# Manual of marine and coastal datasets of biodiversity importance

*2015 edition*

## Annex 3. Detailed dataset-specific metadata

An introduction to key marine and coastal biodiversity datasets

UNEP

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


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## *Edition*

This Manual was first published by Martin *et al*. in 2014. The 2015 edition includes updated annexes (53 new datasets and 24 additional metadata sheets), with minor edits throughout the main text.

This publication is available online at: http://wcmc.io/MarineDataManual


UNEP WCMC




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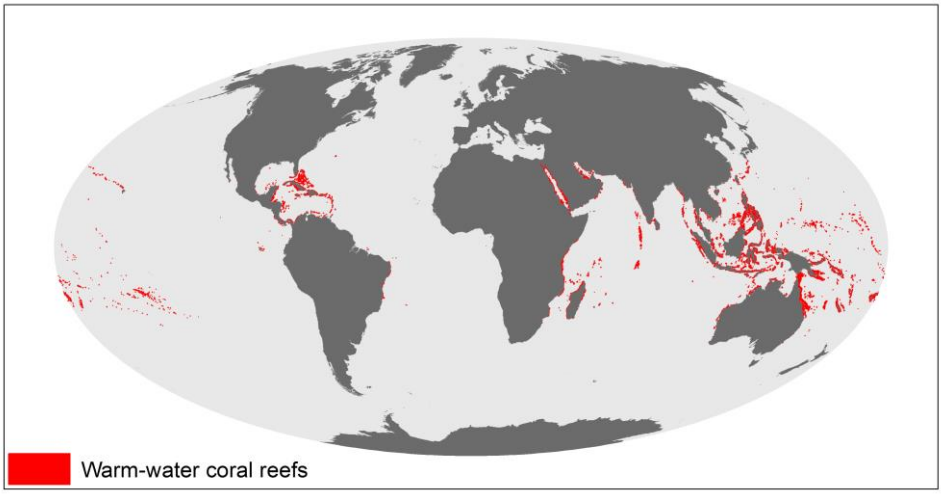
| Dataset title | ID[1] | Annex 3 |
|---|---|---|
| Global Distribution of Coral Reefs (2010) | WCMC-008 | p. 1 |
| Global Distribution of Coral Reefs - 1 Km Data (2003) | WCMC-009 | p. 5 |
| Global Distribution of Cold-water Corals (2005) | WCMC-001 | p. 7 |
| Global Habitat Suitability for Framework-Forming Cold-water Corals (2011) | Bangor-001 | p. 9 |
| Global Distributions of Habitat Suitability for Cold-Water Octocorals (2012) | ZSL-001 | p. 11 |
| Modelled Mediterranean Coralligenous and Mäerl Distributions (2013) | Mediseh-001 | p. 14 |
| Global Distribution of Mangroves USGS (2011) | WCMC-010 | p. 17 |
| World Atlas of Mangroves (2010) | WCMC-011 | p. 20 |
| Global Distribution of Modelled Mangrove Biomass (2014) | TNC-001 | p. 23 |
| Global Distribution of Mangroves (1997) | WCMC-012 | p. 26 |
| Global Distribution of Seagrasses (2005) | WCMC-013-014 | p. 28 |
| Modelled *Posidonia oceanica* Distribution in the Mediterranean Sea (2013) | Mediseh-002 | p. 31 |
| Global Distribution of Saltmarsh (2013) | WCMC-027 | p. 34 |
| Global Distribution of Marine Turtle Nesting Sites (1999) | WCMC-007 | p. 37 |
| Global Distribution of Marine Turtle Feeding Sites (1999) | WCMC-006 | p. 39 |
| Ocean Biogeographic Information System (OBIS) | OBIS-003 | p. 41 |
| Corrected and Refined Mangrove Species Ranges (2014) | IUCN-002 | p. 44 |
| Global Distribution of Northern Fur Seals (2013) | Kaschner-001 | p. 47 |
| Global Distribution of Hawaiian Monk Seals (2013) | Kaschner-002 | p. 50 |
| Global Distribution of Grey Seals (2013) | Kaschner-003 | p. 53 |
| Global Distribution of Hector's Dolphins (2013) | Kaschner-004 | p. 56 |
| Global Distribution of Northern Bottlenose Whales (2013) | Kaschner-005 | p. 59 |
| Global Distribution of Sperm Whales (2013) | Kaschner-006 | p. 62 |
| Global Distribution of Bowhead Whales (2013) | Kaschner-008 | p. 65 |
| Global Distribution of Sei Whales (2013) | Kaschner-009 | p. 68 |
| Global Distribution of Atlantic Spotted Dolphins (2013) | Kaschner-011 | p. 71 |
| Global Distribution of Melon-Headed Whales (2013) | Kaschner-012 | p. 74 |
| Global Patterns of Marine Biodiversity (2010) | WCMC-019 | p. 77 |
| Global Map of Shannon's Index of Biodiversity (2014) | OBIS-001 | p. 80 |

[1] Internal UNEP-WCMC numbering system as part of our metadata cataloguing.

| Dataset title | ID[1] | Annex 3 |
|---|---|---|
| Global Map of Hurlbert's Index of Biodiversity (2014) | OBIS-002 | p. 82 |
| Global Seagrass Species Richness (2003) | WCMC-015 | p. 84 |
| Global Distribution of KBAs, IBAs and AZEs (2013) | Birdlife-001 | p. 86 |
| Global Distribution of Particularly Sensitive Sea Areas (2014) | IMO-001 | p. 89 |
| Areas of Particular Environmental Interest (2012) | ISA-001 | p. 91 |
| A Global Map of Critical Habitat (2015) as per IFC PS6 | WCMC-029 | p. 93 |
| World Database on Protected Areas (2013) | WCMC-016 | p. 96 |
| Global Estuary Database (2003) | UBC-003 | p. 100 |
| Marine Ecoregions and Pelagic Provinces of the World (2007; 2012) | WCMC-036 | p. 103 |
| Coral Ecoregions of the World (2009) | TNC-003 | p. 106 |
| Large Marine Ecoregions of the World (2013) | NOAA-001 | p. 108 |
| Global Distribution of Seamounts and Knolls (2011) | ZSL-002 | p. 110 |
| Global Distribution of Hydrothermal Vents (2010) | ChEssBase-002 | p. 113 |
| Global Distribution of Hydrothermal Vent Fields (2013) | IntRid-001 | p. 116 |
| Global Distribution of Cold Seeps (2010) | ChEssBase-001 | p. 119 |
| Mean Sea Surface Productivity in June and December 2003-2007 (2008) | WCMC-020-021 | p. 122 |
| Mean Annual Sea Surface Chlorophyll-a Concentration 2009-2013 (2015) | WCMC-034 | p. 124 |
| Mean Annual Sea Surface Temperature 2003-2007 (2008) | WCMC-022 | p. 127 |
| Mean Annual Sea Surface Temperature 2009-2013 (2015) | WCMC-035 | p. 129 |
| Mapping Ocean Wealth | TNC-004 | p. 131 |
| A Global Map of Natural Capital (2014) | WCMC-032 | p. 134 |
| Marine Ecosystem Services Partnership | UniDuke-001 | p. 136 |
| Sea Around Us | UBC-009 | p. 138 |
| Living Planet Index Database | WWF-002 | p. 141 |
| SeagrassNet: Global Seagrass Monitoring Network (2013) | WaDNR-001 | p. 144 |
| Ocean Data Viewer | WCMC-039 | p. 146 |
| Knowledge Network for Biocomplexity (KNB) | NCEAS-004 | p. 149 |
| PANGAEA | AWI-001 | p. 152 |
| FishBase | FishBase-001 | p. 155 |
| Atlas of Global Conservation | TNC-002 | p. 157 |
| Catalogue of Life | CoL-001 | p. 159 |

| Dataset title | ID[1] | Annex 3 |
|---|---|---|
| Global Self-consistent, Hierarchical, High-resolution Geography Database (2013) | UniHaw-001 | p. 163 |
| Global Distribution of Islands IBPoW (2010) | WCMC-005 | p. 166 |
| Global Distribution of Islands OSM (2013) | WCMC-031 | p. 169 |
| Exclusive Economic Zone boundaries (2012) | VLIZ-001 | p. 171 |
| Regional Seas Boundaries (unofficial) | UNEP-002 | p. 174 |
| Boundaries of the Global International Waters Assessment (2003) | UNEP-001 | p. 176 |
| Global Distribution of Regional Fishery Bodies (2010) | FAO-001 | p. 178 |
| Global Distribution of Dive Centres (2001) | WCMC-030 | p. 181 |
| Global Marine Aquarium Database (2003) | WCMC-023 | p. 183 |

