, WRI-001





## SeagrassNet: Global Seagrass Monitoring Network (2013)



**Description:** 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):** SeagrassNet (2010). A worldwide monitoring program on the status of seagrass resources and their threats. University of New Hampshire (New Hampshire, USA): SeagrassNet. URL: [www.seagrassnet.org](http://www.seagrassnet.org)

Short FT, McKenzie LJ, Coles RG, Vidler KP, Gaeckle JL (2006). SeagrassNet manual for scientific monitoring of seagrass habitat. Worldwide edition. University of New Hampshire (New Hampshire, USA): University of New Hampshire Publication. 75 pp. URL: [www.seagrassnet.org/sites/default/files/SeagrassNet\\_Manual\\_2006\\_Worldwide.pdf](http://www.seagrassnet.org/sites/default/files/SeagrassNet_Manual_2006_Worldwide.pdf)

**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 short et al. (2008) for full details of the monitoring methodology, and

Dataset ID: WaDNR-001

[www.seagrassnet.org/seagrassnet-monitoring-summary](http://www.seagrassnet.org/seagrassnet-monitoring-summary) for a summary of SeagrassNet monitoring.

Version: 2013

Data lineage:

Category: Ecological status and impact

Keywords: marine, coastal, benthic

Similar datasets:

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](mailto:fred.short@dnr.wa.gov) or [fredshort@gmail.com](mailto:fredshort@gmail.com)).

Contact organisation: Washington State Department of Natural Resources, Aquatic Resources Division

Organisation type: Custodian Acronym:

Name: Prof Fred Short Position: SeagrassNet Director

City: Olympia Country: Washington (USA)

E-mail: [fred.short@dnr.wa.gov](mailto:fred.short@dnr.wa.gov)

Web site: [www.SeagrassNet.org](http://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:

South bounding:

North bounding:

Metadata standard: UNEP-WCMC Specific

Date of metadata: 29/05/2015

## Ship Strike Database



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1946 - 2016

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A near-miss between a whale and a container vessel. Picture: CINMS/NOAA

**Ship Strikes: collisions between whales and vessels**

**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

**Data lineage:** 07 February 2017: records from NOAA's [National Oceanic and Atmospheric Association] Ship Strike Database (<http://www.nmfs.noaa.gov/pr/pdfs/shipstrike/lwssdata.pdf>) are being imported (source of the information: S. Ferris, pers. Comm.).

**Category:** Ecological status and impact

**Keywords:** whale, shipping, ship strike, marine, pelagic, deep seas, cetacean, collision

#### Similar datasets:

**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:**

**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>

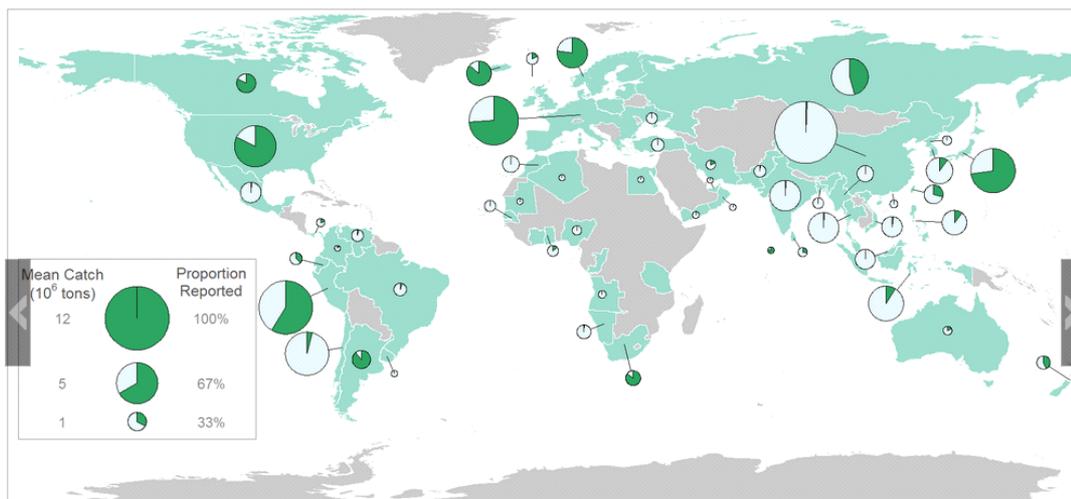
**Web map service:**

Dataset ID: IWC-001

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:	07/02/2017

## RAM Legacy Stock Assessment Database



- 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 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)'.

Other access/use constraints: 'Fair Use' Policy. Full details are available from <http://ramlegacy.marinebiodiversity.ca/ram-legacy-stock-assessment-database/ram-legacy-stock-assessment-database-fair-use-policy>.

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/>

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 24 Mb (uncompressed):

Webpage and/or download: <http://ramlegacy.org/>

Other webpage:

Web map service:

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

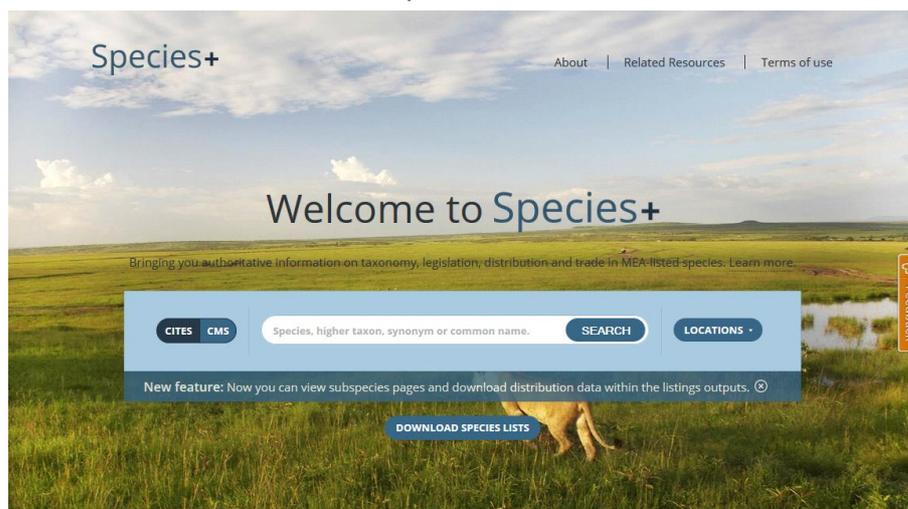
Metadata standard: UNEP-WCMC Specific

Date of metadata: 09/11/2016





## Species+



**Description:** Species+ ([www.speciesplus.net](http://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 (2015). The Species+ Website. Nairobi, Kenya. Compiled by UNEP-WCMC, Cambridge, UK. Available at: [www.speciesplus.net](http://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](http://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](http://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.

<b>Creation methodology:</b>	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.		
<b>Version:</b>	--		
<b>Data lineage:</b>	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.		
<b>Category:</b>	Trade		
<b>Keywords:</b>	taxonomy, species, CMS, CITES, legislation, distribution, trade, MEA		
<b>Similar datasets:</b>	None		
<b>Limitations:</b>	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 ( <a href="mailto:species@unep-wcmc.org">species@unep-wcmc.org</a> ) so that the website can be corrected.		
<b>Maintenance frequency:</b>	Data are repeatedly and frequently updated.		
<b>Main access/use constraint:</b>	Terms and Conditions of Use of Species+ ( <a href="http://www.speciesplus.net/terms-of-use">http://www.speciesplus.net/terms-of-use</a> ).		
<b>Other access/use constraints:</b>	None		
<b>Contact organisation:</b>	UNEP World Conservation Monitoring Centre		
<b>Organisation type:</b>	<b>Custodian</b>	<b>Acronym:</b>	UNEP-WCMC
<b>Name:</b>	Dr. Kelly Malsch	<b>Position:</b>	Head of Programme, Species
<b>City:</b>	Cambridge	<b>Country:</b>	United Kingdom
<b>E-mail:</b>	<a href="mailto:kelly.malsch@unep-wcmc.org">kelly.malsch@unep-wcmc.org</a>		
<b>Web site:</b>	<a href="http://www.unep-wcmc.org">http://www.unep-wcmc.org</a>		
<b>Data format(s):</b>	Online database, Tabular (.xls, .csv, or .tab)		
<b>Distribution format(s):</b>	Online database, Tabular (.xls, .csv, or .tab)	<b>Dataset size (uncompressed):</b>	
<b>Webpage and/or download:</b>	<a href="http://www.speciesplus.net">http://www.speciesplus.net</a>		

Dataset ID: WCMC-037

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: 16/07/2015

## 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):**

BirdLife International, Conservation International, IUCN, UNEP-WCMC [year]. Integrated Biodiversity Assessment Tool (IBAT). URL: <https://www.ibat-alliance.org/ibat-conservation>, <https://www.ibatforbusiness.org/>

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 accessed from the Integrated Biodiversity Assessment Tool (IBAT). URL: <https://www.ibat-alliance.org/ibat-conservation>

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:**

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**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: N/A

#### 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](mailto: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](https://www.ibat-alliance.org/ibat-conservation/terms_of_use). For IBAT for Business Terms of Use, please visit: <https://www.ibatforbusiness.org/termsfuse>.

**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](mailto: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

<b>Organisation type:</b>	Custodian	<b>Acronym:</b>	IBAT
<b>Name:</b>		<b>Position:</b>	IBAT Programme Director
<b>City:</b>		<b>Country:</b>	
<b>E-mail:</b>			

**Web site:** <https://www.ibat-alliance.org/ibat-conservation/login>

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

<b>Distribution format(s):</b>	Online database, Online maps, Vector (point; .shp), Vector (polygon; .shp)	<b>Dataset size (uncompressed):</b>	--
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**Webpage and/or download:** <https://www.ibat-alliance.org/ibat-conservation/login>

**Other webpage:** <https://www.ibatforbusiness.org/>

**Web map service:**

**Factsheet:**



Dataset ID: IBAT-001

Resolution, scale: --

West bounding: -180.0

South bounding: -90.0

Metadata standard: UNEP-WCMC Specific

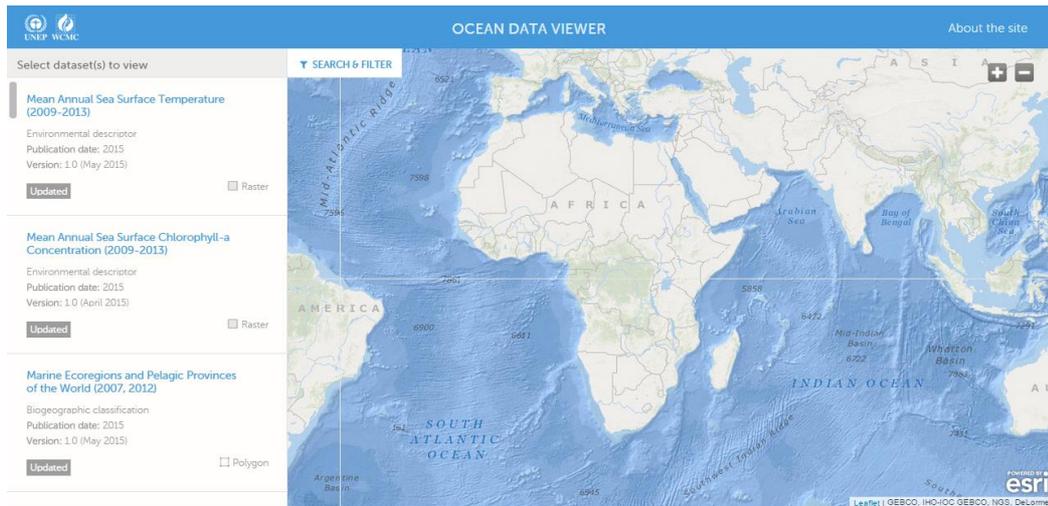
Reference system: WGS 1984

East bounding: 180.0

North bounding: 90.0

Date of metadata: 10/11/2016

## Ocean Data Viewer (ODV)



**Description:** The Ocean Data Viewer 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:

UNEP-WCMC (2016). Ocean Data Viewer. Cambridge (UK): UNEP-WCMC. URL: <http://data.unep-wcmc.org/>

**Temporal range:** --

**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.

**Category:** Biodiversity-related data portal

**Keywords:** marine, coastal, habitat, spatial data, biogeography, biodiversity

**Similar datasets:** --

**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](mailto: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 License (excluding WDPA). See [www.unep-wcmc.org/policies/general-data-license-excluding-wdpa#data\\_policy](http://www.unep-wcmc.org/policies/general-data-license-excluding-wdpa#data_policy) and [www.unep-wcmc.org/policies](http://www.unep-wcmc.org/policies). For commercial use, please contact [business-support@unep-wcmc.org](mailto:business-support@unep-wcmc.org).

**Other access/use constraints:** --

Dataset ID: WCMC-039

Contact organisation: UNEP World Conservation Monitoring Centre

Organisation type: Custodian      Acronym: UNEP-WCMC

Name: Dr. Steve Fletcher      Position: Head of Programme

City: Cambridge      Country: United Kingdom

E-mail: [steve.fletcher@unep-wcmc.org](mailto:steve.fletcher@unep-wcmc.org)

Web site: [www.unep-wcmc.org](http://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      Dataset size (uncompressed): --

Webpage and/or download: <http://data.unep-wcmc.org>

Other webpage:

Web map service:

Factsheet:

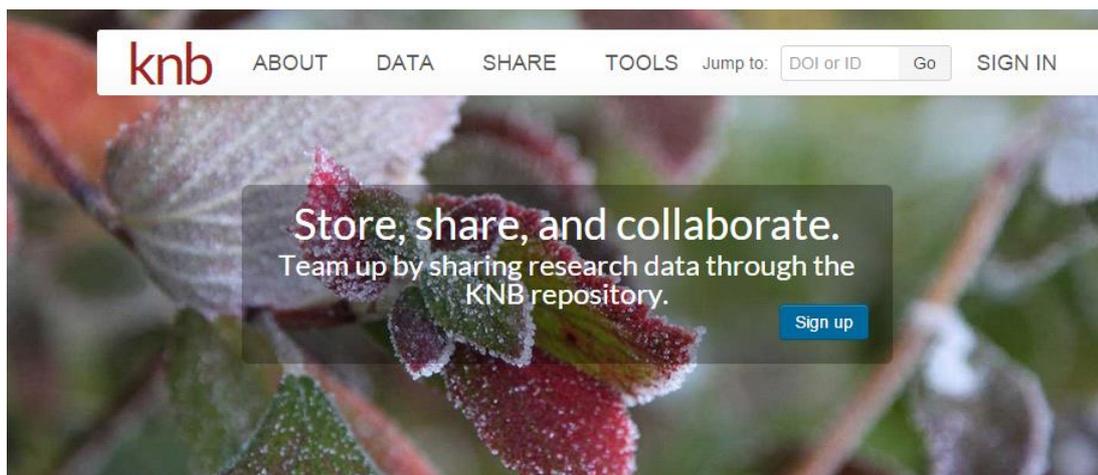
Resolution, scale: --      Reference system: WGS 1984