# 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 Developpement) (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, Reytar 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); country code (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 worlwide inventory of coral reefs using high-resolution satellite imagery, under the framework of the Millenium Coral Reef Mapping Project (Andréfouët et al. 2006). As a fully validated Millennium Coral Reef Mapping Project product was not available at the global scale, there was a need to create an 'interim' global amalgamated map product. The dataset was hence created to further mobilise the Millennium Coral Reef Mapping Project products and their validation. |
| Creation methodology: | Approximately 85% of this dataset originates from the Millennium Coral Reef Mapping Project, of which 35% was validated (by IMaRS-USF and IRD-Noumea) and 50% remains unvalidated (but was interpreted by UNEP-WCMC). Millennium Coral Reef Mapping Project products (validated or not) are at a consistent 30 m resolution (multispectral Landsat 7 images acquired between 1999 and 2002, http://www.imars.usf.edu/MC/index.html). Additional information regarding methodology and 'validated' and 'unvalidated' polygons can be obtained from http://oceancolor.gsfc.nasa.gov/LANDSAT/HTML/README.html.<br><br>Where there were no Millennium Coral Reef Mapping Project products, data (representing the remaining 15%) were compiled from other sources by UNEP-WCMC. These sources include data from the World Atlas of Coral Reefs (Spalding et al. 2001) and coral reef maps reproduced with permission from the Controller of Her Majesty's Stationery Office and the UK Hydrographic Office (www.ukho.gov.uk) © British Crown Copyright and/or database rights. The dataset is mostly fitted to ESRI's base layer. |
| Version: | 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.

| | |
|---|---|
| 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.<br><br>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.<br><br>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 and www.unep-wcmc.org/policies. For commercial use, please contact 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"). |

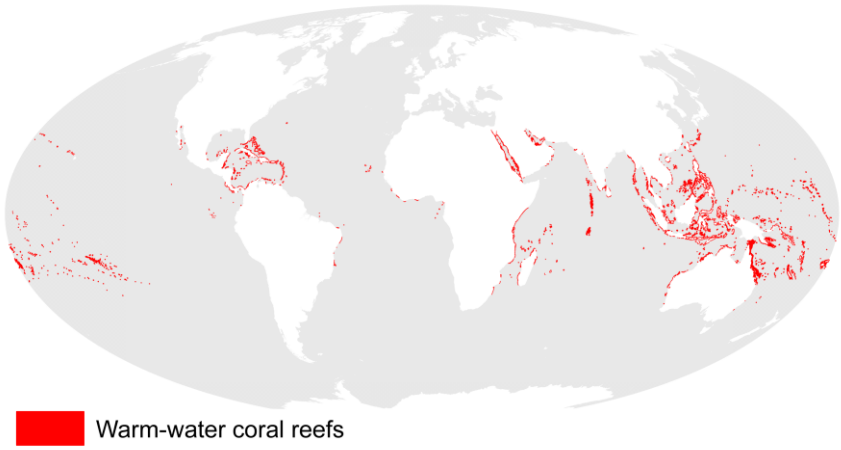
| | | | |
|---|---|---|---|
| Contact organisation: | UNEP World Conservation Monitoring Centre | | |
| Organisation type: | Custodian | Acronym: | UNEP-WCMC |
| Name: | Dr. Steve Fletcher | Position: | Head of Programme |
| City: | Cambridge | Country: | United Kingdom |
| E-mail: | steve.fletcher@unep-wcmc.org | | |
| Web site: | www.unep-wcmc.org | | |
| Data format(s): | Vector (polygon; .shp) | | |

| | | | |
|---|---|---|---|
| Distribution format(s): | Vector (polygon; .shp) | Dataset size (uncompressed): | 1.33 GB |

| | |
|---|---|
| Webpage and/or download: | http://data.unep-wcmc.org/datasets/1 |
| Other webpage: | http://www.arcgis.com/home/item.html?id=97071c96008d4ea6b0aabe4ed125661f |
| Web map service: | 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 |

| | | | |
|---|---|---|---|
| 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)




| | |
|---|---|
| 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.<br><br>Other cited reference(s):<br>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<br><br>A form of this dataset was used in the following publication:<br>Burke L, Reytar 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

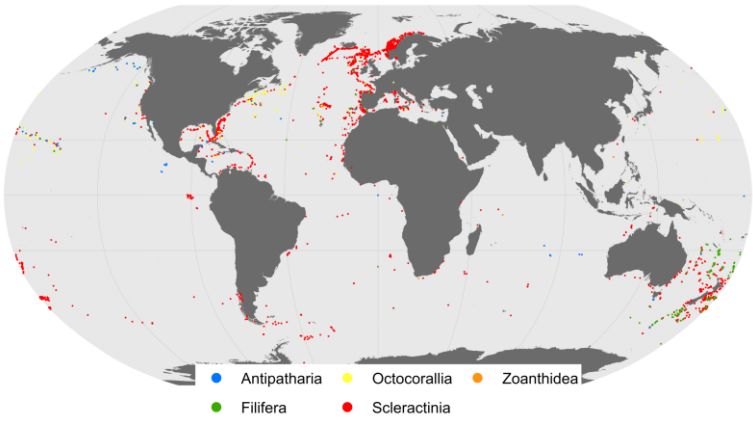
| | |
|---|---|
| Similar datasets: | WCMC-08 |
| Limitations: | No information is provided regarding percentage coverage of coral reefs in each grid cell. The dataset should therefore not be used to calculate surface areas of coral reef coverage.<br><br>Dataset WCMC-08 (2010) is a better alternative (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 and www.unep-wcmc.org/policies. For commercial use, please contact 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 | | |
| Web site: | www.unep-wcmc.org | | |
| Data format(s): | Vector (polygon; .shp) | | |
| Distribution format(s): | Vector (polygon; .shp) | Dataset size (uncompressed): | 5.89MB |

| | |
|---|---|
| Webpage and/or download: | See metadata |
| Other webpage: | |
| Web map service: | |
| Factsheet: | http://wcmc.io/warm_coral_reef |

| | | | |
|---|---|---|---|
| Resolution, scale: | 1 km cell size | 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 Cold-water Corals (2005)




| | |
|---|---|
| Description: | This dataset shows of the global distribution of cold-water corals. Occurrence records are given for four Orders (in Class Anthozoa): Scleractinia (reef-forming corals), Antipatharia (black corals), Octocorallia (octocorals) and Zoanthidae (encrusting or button polyps). Occurrence records are also available for the sub-Order Filifera (lace corals) in Class Hydrozoa. |
| Citation(s): | Freiwald A, Rogers A, Hall-Spencer J (2005). Global distribution of cold-water corals (version 2). Update of the dataset in Freiwald et al. (2004). Cambridge (UK): UNEP World Conservation Monitoring Centre. URL: http://data.unep-wcmc.org/datasets/3<br><br>Other cited reference(s):<br>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 |
| Temporal range: | 1915-2006 |
| Geographical range: | Global |
| Supplementary information: | Attribute table: depth range (DEPTH_RANG, in m), Class, Order, species name (TAXON), person(s) who identified the species (DETERMINER), status of the sample (live, dead, etc), reference where the record was first published, and much more. |
| Purpose of creation: | Version 1 of the dataset was created to accompany the report by Freiwald et al. (2004). |
| Creation methodology: | Occurrence records were obtained from various sources, including reports, peer-reviewed articles and consultation with experts. Many individuals and organisations contributed by providing UNEP-WCMC with their data in electronic form. |
| Version: | 2.0 |
| Data lineage: | This is an update of the original dataset. |
| Category: | Biogenic habitat |
| Keywords: | deep sea, high seas, benthic, marine |

Dataset ID: WCMC-001

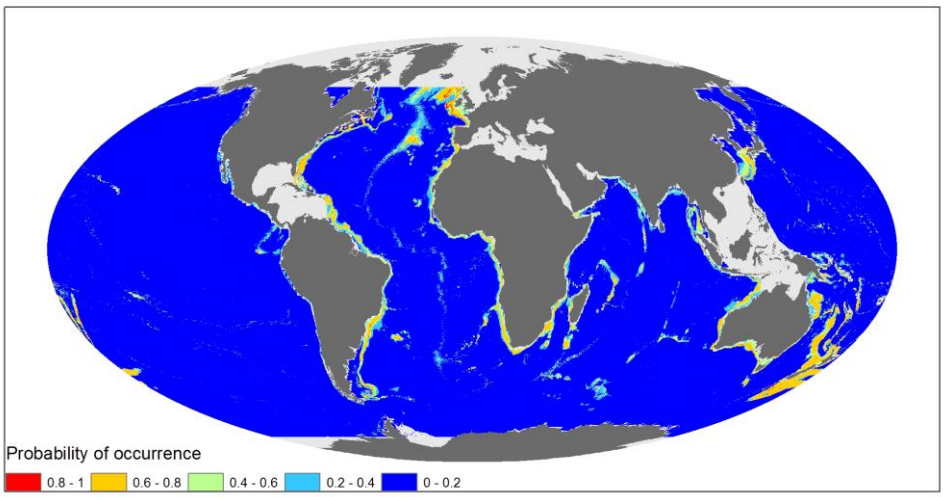
| | |
|---|---|
| Similar datasets: | Yesson-001, Davies-001 |
| Limitations: | The high density of reefs shown in the North Atlantic most probably reflects the intensity of research in this region. Further discoveries are expected worldwide, particularly in the deeper waters of subtropical and tropical regions. |
| 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 and www.unep-wcmc.org/policies. For commercial use, please contact 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 | | |
| Web site: | www.unep-wcmc.org | | |
| Data format(s): | Vector (point; .shp) | | |
| 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/WCMC_001_ColdwaterCorals2005/MapServer |
| Factsheet: | http://wcmc.io/cold-coral |

| | | | |
|---|---|---|---|
| Resolution, scale: | Not applicable | 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: | 29/05/2015 |