West bounding: -180.0      East bounding: 180.0

South bounding: -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



Dataset ID: NCEAS-004

Factsheet:

Resolution, scale: --

West bounding:

South bounding:

Metadata standard: UNEP-WCMC Specific

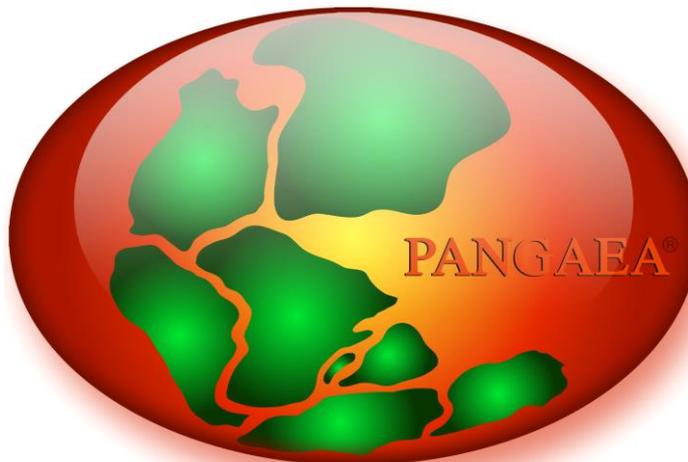
Reference system: Not applicable

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:** --

**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 principle investigator (PI) who may be asked for access.

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 principle 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).

Archiving follows the Recommendations of the Commission on Professional Self Regulation in Science

([http://www.dfg.de/download/pdf/dfg\\_im\\_profil/reden\\_stellungnahmen/download/empfehlung\\_wiss\\_praxis\\_1310.pdf](http://www.dfg.de/download/pdf/dfg_im_profil/reden_stellungnahmen/download/empfehlung_wiss_praxis_1310.pdf)) for safeguarding good scientific practice.

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:** --

**Version:** N/A

**Data lineage:** --

**Category:** Biodiversity-related data portal

**Keywords:** earth systems, environmental science, data, open source, atmospheric

**Similar datasets:** --

**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:** Custodian **Acronym:** AWI

**Name:** Dr. Stefanie Schumacher **Position:** Data Librarian

**City:** Bremerhaven **Country:** Germany

**E-mail:** [sschumacher@pangaea.de](mailto:sschumacher@pangaea.de)

**Web site:** [www.awi.de](http://www.awi.de)

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

Dataset ID: AWI-001

Distribution format(s): Online database

Dataset size (uncompressed): --

Webpage and/or download: <http://www.pangaea.de>

Other webpage:

Web map service:

Factsheet:

Resolution, scale: --

West bounding:

South bounding:

Metadata standard: UNEP-WCMC Specific

Reference system:

East bounding:

North bounding:

Date of metadata: 17/08/2015



[Home](#) | [FishBase Book](#) | [Best Photos](#) | [Hints](#) | [Guest Book](#) | [Download](#) | [Links](#) | [Fish Forum](#) | [Fish Quiz](#) |  
[Fish Watcher](#) | [Ichthyology Course](#) | [LarvaBase](#) | [Team](#) | [Collaborators](#) | [Quick Identification](#) | [Services](#)

**Common Name**

(e.g. rainbow trout)   
[A](#) [B](#) [C](#) [D](#) [E](#) [F](#) [G](#) [H](#) [I](#) [J](#) [K](#) [L](#) [M](#) [N](#) [O](#) [P](#) [Q](#) [R](#) [S](#) [T](#) [U](#) [V](#) [W](#) [X](#) [Y](#) [Z](#)  
[中文](#) [العربية](#) [Русский](#) [日本語](#) [हिन्दी](#) [Ελληνικά](#) [More scripts...](#)

**Scientific Name**

[Advanced Match](#)  
**Genus**   (e.g. Rhinocodon)   
**Species**   (e.g. typus)  Random Species  
**Genus + Species**    Sp. ID

**Description:** FishBase ([www.fishbase.org](http://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.

**Citation(s):** 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:  
 Froese R and Pauly D (eds.) (2015) FishBase. World Wide Web electronic publication. [www.fishbase.org](http://www.fishbase.org), version [VERSION NUMBER].

**Temporal range:** --

**Geographical range:** Global

**Supplementary information:** 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.

**Purpose of creation:** 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.

**Creation methodology:**  
**Version:** 04/2015

**Data lineage:** A new version of the database is released every even month of the year.

**Category:** Biodiversity-related data portal

**Keywords:** taxonomy, species, fish, finfish, marine, global, coastal, Sea Around Us

**Similar datasets:** SLBase-001, GBIF-001, OBIS-003, CoL-001

**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/> 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:**

**Name:** Dr. Rainer Froese **Position:** FishBase Coordinator

**City:** Kiel **Country:** Germany

**E-mail:** [rfroese@geomar.de](mailto:rfroese@geomar.de)

**Web site:** <http://www.fishbase.de/rfroese/>

**Data format(s):** CD-ROM, Online database

**Distribution format(s):** CD-ROM, Online database **Dataset size (uncompressed):** --

**Webpage and/or download:** <http://www.fishbase.org>

**Other webpage:**

**Web map service:**

**Factsheet:**

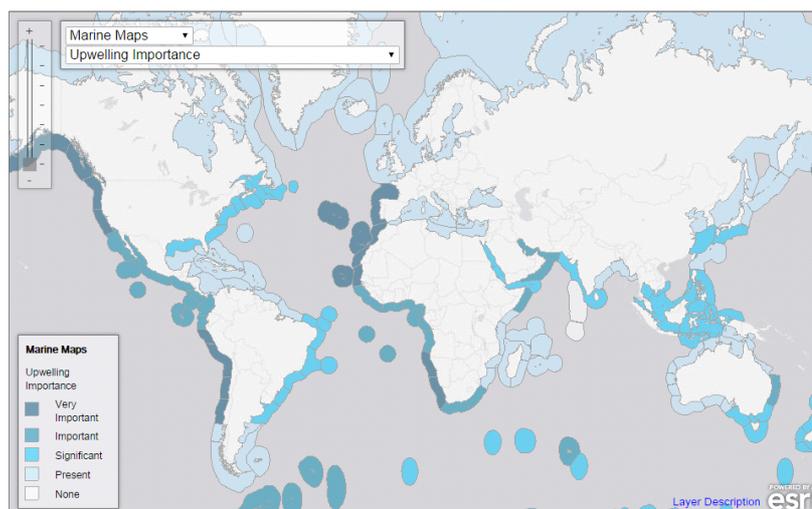
**Resolution, scale:** Not applicable **Reference system:** Not applicable

**West bounding:** **East bounding:**

**South bounding:** **North bounding:**

**Metadata standard:** UNEP-WCMC Specific **Date of metadata:** 16/07/2015

## 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.

**Citation(s):** Hoekstra JM, Molnar JL, Jennings M, Revenga C, Spalding MD, Boucher TM, Robertson JC, Heibel TJ, Ellison K (2010) The Atlas of Global Conservation: Changes, Challenges, and Opportunities to Make a Difference (ed. Molnar JL). Berkeley: University of California Press. URL: <http://maps.tnc.org/globalmaps.html>

**Temporal range:** --

**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](http://maps.tnc.org/globalmaps/globalmaps_original.html)).

**Category:** Biodiversity-related data portal

**Keywords:** conservation, global, GIS, maps, marine, terrestrial, freshwater, nature

**Similar datasets:** --

Dataset ID: TNC-002

**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 **Position:** Senior Cartographer/Analyst

**City:** -- **Country:** USA

**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:** -- **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:** 17/08/2015

## SeaLifeBase



ver. (04/2015)

SeaLifeBase

( 66300 Species, 31100 Common names, 12200 Pictures, 22100 References, 270 Collaborators )

[Home](#) | [Collaborators](#)**Common Name**contains  (e.g. turtle)**Scientific Name****Genus**is  (e.g. Caretta)**Species**is 

(e.g. caretta)

**Scientific name**

(e.g. Caretta caretta)

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

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

**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:

Palomares, M.L.D. and D. Pauly. Editors. 2015. SeaLifeBase. World Wide Web electronic publication. [www.sealifebase.org](http://www.sealifebase.org), version [VERSION NUMBER].

**Temporal range:**

**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.



Dataset ID: SLBase-001

Data format(s): Online database

Distribution format(s): Online database

Dataset size (uncompressed):

Webpage and/or download: <http://www.sealifebase.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: 09/11/2016

Catalogue Of Life

**Catalogue of Life: 30th July 2015**  
indexing the world's known species

Species 2000 ITIS



English French Spanish Chinese Russian Portuguese Dutch German Polish Lithuanian Thai Vietnamese

**Search the Catalogue of Life - updated edition around the year**

Search for:

Include extinct taxa (+)

Match whole words only

**Description:** 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:  
Roskov Y., Abucay L., Orrell T., Nicolson D., Kunze T., Flann C., Bailly N., Kirk P., Bourgoin T., DeWalt R.E., Decock W., De Wever A., eds. (2015). Species 2000 & ITIS Catalogue of Life, 30th July 2015. Digital resource at [www.catalogueoflife.org/col](http://www.catalogueoflife.org/col). Species 2000: Naturalis, Leiden, the Netherlands. ISSN 2405-8858.

How to cite the Annual Checklist on DVD:  
Roskov Y., Abucay L., Orrell T., Nicolson D., Kunze T., Culham A., Bailly N., Kirk P., Bourgoin T., DeWalt R.E., Decock W., De Wever A., eds. (2015). Species 2000 & ITIS Catalogue of Life, 2015 Annual Checklist. DVD. Species 2000: Naturalis, Leiden, the Netherlands. ISSN 2405-917X.

How to cite the Annual Checklist on the web:  
Roskov Y., Abucay L., Orrell T., Nicolson D., Kunze T., Culham A., Bailly N., Kirk P., Bourgoin T., DeWalt R.E., Decock W., De Wever A., eds. (2015). Species 2000 & ITIS Catalogue of Life, 2015 Annual Checklist. Digital resource at [www.catalogueoflife.org/annual-checklist/2015](http://www.catalogueoflife.org/annual-checklist/2015). Species 2000: Naturalis, Leiden, the Netherlands. ISSN 2405-884X.

For citing individual databases, please refer to the following webpage:  
<http://www.catalogueoflife.org/col/info/cite>.

**Temporal range:** --

**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.

#### Purpose of creation:

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.

#### Creation methodology:

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

**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](mailto:support@sp2000.org)

**Web site:** [www.sp2000.org](http://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)



**Description:** 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.

**Citation(s):** WoRMS Editorial Board (2015). World Register of Marine Species. Available from <http://www.marinespecies.org> at VLIZ. Accessed [Insert date].

**Temporal range:** Unknown

**Geographical range:** Global

**Supplementary information:**

**Purpose of creation:** 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

Dataset ID: VLIZ-004

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:

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

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      Position: Project Manager

City: Ostend      Country: Belgium

E-mail: info@marineregions.org

Web site: [www.marineregions.org](http://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): N/A

Webpage and/or download: <http://www.marinespecies.org/>

Other webpage:

Web map service:

#### Factsheet:

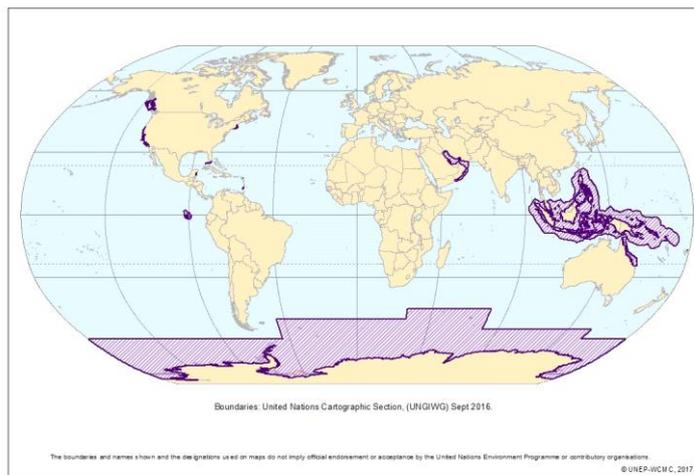
Resolution, scale: Not applicable      Reference system: Not applicable

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

## 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).

**Citation(s):** UNEP-WCMC (2017). Global distribution of spatial planning in the marine environment. Unpublished dataset. Cambridge (UK): UNEP World Conservation Monitoring Centre.

**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 (km<sup>2</sup>) 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".

#### Creation methodology:

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

#### Similar datasets:

**Limitations:** 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.

Dataset ID: WCMC-042

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

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

**Other access/use constraints:**

**Contact organisation:** UNEP World Conservation Monitoring Centre

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

**Name:** Dr. Steve Fletcher **Position:** Head of Programme

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

**E-mail:** [steve.fletcher@unep-wcmc.org](mailto:steve.fletcher@unep-wcmc.org)

**Web site:** [www.unep-wcmc.org](http://www.unep-wcmc.org)

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

**Distribution format(s):** Vector (polygon; .shp) **Dataset size (uncompressed):** 69.9 Mb

**Webpage and/or download:**

**Other webpage:**

**Web map service:**

**Factsheet:**

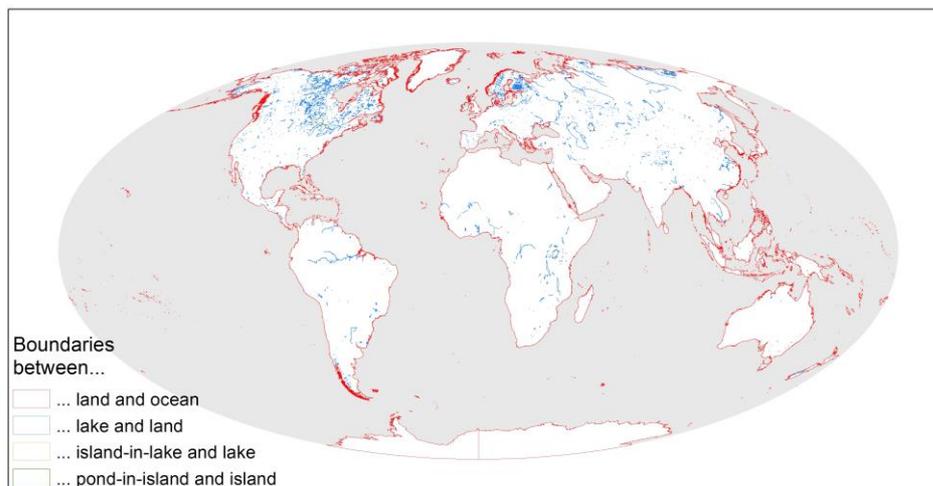
**Resolution, scale:** Not applicable **Reference system:** WGS 1984