# 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. URL: http://dx.doi.org/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

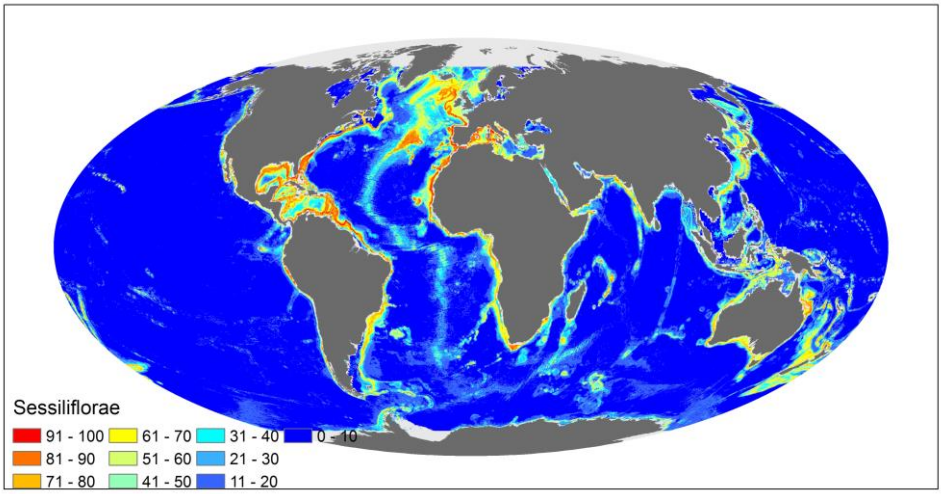
**Data lineage:**

**Category:** Biogenic habitat

Dataset ID: Bangor-001

| | |
|---|---|
| Keywords: | deep sea, model, high seas, benthic, marine |
| Similar datasets: | |
| Limitations: | Limitations are discussed in Davies and Guinotte (2011). |
| Maintenance frequency: | Data are not being updated. |
| Main access/use constraint: | See 'Other access/use constraint(s)'. |
| Other access/use constraints: | Please contact andrew.j.davies@bangor.ac.uk and John.Guinotte@marine-conservation.org. |
| Contact organisation: | School of Ocean Sciences, University of Bangor |
| Organisation type: | Owner |
| Acronym: | |
| Name: | Dr Andrew J. Davies |
| Position: | Senior Lecturer |
| City: | Bangor |
| Country: | United Kingdom |
| E-mail: | andrew.j.davies@bangor.ac.uk |
| Web site: | http://www.bangor.ac.uk/oceansciences/index.php.en |
| Data format(s): | Raster (.tif, geotiff) |
| Distribution format(s): | Raster (.tif, geotiff) |
| Dataset size (uncompressed): | 15.2 Gb |
| Webpage and/or download: | See metadata |
| 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: | 23/06/2015 |

# 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. 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

distribution of octocorals and forms a useful resource for researchers, managers and conservationists.

| | |
|---|---|
| Creation methodology: | Maximum entropy modelling was used to predict octocoral distribution using a database of 12,508 geolocated octocoral specimens (covering the period 1869-2008) and 32 environmental grids resampled to 30 arc-sec. (approx. 1 sq-km) resolution. See Yesson et al. (2012) for full details. |
| Version: | 1.0 (2012) |
| Data lineage: | -- |
| Category: | Biogenic habitat |
| Keywords: | deep sea, model, high seas, benthic, marine, corals, biodiversity, habitat |
| Similar datasets: | WCMC-001 |
| Limitations: | Less than 3% of octocoral records were found in waters undersaturated for calcite, but this result is affected by a shallow-water sampling bias. More generally with model outputs, high habitat suitability does not imply confirmed presence on the ground. |
| Maintenance frequency: | Data are not being updated. |
| Main access/use constraint: | Creative Commons Attribution 3.0 Unported (CC BY 3.0). See http://creativecommons.org/licenses/by/3.0/ for details. Free to (1) copy/distribute/transmit the work, (2) adapt the work, and (3) make commercial use of the work. |
| Other access/use constraints: | To access the high-resolution rasters (30 arc-sec., approx. 1 sq-km) and/or the database of geolocated octocoral specimens (both restricted), contact chris.yesson@ioz.ac.uk. |
| Contact organisation: | Institute of Zoology, Zoological Society of London |

| | | | |
|---|---|---|---|
| Organisation type: | Owner | Acronym: | ZSL |
| Name: | Dr. Chris Yesson | Position: | Research Scientist |
| City: | London | Country: | United Kingdom |
| E-mail: | chris.yesson@ioz.ac.uk | | |
| Web site: | www.zsl.org | | |
| Data format(s): | Raster (.tif, geotiff) | | |
| Distribution format(s): | Raster (.tif, geotiff) | Dataset size (uncompressed): | 13.6 Mb |

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

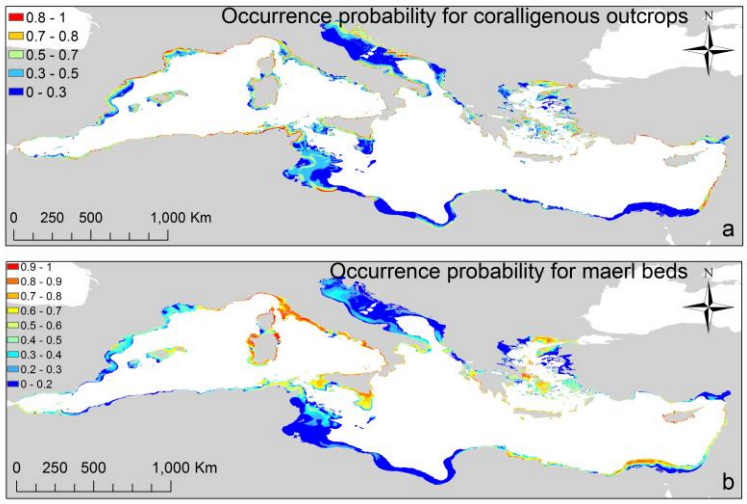
Dataset ID: ZSL-001

Web map service: http://ec2-54-204-216-109.compute-1.amazonaws.com:6080/arcgis/rest/services/marine/ZSL_001_ModelledOctocorals2012/MapServer

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

| | | | |
|---|---|---|---|
| Resolution, scale: | 0.166 dd (10x10 arc-min.) | Reference system: | WGS 1984 |
| West bounding: | -180.0 | East bounding: | 180.0 |
| South bounding: | -72.0 | North bounding: | 70.0 |
| Metadata standard: | UNEP-WCMC Specific | Date of metadata: | 14/08/2015 |

# Modelled Spatial Distributions of Coralligenous and Maërl Habitats (2014)




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

**Citation(s):** 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 mäerl 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 mäerl 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 mäerl beds should be addressed in the first instance to Simonetta Fraschetti at the University of Salento, Italy (simona.fraschetti@unisalento.it).

**Version:** 2014

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

**Category:** Biogenic habitat

**Keywords:** marine, model, bioconstruction

**Similar datasets:**

**Limitations:**

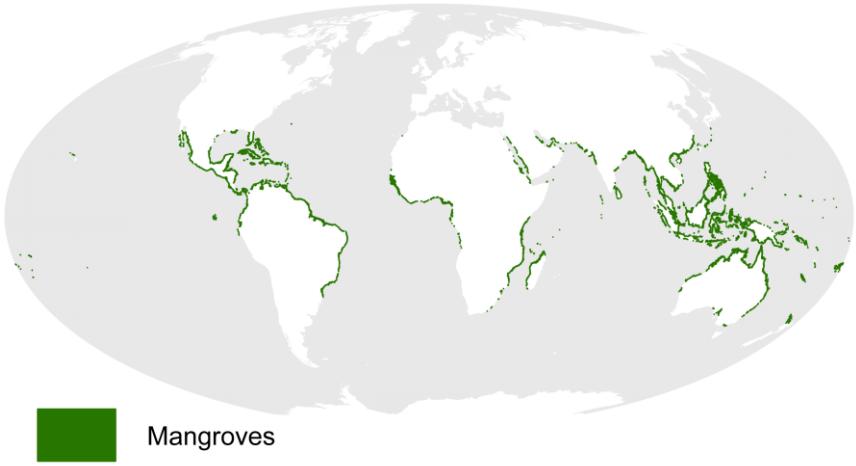
Due to data limitations on species lists across the various component datasets, coralligenous outcrops and maërl beds were each modelled as a whole, instead of modelling multispecific assemblages with distinct habitat preferences.

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.

| | |
|---|---|
| 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 |
| Web site: | www.unep-wcmc.org |
| Data format(s): | Raster (ESRI Grid), Vector (polygon; .shp) |
| Distribution format(s): | Raster (ESRI Grid) |
| Dataset size (uncompressed): | 205 Mb (each) |
| 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)




| | |
|---|---|
| Description: | This dataset shows the global distribution of mangrove forests, derived from earth observation satellite imagery. |
| Citation(s): | 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). 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 |
| Temporal range: | 1997-2000 |
| Geographical range: | Global |
| Supplementary information: | Attribute table: country code (ISO3); surface area (AREA_KM2; in sq-km; calculated using Global Mollweide equal-area projection); surface area (AREA_M2; in sq-m; calculated using Global Mollweide equal-area projection). |
| Purpose of creation: | The aim was to use a globally consistent and repeatable methodology, to produce a high-resolution dataset. |
| Creation methodology: | The dataset was created using Global Land Survey (GLS) data and the Landsat archive. Approximately 1,000 Landsat scenes were interpreted using hybrid supervised and unsupervised digital image classification techniques. See Giri et al. (2011) for full details. |
| Version: | 1.3 (June 2015) |
| Data lineage: | Changes to this dataset include:<br>- Ver 1.1: Country codes (ISO3) added by UNEP-WCMC.<br>- Ver 1.2 (October 2013): Duplicate polygons were identified and removed, bringing the total number of polygons in the dataset down to 1,397,008. Additionally two areas of incorrect mangrove in New Zealand were removed (inland north of Lake Waikare; outside the mouth of Kaipara Harbour). Additionally, the areas of east and west Pacific were found to be shifted in version 1.1. As the shift was not uniform in direction or distance, they were moved in small batches of clusters, based on ArcGIS Online imagery and World Street Map. During final checks on the final dataset, it was found that mangrove data were absent from the Comoros, Mayotte, the Seychelles and Bermuda: data from an earlier draft version of the dataset were hence incorporated for these areas. |

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

**Category:** Biogenic habitat

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

**Similar datasets:** WCMC-011, WCMC-012

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

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

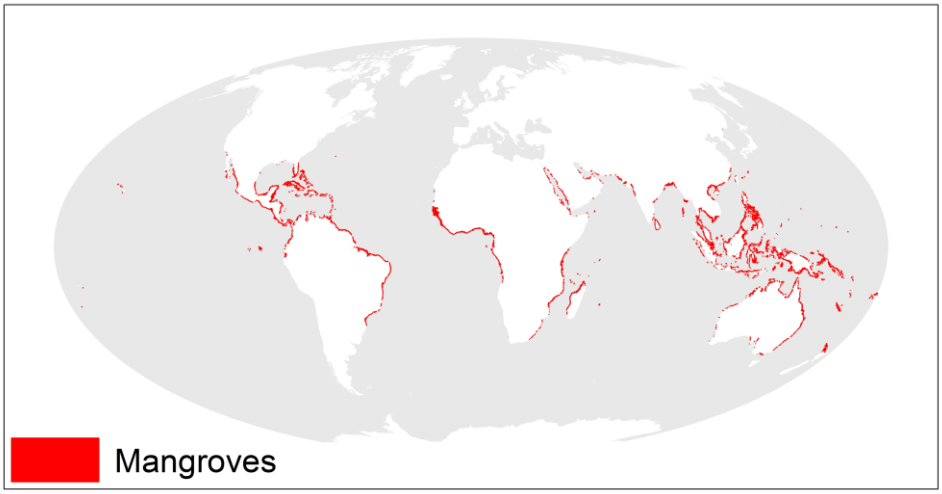
In addition to the present dataset (WCMC-010 (2011)), UNEP-WCMC distributes two other global mangrove data layers (WCMC-011 (2010), WCMC-012 (1997)). The two most recent datasets were both created using satellite imagery: WCMC-10 (2011) used a globally consistent methodology, whilst WCMC-011 (2010) also 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 and www.unep-wcmc.org/policies. For commercial use, please contact 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 | | |
| Web site: | 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 | | |
| 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. 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: country code (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).

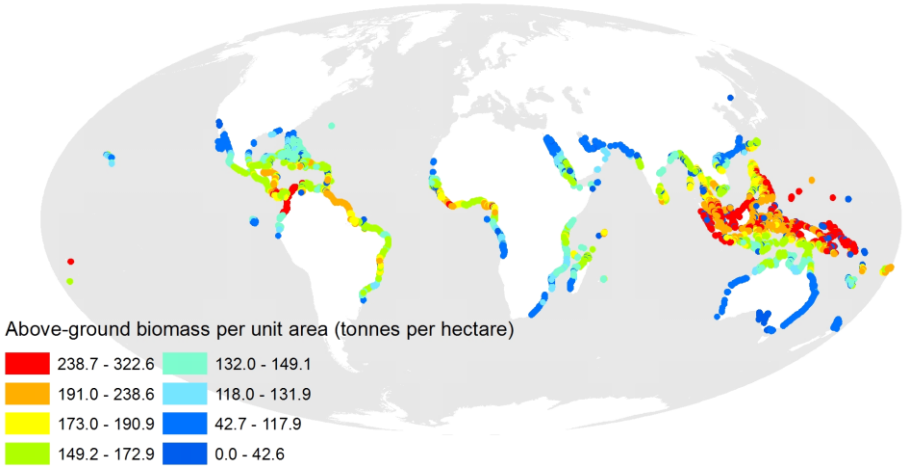
**Creation methodology:** The dataset was created mostly from satellite imagery processed at UNEP-WCMC or FAO. For a number of countries, existing (WCMC-012 (1997)) or newly available (vector) data were incorporated. The methodology is detailed in chapter 3 of Spalding et al. (2010), which is distributed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

| | |
|---|---|
| Version: | 1.0 |
| Data lineage: | This dataset supersedes WCMC-012 (1997). |
| Category: | Biogenic habitat |
| Keywords: | coastal, blue carbon, remote sensing, satellite, mangrove, forest, habitat, ecosystem |
| Similar datasets: | WCMC-010, WCMC-012 |
| Limitations: | Experts with detailed field knowledge were consulted for validating the maps. In some areas, there is an offset and/or mismatch in the position of the mangrove layer in relation to the coastline: this is probably caused by a number of factors, including varying data sources, differing scales to which the image interpretation was conducted, differing sensor types, differing optical bands, etc. For some countries, the vectorization process produced many thousands of small polygons, which have not been dissolved and/or deleted. The dataset is distributed with a document providing region-specific data limitations ("WCMC-011-AtlasMangrove2010-MapReferences.pdf").<br><br>As the dataset may contain overlapping polygons, a dissolve operation (within a GIS) might be needed before surface area calculations are carried out.<br><br>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 and www.unep-wcmc.org/policies. For commercial use, please contact business-support@unep-wcmc.org. |
| Other access/use constraints: | Please also refer to the license file ("WCMC-011-AtlasMangrove2010-License.pdf") distributed with the dataset.<br><br>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).<br><br>For commercial use of the dataset, please contact business-support@unep-wcmc.org and isme@mangrove.or.jp. |

Dataset ID: WCMC-011

| | | | |
|---|---|---|---|
| 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: | www.unep-wcmc.org | | |
| Data format(s): | Vector (polygon; .shp) | | |
| Distribution format(s): | Vector (polygon; .shp) | Dataset size (uncompressed): | 835 MB |
| Webpage and/or download: | http://data.unep-wcmc.org/datasets/5 | | |
| Other webpage: | http://www.arcgis.com/home/item.html?id=cb2d636f577047b7addcf8bf3e795f31 | | |
| Web map service: | http://downloads.wdpa.org/ArcGIS/rest/services/ocean_data_viewer/mangrove_2010/MapServer | | |
| Factsheet: | http://wcmc.io/mangroves | | |
| Resolution, scale: | 1: 1,000,000 | Reference system: | WGS 1984 |
| West bounding: | -175.3 | East bounding: | 180.0 |
| South bounding: | -38.9 | North bounding: | 42.7 |
| Metadata standard: | UNEP-WCMC Specific | Date of metadata: | 29/05/2015 |

# 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. URL: http://onlinelibrary.wiley.com/doi/10.1111/conl.12060/abstract; 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 km²); polygon centroid longitude (Centroid_x; in decimal degrees); polygon centroid latitude (Centroid_y; in decimal degrees); predicted mean mangrove biomass for a given mangrove polygon (BM_t_ha; in tonnes/ha ); predicted total mangrove biomass for a given mangrove polygon (BM_polygon; in tonnes).