**West bounding:** -180.0 **East bounding:** 180.0

**South bounding:** -90.0 **North bounding:** 90.0

**Metadata standard:** UNEP-WCMC Specific **Date of metadata:** 07/02/2017

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



**Description:** The Global Self-consistent, Hierarchical, High-resolution Geography Database (GSHHG) 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/](http://www.ngdc.noaa.gov/mgg/shorelines/data/gshhg/latest/)

Other cited reference(s):

Wessel P, Smith WHF (1996). A global, self-consistent, hierarchical, high-resolution shoreline database. *Journal of Geophysical Research* 101: 8741-8743

**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 for custom applications requiring basic geography data.

**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-islands-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.

Gorny AJ (1977). World Data Bank II General User Guide Rep. PB 271869, 10 pp., Central Intelligence Agency, Whashington DC

Soluri EA, Woodson VA (1990). World Vector Shoreline, Int. Hydrograph. Rev., LXVII(1), 27–35

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 it 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](http://www.gnu.org/licenses/lgpl.html). For commercial use, see [www.gnu.org/licenses/gpl-faq.html#GPLCommercially](http://www.gnu.org/licenses/gpl-faq.html#GPLCommercially).

**Other access/use constraints:** Please notify Dr. Paul Wessel ([pwessel@hawaii.edu](mailto:pwessel@hawaii.edu)) and Dr. Walter H.F. Smith ([Walter.HF.Smith@noaa.gov](mailto:Walter.HF.Smith@noaa.gov)) if any changes are made to the GSHHG data set for

Dataset ID: UniHaw-001

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:	<a href="http://www.soest.hawaii.edu">www.soest.hawaii.edu</a>		
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)
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Webpage and/or download: <http://www.soest.hawaii.edu/pwessel/gshhg>

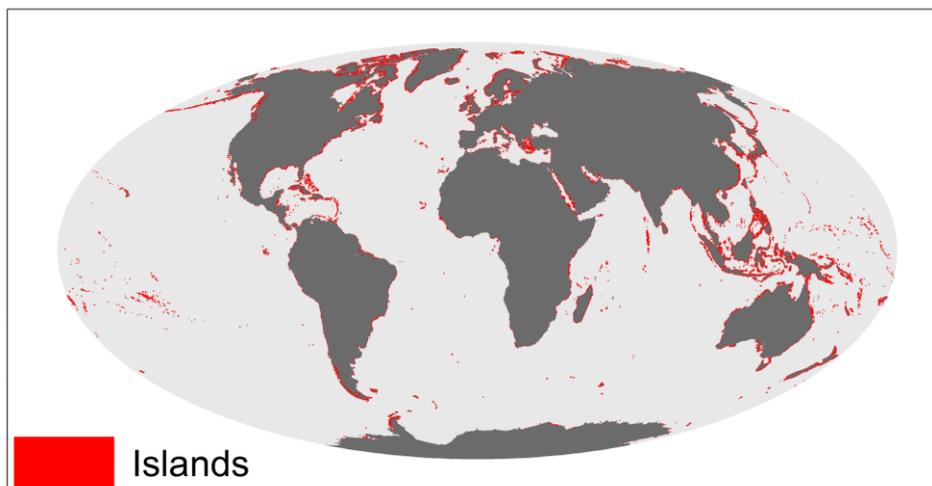
Other webpage: <http://www.ngdc.noaa.gov/mgg/shorelines/gshhs.html>

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

## 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.

**Citation(s):** UNEP-WCMC, Depraetere C, Dahl AL (2010). Global distribution of islands. Global Island Database (version 1). Based on Wessel and Smith (1996). Full technical documentation is in Depraetere (2007). Cambridge (UK): UNEP World Conservation Monitoring Centre.

Other cited reference(s):

Depraetere C (2007). IBPoW Database. A technical note on a global dataset of islands. Global Islands Network. 58 pp.

Wessel P, Smith WHF (1996). A global, self-consistent, hierarchical, high-resolution shoreline database. *Journal of Geophysical Research* 101: 8741-8743

**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 the Global Island Database (GID) project, phase 1 (<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.

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

**Other access/use constraints:** Interested users should contact [marine@unep-wcmc.org](mailto:marine@unep-wcmc.org).

**Contact organisation:** UNEP World Conservation Monitoring Centre

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

**Name:** Dr. Steve Fletcher **Position:** Head of Programme

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

**E-mail:** [steve.fletcher@unep-wcmc.org](mailto:steve.fletcher@unep-wcmc.org)

**Web site:** [www.unep-wcmc.org](http://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

**Webpage and/or download:** [See metadata](#)

**Other webpage:**



Dataset ID: WCMC-005

Web map service:

Factsheet:

Resolution, scale: Not applicable

West bounding: -180.0

South bounding: -90.0

Metadata standard: UNEP-WCMC Specific

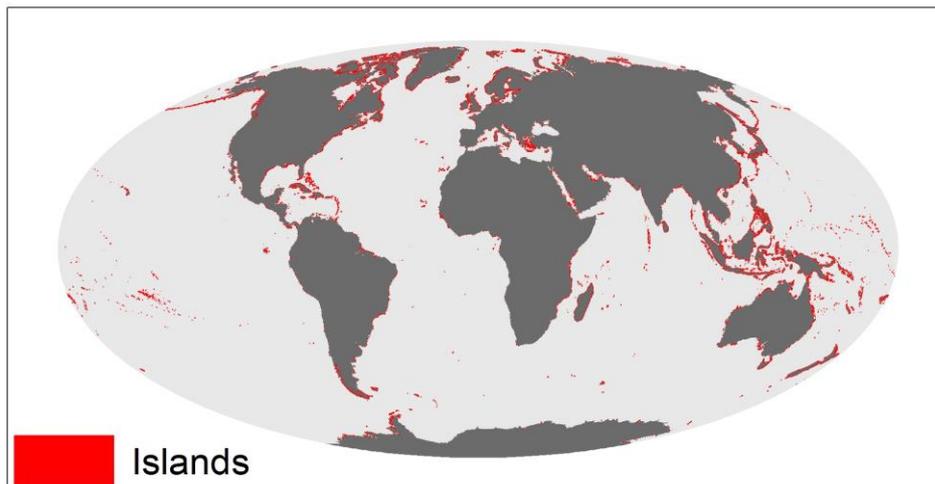
Reference system: WGS 1984

East bounding: 180.0

North bounding: 83.6

Date of metadata: 08/07/2015

## 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.

**Citation(s):** UNEP-WCMC (2015). Global distribution of islands. Global Island Database (version 2.1, November 2015). Based on Open Street Map data (© OpenStreetMap contributors). Cambridge (UK): UNEP World Conservation Monitoring Centre

**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 significant 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](mailto: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)'.