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

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

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

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

**Version:** 1.0 (2014)

**Data lineage:** --

**Category:** Biogenic habitat

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

**Similar datasets:** WCMC-010

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

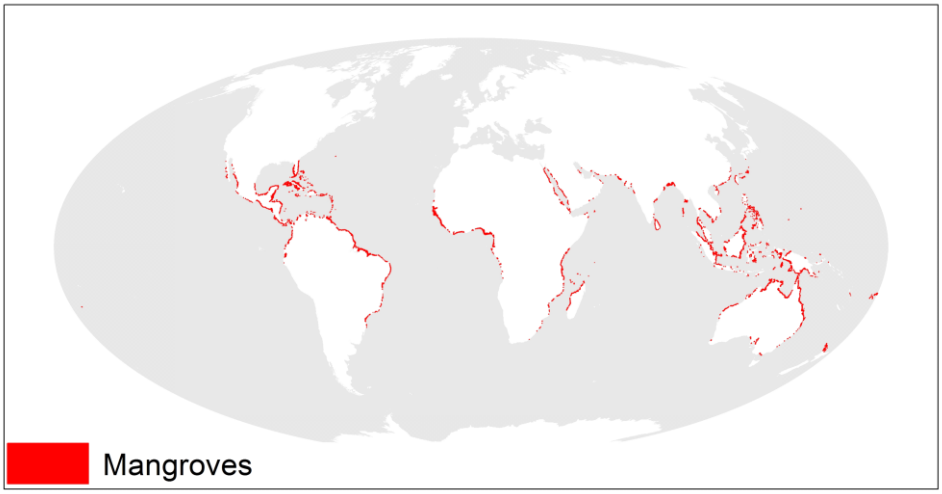
The model does not account for small scale spatial variation, such as zonation within a mangrove area. It is based on the bioclimatic variables from Bioclim (Hijmans et al., 2005), which, although given as 30 arc-sec grids, are highly interpolated from individual weather stations. As such, it is not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

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

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

| | | | |
|---|---|---|---|
| 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 and www.unep-wcmc.org/policies. For commercial use, please contact 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 | | |
| 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://onlinelibrary.wiley.com/doi/10.1111/conl.12060/abstract | | |
| Web map service: | 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: | 21/09/2015 |

# World Mangrove Atlas (1997)




| | |
|---|---|
| Description: | This dataset shows the global distribution of mangroves. It was compiled by UNEP World Conservation Monitoring Centre (UNEP-WCMC) in collaboration with the International Society for Mangrove Ecosystems (ISME). |
| Citation(s): | 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: https://archive.org/details/worldmangroveatl97spal; http://data.unep-wcmc.org/datasets/6 |
| Temporal range: | 1960-1996 |
| Geographical range: | Global |
| Supplementary information: | Attribute table: country code (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). |
| Purpose of creation: | This dataset was developed to provide a baseline inventory of mangroves at the end of the 20th century. This dataset was the first significant attempt to provide an overview of the distribution of mangroves worldwide. |
| Creation methodology: | This composite dataset was compiled from data at various scales (some quite coarse). Some data were digitised by hand from paper maps. |
| Version: | 1.0 |
| Data lineage: | This dataset is superseded by WCMC-011 (2010). |
| Category: | Biogenic habitat |
| Keywords: | coastal, blue carbon, mangrove, forest, habitat, ecosystem |
| Similar datasets: | WCMC-010, WCMC-011 |
| Limitations: | Data vary in scale and quality. The dataset can be used for national-level comparisons with more recent datasets (WCMC-010 (2011), WCMC-011 (2010)), keeping in mind that the latter were produced using drastically different |

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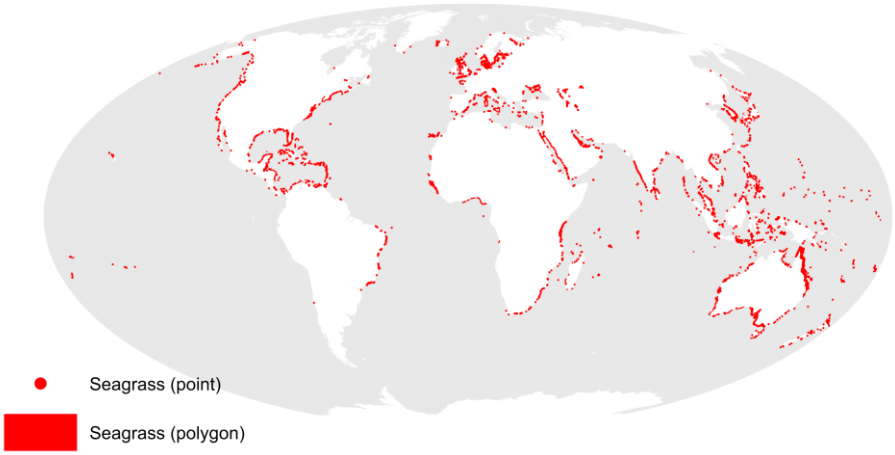
| | methodologies. Global-scale comparisons should not be attempted.<br><br>As the dataset may contain overlapping polygons, a dissolve operation (within a GIS) might be needed before surface area calculations are carried out. |
| Maintenance frequency: | Data are not being updated. |
| Main access/use constraint: | UNEP-WCMC General Data License (excluding WDPA). See www.unep-wcmc.org/policies/general-data-license-excluding-wdpa#data_policy and www.unep-wcmc.org/policies. For commercial use, please contact 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 |
| Web site: | www.unep-wcmc.org |
| Data format(s): | Vector (polygon; .shp) |
| Distribution format(s): | Vector (polygon; .shp) |
| Dataset size (uncompressed): | 93.4 MB |
| Webpage and/or download: | http://data.unep-wcmc.org/datasets/6 |
| Other webpage: | http://www.arcgis.com/home/item.html?id=20b7cc32b97442848d8b66904765d8e8 |
| Web map service: | http://downloads.wdpa.org/ArcGIS/rest/services/ocean_data_viewer/mangroves2/MapServer |
| Factsheet: | http://wcmc.io/mangroves |
| Resolution, scale: | 1:1,000,000 |
| Reference system: | WGS 1984 |
| West bounding: | -175.3 |
| East bounding: | 179.9 |
| South bounding: | -38.9 |
| North bounding: | 32.4 |
| Metadata standard: | UNEP-WCMC Specific |
| Date of metadata: | 01/07/2015 |

## Global Distribution of Seagrasses (2005)




| | |
|---|---|
| Description: | This dataset shows the global distribution of seagrasses, and is composed of two subsets of point and polygon occurence data. The data were compiled by UNEP World Conservation Monitoring Centre in collaboration with Dr Frederick T. Short (University of New Hampshire, USA). |
| Citation(s): | UNEP-WCMC, Short FT (2005). Global distribution of seagrasses (version 3.0). Third 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<br><br>Other cited reference(s):<br>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 |
| Temporal range: | 1934-2011 |
| Geographical range: | Global |
| Supplementary information: | Attribute table: country code (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 developed alongside the publication by Green and Short (2003), and was the first authoritative and comprehensive global synthesis of the 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: | 3.0 (January 2015) |
| Data lineage: | This dataset supersedes version 2.0 of the seagrass dataset, which was an updated version of the dataset used in Green and Short (2003). Version 3.0 (2015) incorporates 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.

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|---|---|
| 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.<br><br>As the dataset may contain overlapping polygons, a dissolve operation (within a GIS) might be needed before surface area calculations are carried out.<br><br>Based on recent genetic and morphometric analysis, Halophilla johnsonii, Halophila hawaiiana, Halophila ovata and Halophila minor are now considered to be morphological variations of, and therefore conspecific with, Halophila ovalis. Zostera mucronata, Zostera muelleri and Zostera novazelandica are now considered to be morphological variations of, and therefore conspecific with, Zostera capricorni.<br><br>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 and www.unep-wcmc.org/policies. For commercial use, please contact 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 | | |
| Web site: | www.unep-wcmc.org | | |
| Data format(s): | Vector (point; .shp), Vector (polygon; .shp) | | |
| Distribution format(s): | Vector (point; .shp), Vector (polygon; .shp) | Dataset size (uncompressed): | 1 Gb (polygons), 22 Mb (points) |

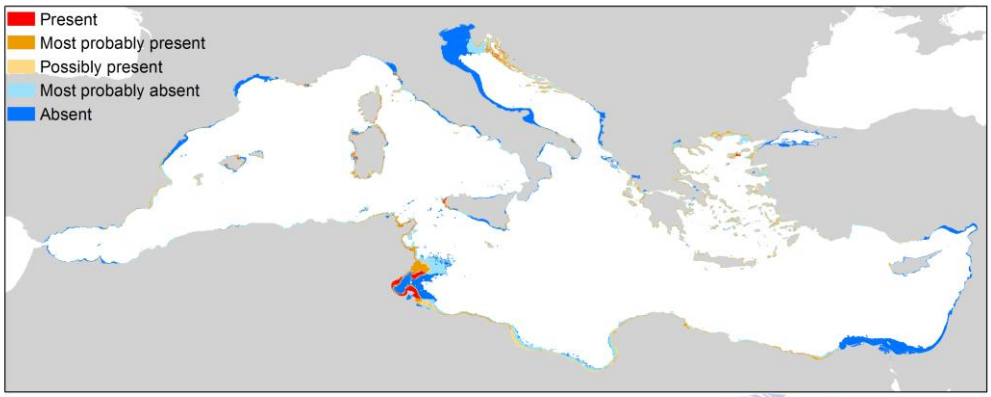
Webpage and/or download: http://data.unep-wcmc.org/datasets/7

Dataset ID: WCMC-013-014

| | |
|---|---|
| Other webpage: | http://www.arcgis.com/home/item.html?id=36b176f90cd341429ccb1b9b1e9aceeb |
| Web map service: | 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: | 29/06/2015 |

## Modelled Posidonia oceanica Distribution (2013)




MediSeH
Mediterranean Sensitive Habitats

**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.

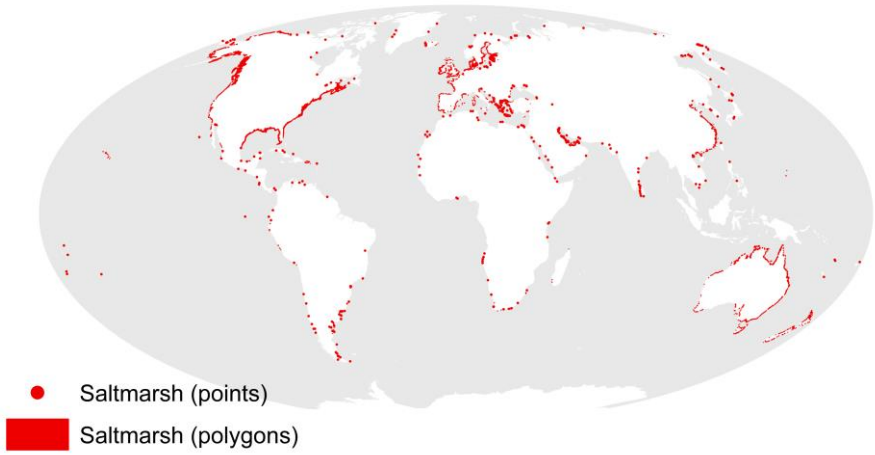
**Main access/use constraint:** Unrestricted

**Other access/use constraints:**

Dataset ID: Mediseh-002

| | | | |
|---|---|---|---|
| Contact organisation: | "Tor Vergata" University of Rome | | |
| Organisation type: | Resource provider | Acronym: | |
| Name: | Dr. Michele Scardi | Position: | Associate Professor |
| City: | Rome | Country: | Italy |
| E-mail: | mscardi@mclink.it | | |
| Web site: | http://web.uniroma2.it | | |
| Data format(s): | Vector (polygon; .shp) | | |
| Distribution format(s): | Vector (polygon; .shp) | Dataset size (uncompressed): | 11 Mb |
| Webpage and/or download: | http://www.emodnet-seabedhabitats.eu/default.aspx?page=1974 | | |
| Other webpage: | http://mareaproject.net/contracts/5/reporting | | |
| Web map service: | | | |
| Factsheet: | http://wcmc.io/seagrass | | |
| Resolution, scale: | 0.004166 dd | Reference system: | WGS 1984 |
| West bounding: | -5.7 | East bounding: | 36.2 |
| South bounding: | 30.3 | North bounding: | 45.8 |
| Metadata standard: | UNEP-WCMC Specific | Date of metadata: | 30/07/2015 |

# Global Distribution of Saltmarsh (unpublished)

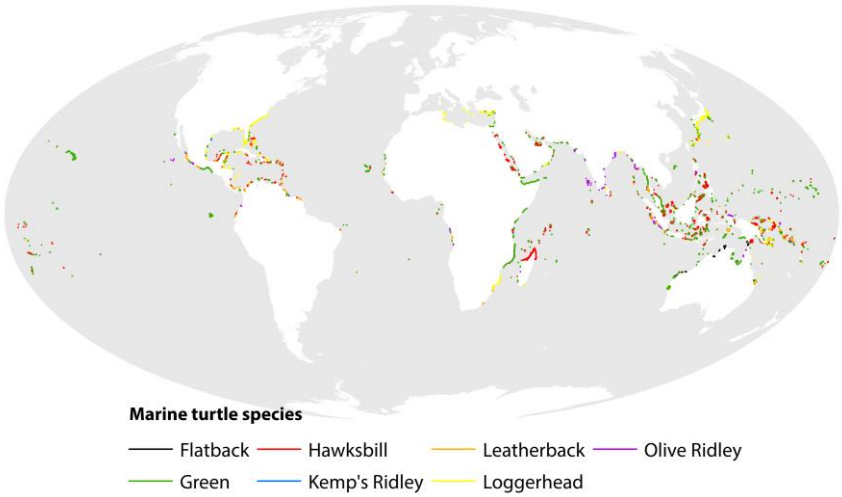



| | |
|---|---|
| Description: | This unpublished dataset shows the global distribution of saltmarsh in temperate, tundra, subtropical, and tropical regions. The dataset is still in development and is not to be circulated externally until further notice. |
| Citation(s): | UNEP-WCMC. (2013). Global distribution of saltmarsh (ver. 1.0). Unpublished dataset. Cambridge (UK): UNEP World Conservation Monitoring Centre. |
| Temporal range: | Unknown |
| Geographical range: | Global |
| Supplementary information: | The dataset consists of one polygon layer and one point layer.<br><br>Polygon layer: ISO3 country code (COUNTRY); locality (SUB-LOC); habitat type (HABITAT); surface area (GIS_AREA; in sq-km, calculated using Mollweide equal-area projection); metadata ID number (METADATAID; to link with the data source table "source_table.dbf"); code obtained from data provider (ORIG_CODE); habitat type translated to English by UNEP-WCMC (HABTRANS).<br><br>Point layer: location record ID number (LOCRECID); locality (NAME); country code (ISO3); country (COUNTRY); region (CTY_REGION); latitude (LAT); longitude (LON); surface area (AREA-HA; in hectares); comment (COMMENT). |
| Purpose of creation: | This dataset is being developed to provide a baseline inventory of saltmarshes, which are ecosystems located in the intertidal zone of sheltered marine and estuarine coastlines. Saltmarshes are of ecological importance as they underpin the estuarine food web. In particular, these habitats 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. |
| Creation methodology: | This composite dataset was sourced from published articles, reports (NGOs, national governments), and databases(Universities, Institutes, government agencies). Data sources are listed in the file "source_table.dbf", which can be linked to the layers using the field METADATAID. |

Dataset ID: WCMC-027

| | |
|---|---|
| Version: | 1.0 (November 2013) |
| Data lineage: | This dataset supercedes the Global Distribution of Saltmarsh (2009), which is no longer distributed. The 2009 dataset was a point layer collated by UNEP World Conservation Monitoring Centre and Conservation International (CI). |
| Category: | Biogenic habitat |
| Keywords: | coastal, blue carbon, saltmarsh, habitat, ecosystem |
| Similar datasets: | None |
| Limitations: | 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, salt plains, due to varying collection and mapping methodologies.<br><br>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: | See 'Other access/use constraint(s)'. |
| Other access/use constraints: | The dataset should not be circulated externally until it has been published. Until then, UNEP-WCMC may authorise its use in specific named projects, if a formal agreement is drawn. |
| 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: | 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): | 1.63 Gb |
| Webpage and/or download: | marine@unep-wcmc.org |
| Other webpage: | |
| Web map service: | |
| Factsheet: | http://wcmc.io/saltmarsh |
| Resolution, scale: | Not applicable |
| Reference system: | WGS 1984 |
| West bounding: | -179.1 |
| East bounding: | 178.9 |
| South bounding: | -54.8 |
| North bounding: | 75.7 |

# Global Distribution of Sea Turtle Nesting Sites (1999)




| | |
|---|---|
| Description: | This dataset shows the known locations of sea turtle nesting sites, for all seven species: hawksbill turtle (Eretmochelys imbricata), Kemp's ridley turtle (Lepidochelys kempii), leatherback turtle (Dermochelys coriacea), green turtle (Chelonia mydas), loggerhead turtle (Caretta caretta), olive ridley turtle (Lepidochelys olivacea), and flatback turtle (Natator depressus). |
| Citation(s): | 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: http://data.unep-wcmc.org/datasets/22 |
| Temporal range: | 1949-1993 |
| Geographical range: | Global |
| Supplementary information: | This dataset is the only 'line' dataset of observed nesting occurrence. The 'State of the World's Sea Turtles' (SWOT) database (http://seamap.env.duke.edu/dataset/545) is a more up to date alternative source on nesting site locations (point data).<br><br>Attribute table: IUCN Red List threat status (REDLISTC; DD: data deficient, VU: vulnerable, EN: endangered, CR: critically endangered), assessment year (REDLYEAR). |
| Purpose of creation: | At the time of compilation, the dataset was the only global source of sea turtle nesting sites. |
| Creation methodology: | The dataset was compiled by UNEP World Conservation Monitoring Centre over a number of years. Information was obtained from published and unpublished sources (see "Turtle_sources.xlsx"), and through liaison with turtle fieldworkers. |
| Version: | 1.1 (May 2015) |
| Data lineage: | This version of the dataset (1.1) includes each species' designated global threat status and year (IUCN Red List of Threatened Species, Version 2014.3), which were incorporated by UNEP-WCMC and released in May 2015. This dataset supersedes version 1.0, originally released in 1999. |
| Category: | Species habitat |