**Other access/use constraints:** "Attributes": UNEP-WCMC General Data License (excluding WDPA). See [www.unep-wcmc.org/policies/general-data-license-excluding-wdpa#data\\_policy](http://www.unep-wcmc.org/policies/general-data-license-excluding-wdpa#data_policy) and [www.unep-wcmc.org/policies](http://www.unep-wcmc.org/policies). For commercial use, please contact [business-support@unep-wcmc.org](mailto:business-support@unep-wcmc.org).

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:** UNEP World Conservation Monitoring Centre

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

**Name:** Dr. Steve Fletcher **Position:** Head of Programme

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

**E-mail:** [steve.fletcher@unep-wcmc.org](mailto:steve.fletcher@unep-wcmc.org)

**Web site:** [www.unep-wcmc.org](http://www.unep-wcmc.org)

**Data format(s):** File geodatabase (.fgdb)

Dataset ID: WCMC-031

Distribution format(s):	File geodatabase (.fgdb), Vector (polygon; .shp)	Dataset size (uncompressed):	311 Mb
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Webpage and/or download: [marine@unep-wcmc.org](mailto:marine@unep-wcmc.org)

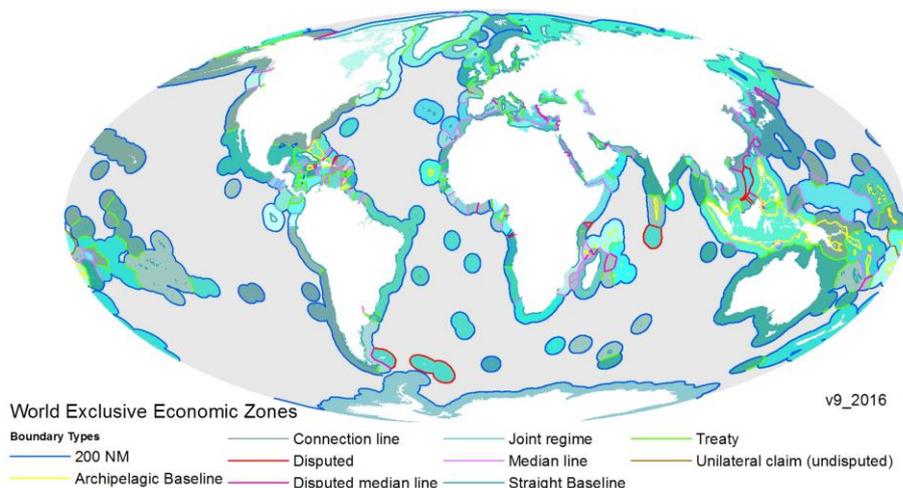
Other webpage:

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

## 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.

**Citation(s):** Flanders Marine Institute (VLIZ) (2016). Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 9. Ostend (Belgium): Flanders Marine Institute. URL: <http://www.marineregions.org> ; <http://dx.doi.org/10.14284/242>

**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:**

**Creation methodology:** Full details on the methodology can be found at <http://www.marineregions.org/eezmethodology.php>.

**Version:** 9.0 (2016)

**Data lineage:** Boundaries are dynamic due to new agreements and changes of the political landscape.

**Category:** Administration

**Keywords:** marine, coastal, high seas, EEZ

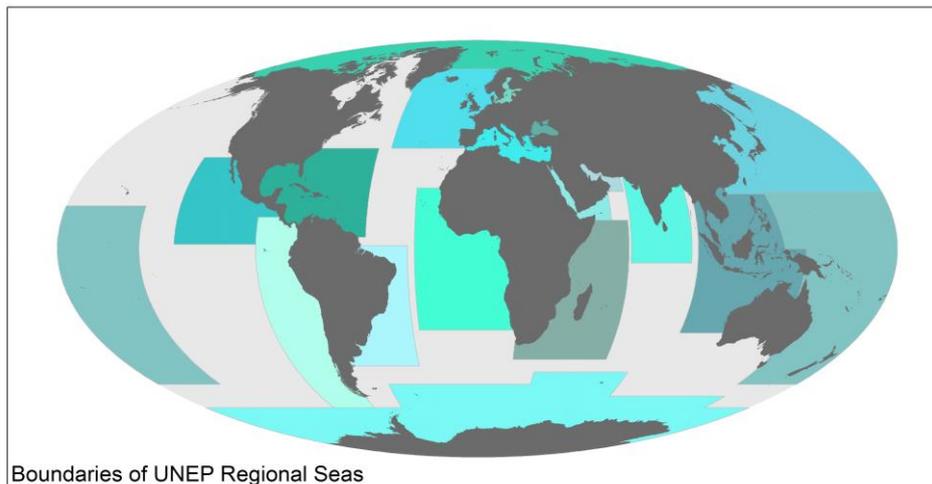
**Similar datasets:**

**Limitations:** Many countries have yet to agree maritime boundaries with neighbouring countries. Remarks and corrections can be sent to [info@marineregions.org](mailto: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: <http://www.marineregions.org/downloads.php#eez>.



## Regional Seas Boundaries (unofficial)



Boundaries of UNEP Regional Seas

**Description:** This unpublished and unofficial dataset shows UNEP (United Nations Environment Programme) and non-UNEP Regional Seas boundaries. At present, there are 13 Regional Seas programmes established under the auspices of UNEP: Black Sea, Wider Caribbean, East Asian Seas, Eastern Africa, South Asian Seas, ROPME Sea Area, Mediterranean, North-East Pacific, Northwest Pacific, Red Sea and Gulf of Aden, South-East Pacific, Pacific, and Western Africa. Six of these programmes, are directly administered by UNEP. Furthermore, five partner programmes for the Antarctic, Arctic, Baltic Sea, Caspian Sea and North-East Atlantic Regions are members of the Regional Seas family.

**Citation(s):** UNEP-WCMC. Regional Seas boundaries. Unpublished dataset. Cambridge (UK): UNEP World Conservation Monitoring Centre.

**Temporal range:** Not applicable

**Geographical range:** Global

**Supplementary information:** Attribute table: name of the regional sea (unep\_name).

**Purpose of creation:** This dataset was developed by UNEP-WCMC, for internal use, to provide a global dataset of the boundaries of Regional Seas that identifies the extent of the area governed by each individual body.

**Creation methodology:** The dataset is based on the definitions of the governing bodies/conventions related to each area.

**Version:**

**Data lineage:**

**Category:** Administration

**Keywords:** marine, coastal, high seas

**Similar datasets:** None

**Limitations:** This dataset should not be used externally as the boundaries have not been validated by the relevant authorities.

Dataset ID: UNEP-002

Maintenance frequency: Data are not being updated.

Main access/use constraint: Internal UNEP-WCMC use only.

Other access/use constraints:

Contact organisation: UNEP World Conservation Monitoring Centre

Organisation type: Owner Acronym: UNEP-WCMC

Name: Dr. Steve Fletcher Position: Head of Programme

City: Cambridge Country: United Kingdom

E-mail: [steve.fletcher@unep-wcmc.org](mailto:steve.fletcher@unep-wcmc.org)

Web site: [www.unep-wcmc.org](http://www.unep-wcmc.org)

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

Distribution format(s): Dataset size (uncompressed): 98.2 Kb

Webpage and/or download: <http://www.unep.org/regionalseas/>

Other webpage:

Web map service:

Factsheet: [http://wcmc.io/regional\\_seas](http://wcmc.io/regional_seas)

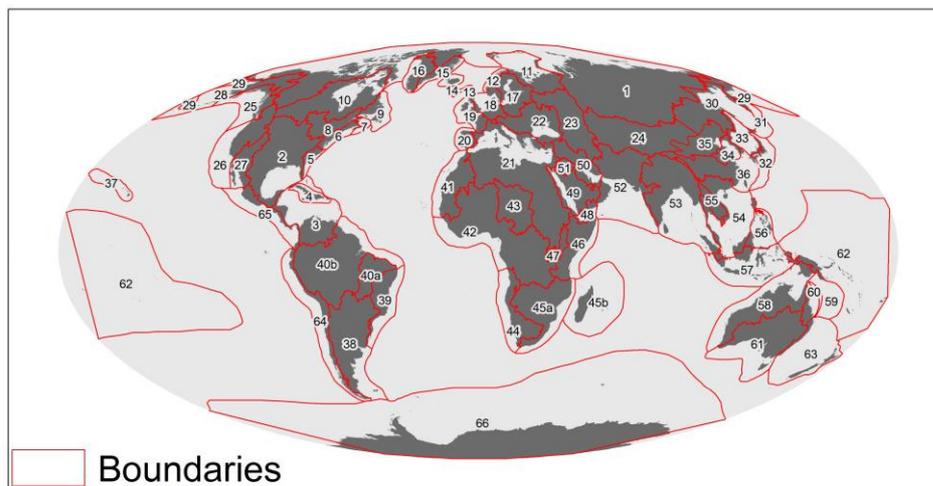
Resolution, scale: Not applicable Reference system: WGS 1984

West bounding: -180.0 East bounding: 180.0

South bounding: -89.9 North bounding: 89.9

Metadata standard: UNEP-WCMC Specific Date of metadata: 29/05/2015

## Boundaries of the Global International Waters Assessment (2003)



**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.

**Citation(s):** UNEP (United Nations Environment Programme) (2003a). Global marine assessments: a survey of global and regional marine environmental assessments and related scientific activities. UNEP-WCMC, UNEP, UNESCO-IOC. Cambridge (UK): UNEP World Conservation Monitoring Centre. 132 pp.

UNEP (2003b). Boundaries of the Global International Waters Assessment. In Supplement to UNEP (2003a). Nairobi (Kenya): United Nations Environment Programme.

**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:**

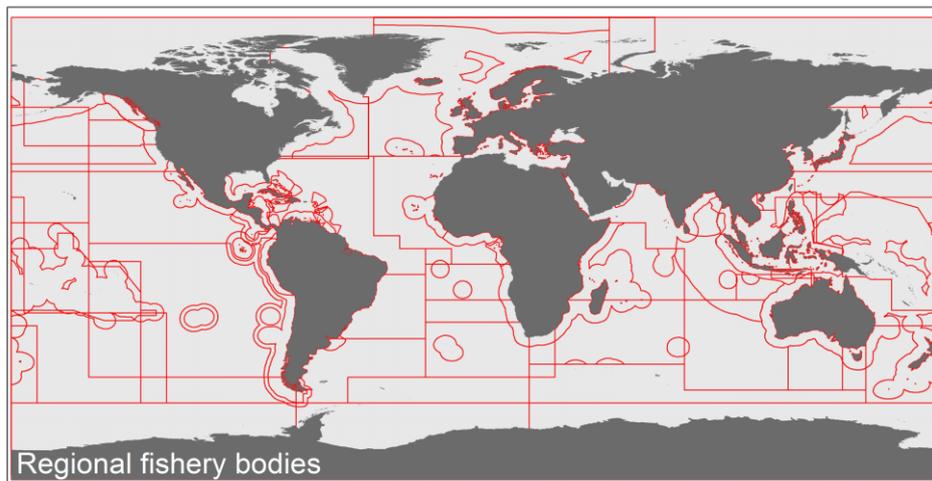
**Category:** Administration

**Keywords:** marine, coastal

**Similar datasets:** None



## 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):** FAO (Food and Agriculture Organization of the United Nations) (2001-2013). Regional Fishery Bodies. Fishery Governance Fact Sheets. Rome (Italy): FAO Fisheries and Aquaculture Department. URL: [www.fao.org/fishery/rfb/en](http://www.fao.org/fishery/rfb/en)

FAO (2010). Boundary data for Regional Fishery Bodies. In Supplement: FAO (2001-2013). Rome (Italy): FAO Fisheries and Aquaculture Department. URL: [www.fao.org:80/geonetwork?uuid=cc7dbf20-1b8b-11dd-8bbb-0017f293bd28](http://www.fao.org:80/geonetwork?uuid=cc7dbf20-1b8b-11dd-8bbb-0017f293bd28)

**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-0017f293bd28>.

<b>Purpose of creation:</b>	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.		
<b>Creation methodology:</b>	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.		
<b>Version:</b>	2010		
<b>Data lineage:</b>	This dataset is the 2010 map, updated August 2016.		
<b>Category:</b>	Administration		
<b>Keywords:</b>	marine, coastal, high seas, deep sea, fisheries, FAO		
<b>Similar datasets:</b>	None		
<b>Limitations:</b>	The boundaries have not been validated by the relevant authorities.		
<b>Maintenance frequency:</b>	Data are updated in intervals that are uneven in duration.		
<b>Main access/use constraint:</b>	Unrestricted		
<b>Other access/use constraints:</b>	Please cite the data source in all publications.		
<b>Contact organisation:</b>	Food and Agriculture Organization of the United Nations		
<b>Organisation type:</b>	<b>Owner</b>	<b>Acronym:</b>	FAO
<b>Name:</b>	Fabio Carocci	<b>Position:</b>	Fishery Research Assistant
<b>City:</b>	Rome	<b>Country:</b>	Italy
<b>E-mail:</b>	Fabio.Carocci@fao.org		
<b>Web site:</b>	<a href="http://www.fao.org">www.fao.org</a>		
<b>Data format(s):</b>	KML (.kml or .kmz), Vector (polygon; .shp)		
<b>Distribution format(s):</b>	KML (.kml or .kmz), Vector (polygon; .shp)	<b>Dataset size (uncompressed):</b>	20 Mb
<b>Webpage and/or download:</b>	<a href="http://www.fao.org:80/geonetwork?uuid=cc7dbf20-1b8b-11dd-8bbb-0017f293bd28">http://www.fao.org:80/geonetwork?uuid=cc7dbf20-1b8b-11dd-8bbb-0017f293bd28</a>		
<b>Other webpage:</b>	<a href="http://www.fao.org/geonetwork/srv/en/main.home">http://www.fao.org/geonetwork/srv/en/main.home</a>		
<b>Web map service:</b>	<a href="http://data.fao.org/maps/wms">http://data.fao.org/maps/wms</a>		

Factsheet:

Dataset ID: FAO-001

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)