Dataset ID: WCMC-007

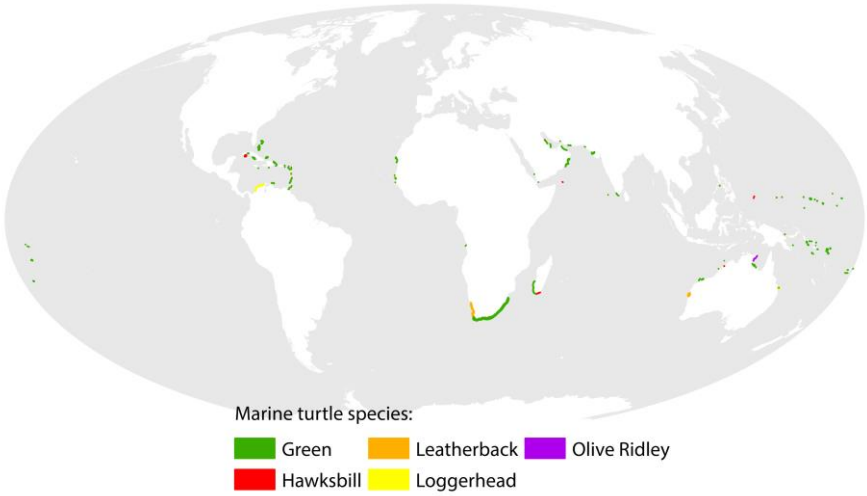
| | |
|---|---|
| Keywords: | coastal, marine, turtle, habitat, IUCN, threatened, habitat, nesting, UNEP-WCMC |
| Similar datasets: | WCMC-006 |
| Limitations: | This legacy dataset is no longer being maintained and must be used with caution.<br><br>It was originally fitted to the best shoreline data available at the time (1999), i.e. ESRI's "Digital Chart of the World" and “MundoCart digital database” (both derived from Operational Navigation Charts). The dataset is known to show placement errors when mapped onto recent shoreline datasets (e.g. GSHHD, Open Street Map).<br><br>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 and www.unep-wcmc.org/policies. For commercial use, please contact business-support@unep-wcmc.org. |
| Other access/use constraints: | None |
| 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 | | |
| Web site: | www.unep-wcmc.org | | |
| Data format(s): | Vector (polyline; .shp) | | |
| Distribution format(s): | Vector (polyline; .shp) | Dataset size (uncompressed): | 16 Mb |

| | |
|---|---|
| Webpage and/or download: | http://data.unep-wcmc.org/datasets/22 |
| Other webpage: | http://www.arcgis.com/home/item.html?id=077d7f2343674a8cbb4cdf3a6816f022 |
| Web map service: | http://ec2-54-204-216-109.compute-1.amazonaws.com:6080/arcgis/rest/services/marine/WCMC_007_TurtleNesting1999/MapServer |
| Factsheet: | http://wcmc.io/turtle-nesting-site |

| | | | |
|---|---|---|---|
| Resolution, scale: | Not applicable | Reference system: | WGS 1984 |
| West bounding: | -175.1 | East bounding: | 180.0 |
| South bounding: | -32.2 | North bounding: | 40.4 |
| Metadata standard: | UNEP-WCMC Specific | Date of metadata: | 17/08/2015 |

# 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.<br><br>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.<br><br>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 and www.unep-wcmc.org/policies. For commercial use, please contact business-support@unep-wcmc.org. |
| Other access/use constraints: | None |
| 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 | | |
| Web site: | www.unep-wcmc.org | | |
| Data format(s): | Vector (polygon; .shp) | | |
| Distribution format(s): | Vector (polygon; .shp) | Dataset size (uncompressed): | 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 |
| Factsheet: | |

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

# Ocean Biogeographic Information System (OBIS)


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

**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:** --

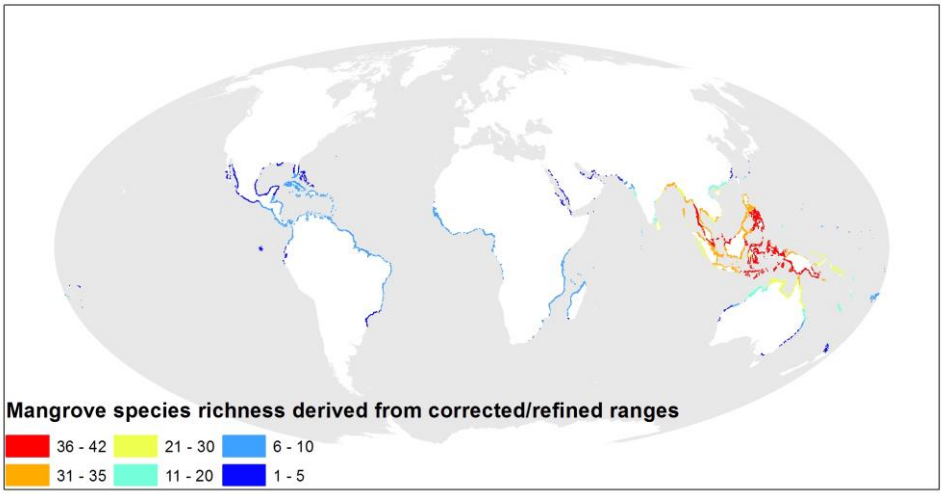
**Geographical range:** Global

| | |
|---|---|
| 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.<br><br>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.<br><br>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.<br><br>For more information regarding quality control: http://www.iobis.org/node/47.<br><br>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 | | |
| 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: | -- | East bounding: | -- |
| South bounding: | -- | North bounding: | -- |
| Metadata standard: | UNEP-WCMC Specific | Date of metadata: | 17/08/2015 |

# 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

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-projeting from Mercator to WGS 1984.

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

solves both issues.

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

| | |
|---|---|
| Creation methodology: | To address the incomplete overlap of original ranges with known areas of mangrove occurrence, the boundaries of ranges were buffered by 10 km (spot checks having established that this distance was adequate). The corrected ranges were then refined by clipping them with known areas of mangrove occurrence.<br><br>The GIS process for correction/refinement was automated in Python language (ArcMap 10.0, Python v 2.6.5), with each species taking approximately 20 min to process. The script can be amended to use other available global distributions of mangrove such as that of Spalding et al (2010; dataset WCMC-011). |
| Version: | 1.0 (December 2014) |
| Data lineage: | IUCN carried out a first attempt early in 2014, without first correcting the ranges. IUCN identified the need to use the 'dice' tool in ArcGIS to speed up processing time. |
| Category: | Species distribution |
| Keywords: | mangrove, coastal, range |
| Similar datasets: | IUCN-001 |
| Limitations: | The dataset used to locate known areas of mangrove occurrence was derived from earth observation satellite imagery (see limitations detailed in the metadata for dataset WCMC-010). Furthermore, users should be aware that the dataset shows species ranges, not actual presence on the ground of the various species. |
| Maintenance frequency: | Data are updated in intervals that are uneven in duration. |
| Main access/use constraint: | IUCN Red List Terms and Conditions of Use (version 2.1). See http://www.iucnredlist.org/info/terms-of-use for details. |
| Other access/use constraints: | Interested users should contact marine@unep-wcmc.org in the first instance. Permission to access the data will require permission from both IUCN and UNEP-WCMC. |


| | | | |
|---|---|---|---|
| Contact organisation: | 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: | www.unep-wcmc.org | | |


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

Dataset ID: IUCN-002

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|---|---|---|---|
| Distribution format(s): | File geodatabase (.fgdb) | Dataset size (uncompressed): | 7.1 Gb |

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

Other webpage:

Web map service:

Factsheet: http://wcmc.io/mangroves

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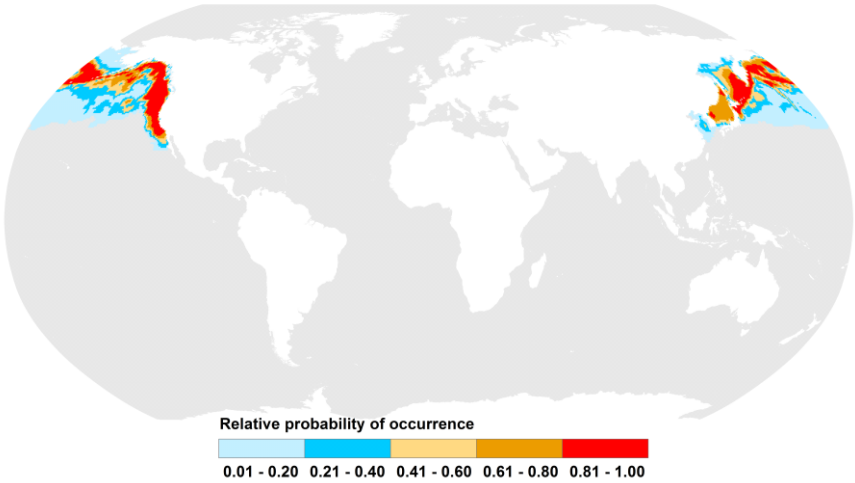
|---|---|---|---|
| Resolution, scale: | N/A | Reference system: | WGS 1984 |
| West bounding: | -180.0 | East bounding: | 180.0 |
| South bounding: | -38.8 | North bounding: | 32.4 |
| Metadata standard: | UNEP-WCMC Specific | Date of metadata: | 05/08/2015 |