<b>Description:</b>	This dataset shows the global distribution of dive centres, some of which are PADI (Professional Association of Diving Instructors) affiliated.
<b>Citation(s):</b>	UNEP-WCMC (2001). Global Distribution of Dive Centres (ver 1.2). In supplement to: Spalding et al. (2001). Cambridge (UK): UNEP World Conservation Monitoring Centre. URL: <a href="http://data.unep-wcmc.org/datasets/27">http://data.unep-wcmc.org/datasets/27</a>
	Other cited reference(s): Spalding MD, Ravilious C, Green EP (2001). World Atlas of Coral Reefs. Berkeley (California, USA): The University of California Press. 436 pp. URL: <a href="https://archive.org/details/worldatlasofcora01spal">https://archive.org/details/worldatlasofcora01spal</a>
<b>Temporal range:</b>	2001
<b>Geographical range:</b>	Global
<b>Supplementary information:</b>	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.
<b>Purpose of creation:</b>	This dataset was created to accompany the World Atlas of Coral Reefs (map 2.1 in Spalding et al. 2001).
<b>Creation methodology:</b>	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.
<b>Version:</b>	1.2 (June 2015)
<b>Data lineage:</b>	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.
<b>Category:</b>	Administration
<b>Keywords:</b>	coastal, marine, human
<b>Similar datasets:</b>	None

Dataset ID: WCMC-030

**Limitations:** This dataset is no longer maintained and should be used with caution.

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

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

**Other access/use constraints:** None

**Contact organisation:** UNEP World Conservation Monitoring Centre

<b>Organisation type:</b>	<b>Owner</b>	<b>Acronym:</b>	UNEP-WCMC
<b>Name:</b>	Dr. Steve Fletcher	<b>Position:</b>	Head of Programme
<b>City:</b>	Cambridge	<b>Country:</b>	United Kingdom
<b>E-mail:</b>	<a href="mailto:steve.fletcher@unep-wcmc.org">steve.fletcher@unep-wcmc.org</a>		
<b>Web site:</b>	<a href="http://www.unep-wcmc.org">www.unep-wcmc.org</a>		

**Data format(s):** Vector (point; .shp)

<b>Distribution format(s):</b>	Vector (point; .shp)	<b>Dataset size (uncompressed):</b>	1.8 Mb
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**Webpage and/or download:** <http://data.unep-wcmc.org/datasets/27>

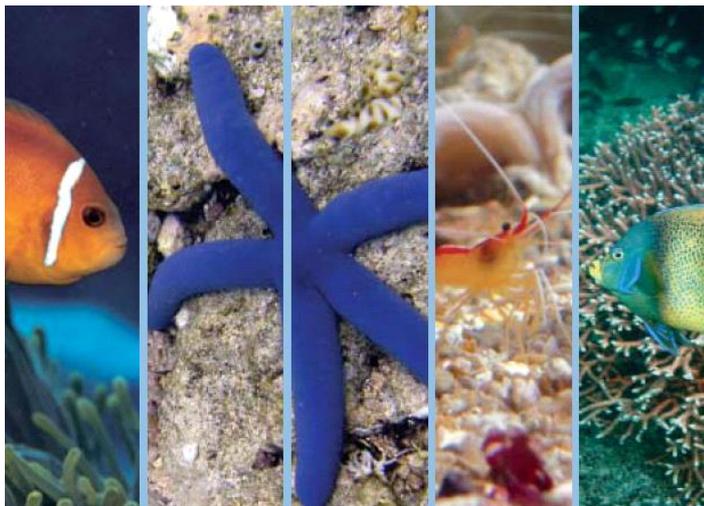
**Other webpage:** <http://www.arcgis.com/home/item.html?id=6b7e227dd13f4d6088583102e18ad099>

**Web map service:** [http://ec2-54-204-216-109.compute-1.amazonaws.com:6080/arcgis/rest/services/marine/WCMC\\_030\\_DiveCentres2001/MapServer](http://ec2-54-204-216-109.compute-1.amazonaws.com:6080/arcgis/rest/services/marine/WCMC_030_DiveCentres2001/MapServer)

#### Factsheet:

<b>Resolution, scale:</b>	Not applicable	<b>Reference system:</b>	WGS 1984
<b>West bounding:</b>	-174.0	<b>East bounding:</b>	180.0
<b>South bounding:</b>	-42.8	<b>North bounding:</b>	43.8
<b>Metadata standard:</b>	UNEP-WCMC Specific	<b>Date of metadata:</b>	09/06/2015

## Global Marine Aquarium Database (2003)



**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.

**Citation(s):** UNEP-WCMC (2003). Global Marine Aquarium Database. Cambridge (UK): UNEP World Conservation Monitoring Centre.

**Other cited reference(s):**

UNEP-WCMC (2008). Consultation paper, final document. Monitoring of International Trade in Ornamental Fish. Prepared for the European Commission Directorate General E - Environment ENV.E.2. – Development and Environment. Cambridge (UK): UNEP World Conservation Monitoring Centre. 46 pp.

Wabnitz C, Taylor M, Green E, Razak T (2003). From Ocean to Aquarium. Cambridge (UK): UNEP World Conservation Monitoring Centre. 65 pp.

**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).

<b>Purpose of creation:</b>	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.		
<b>Creation methodology:</b>	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.		
<b>Version:</b>	1.0 (2003)		
<b>Data lineage:</b>			
<b>Category:</b>	Administration		
<b>Keywords:</b>	aquarium, trade, GMAD, OATA, marine, OFI, AKKII, MAC, fish, coral, invertebrates		
<b>Similar datasets:</b>	None		
<b>Limitations:</b>	Data in GMAD were collected on a voluntary basis only.  The database is not currently operational, and was last updated in 2003.		
<b>Maintenance frequency:</b>	Data are not being updated.		
<b>Main access/use constraint:</b>	UNEP-WCMC General Data License (excluding WDPA). See <a href="http://www.unep-wcmc.org/policies/general-data-license-excluding-wdpa#data_policy">www.unep-wcmc.org/policies/general-data-license-excluding-wdpa#data_policy</a> and <a href="http://www.unep-wcmc.org/policies">www.unep-wcmc.org/policies</a> . For commercial use, please contact <a href="mailto:business-support@unep-wcmc.org">business-support@unep-wcmc.org</a> .		
<b>Other access/use constraints:</b>	The database contains information of a sensitive nature, which is removed from the distributed version.		
<b>Contact organisation:</b>	UNEP World Conservation Monitoring Centre		
<b>Organisation type:</b>	Owner	<b>Acronym:</b>	UNEP-WCMC
<b>Name:</b>	Dr. Steve Fletcher	<b>Position:</b>	Head of Programme
<b>City:</b>	Cambridge	<b>Country:</b>	United Kingdom
<b>E-mail:</b>	<a href="mailto:steve.fletcher@unep-wcmc.org">steve.fletcher@unep-wcmc.org</a>		
<b>Web site:</b>	<a href="http://www.unep-wcmc.org">www.unep-wcmc.org</a>		
<b>Data format(s):</b>	Access database (.accdb)		
<b>Distribution format(s):</b>	Access database (.accdb)	<b>Dataset size (uncompressed):</b>	12.4 Mb
<b>Webpage and/or download:</b>	<a href="mailto:marine@unep-wcmc.org">marine@unep-wcmc.org</a>		
<b>Other webpage:</b>			

Dataset ID: WCMC-023

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: 29/05/2015

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ISBN: 978-92-807-3500-0  
Job Number: DEW/1914/CA