## Global Distribution of Northern Fur Seals (2013)




| | |
|---|---|
| Description: | This dataset shows the modelled distribution of Northern fur seals (Callorhinus ursinus). AquaMaps (www.aquamaps.org) 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, 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).<br><br>Predicted distributions often include the potential environmental niche of a species, including historical occurrence. Validation analysis has shown that relative probabilities >=0.4 correspond more closely to the utilised niche of this species: this is the recommended threshold to be used to delineate the core range of this species (precautionary setting). Detailed dataset-specific information (provided by K. Kaschner) is also available. |
| Purpose of creation: | AquaMaps is a tool for generating model-based, large-scale predictions of natural occurrences of species. The maps can be used to inform environmental impact assessments. |
| Creation methodology: | The modelled distribution was generated using the AquaMaps online species distribution model. Methodological notes (provided by K. Kaschner) are also available. Observed occurrence records (280 cells; FAO areas: 18, 61, 67, 71, 77, 87) were obtained (August 2013) from the Global Biodiversity Information Facility (GBIF; www.gbif.org). These were supplemented by additional information obtained |

| | |
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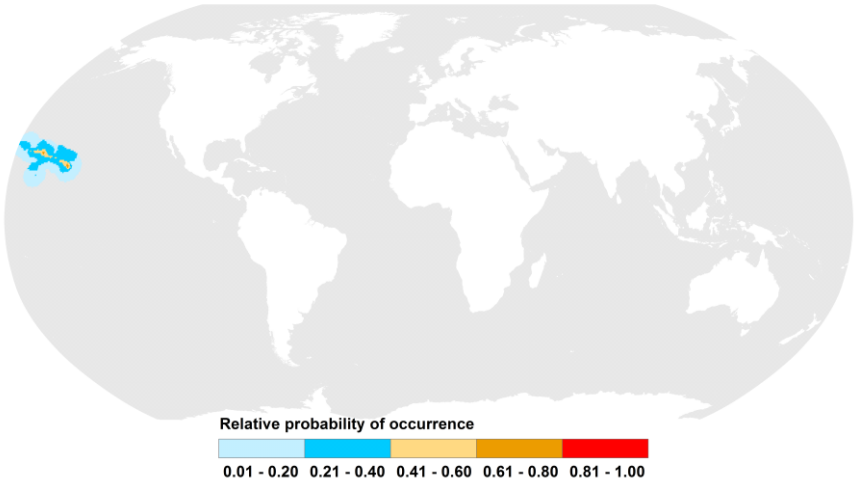
| | through online species databases such as FishBase (www.fishbase.org) and SeaLifeBase (www.Sealifebase.org), as well as published information on species-specific habitat usage and expert knowledge. The distribution model was based on five environmental variables (depth, temperature, salinity, primary production, and sea ice concentration), and details of the species envelope are in the dataset-specific information (provided by K. Kaschner). |
| Version: | 1.0 (August 2013) |
| Data lineage: | In acknowledgement that predicted distributions reflect the current state of knowledge, AquaMaps predictions are not a permanent, fixed output, but instead will be revised and updated as new data or information become available or additional experts provide new input.<br><br>Environmental dataset used: HCAF version 5 (August 2013; 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.<br><br>The modelled distribution has been expert-reviewed by Kristin Kaschner (15 December 2013), and the quality of predictions ranks 3 out of 5 (see www.aquamaps.org/rating.html for further details). Expert comment: "Predictions match known occurrence well, except for false predicted presences in the Sea of Okhotsk (known absence might be due to interspecific competition) and low predicted probabilities in the Yellow Sea. Test of original 'Relative Environmental Suitability' predictions showed strong positive correlation with observed sightings (Kaschner et al., 2006). Based on the review of more recent occurrence data sets and after the exclusion of a single outlier record in the Beaufort Sea, depth envelope settings were extended into deeper waters and upper SST range was manually decreased to capture known southern limits of geographic range. The map would be improved by use of seasonal predictions".<br>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.<br><br>For commercial use, please contact business-support@unep-wcmc.org. |

| | | | |
|---|---|---|---|
| Contact organisation: | Albert-Ludwigs-University of Freiburg | | |
| Organisation type: | Owner | Acronym: | |
| Name: | Dr. Kristin Kaschner | Position: | Research Affiliate |
| City: | Freiburg | Country: | Germany |
| E-mail: | Kristin.Kaschner@biologie.uni-freiburg.de | | |
| Web site: | www.uni-freiburg.de | | |
| 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) 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, 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).<br><br>Predicted distributions often include the potential environmental niche of a species, including historical occurrence. Validation analysis has shown that relative probabilities >=0.4 correspond more closely to the utilised niche of this species: this is the recommended threshold to be used to delineate the core range of this species (precautionary setting). Detailed dataset-specific information (provided by K. Kaschner) is also available. |
| Purpose of creation: | AquaMaps is a tool for generating model-based, large-scale predictions of natural occurrences of species. The maps can be used to inform environmental impact assessments. |
| Creation methodology: | The modelled distribution was generated using the AquaMaps online species distribution model. Methodological notes (provided by K. Kaschner) are also available. Observed occurrence records (< 10 cells; FAO areas: 61, 77, 71) were obtained (August 2013) from the Global Biodiversity Information Facility (GBIF; www.gbif.org). These were supplemented by additional information obtained |

through online species databases such as FishBase (www.fishbase.org) and SeaLifeBase (www.Sealifebase.org), as well as published information on species-specific habitat usage and expert knowledge. The distribution model was based on three environmental variables (depth, temperature, salinity, and distance to land), and details of the species envelope are in the dataset-specific information (provided by K. Kaschner).

Version: 1.0 (August 2013)

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

Environmental dataset used: HCAF version 5 (August 2013; 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 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.

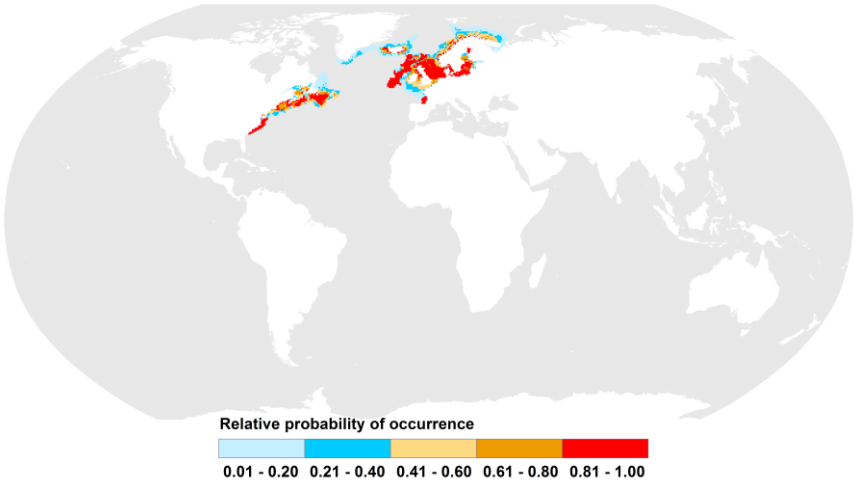
Dataset ID: Kaschner-002

| | | | |
|---|---|---|---|
| Contact organisation: | Albert-Ludwigs-University of Freiburg | | |
| Organisation type: | Owner | Acronym: | |
| Name: | Dr. Kristin Kaschner | Position: | Research Affiliate |
| City: | Freiburg | Country: | Germany |
| E-mail: | Kristin.Kaschner@biologie.uni-freiburg.de | | |
| Web site: | www.uni-freiburg.de | | |
| Data format(s): | Raster (ESRI Grid), Tabular (.xls, .csv, or .tab), Vector (point; .shp) | | |
| Distribution format(s): | Tabular (.xls, .csv, or .tab) | Dataset size (uncompressed): | 90 Kb |
| Webpage and/or download: | http://www.aquamaps.org | | |
| Other webpage: | http://data.unep-wcmc.org/datasets/34 | | |
| Web map service: | | | |

Factsheet:

| | | | |
|---|---|---|---|
| Resolution, scale: | 0.5 dd | Reference system: | WGS 1984 |
| West bounding: | -147.0 | East bounding: | 175.0 |
| South bounding: | 12.0 | North bounding: | 90.0 |
| Metadata standard: | UNEP-WCMC Specific | Date of metadata: | 29/05/2015 |

# Global Distribution of Grey Seals (2013)

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| Description: | This dataset shows the modelled distribution of grey seals (Halichoerus grypus). AquaMaps (www.aquamaps.org) is a species distribution modelling approach that provides standardised range maps for marine species using available information on species occurrence. IUCN status: Least Concern (Red List of Threatened Species). |
| 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, 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).<br><br>Predicted distributions often include the potential environmental niche of a species, including historical occurrence. Validation analysis has shown that relative probabilities >=0.4 correspond more closely to the utilised niche of this species: this is the recommended threshold to be used to delineate the core range of this species (precautionary setting). Detailed dataset-specific information (provided by K. Kaschner) is also available. |
| Purpose of creation: | AquaMaps is a tool for generating model-based, large-scale predictions of natural occurrences of species. The maps can be used to inform environmental impact assessments. |
| Creation methodology: | The modelled distribution was generated using the AquaMaps online species distribution model. Methodological notes (provided by K. Kaschner) are also available. Observed occurrence records (512 cells; FAO areas: 21, 27, 31, 34) were obtained (August 2013) from the Global Biodiversity Information Facility (GBIF; www.gbif.org). These were supplemented by additional information obtained through online species databases such as FishBase (www.fishbase.org) and |

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|---|---|
| | SeaLifeBase (www.Sealifebase.org), as well as published information on species-specific habitat usage and expert knowledge. The distribution model was based on five environmental variables (depth, temperature, salinity, primary production, and sea ice concentration), and details of the species envelope are in the dataset-specific information (provided by K. Kaschner). |
| Version: | 1.0 (August 2013) |
| Data lineage: | In acknowledgement that predicted distributions reflect the current state of knowledge, AquaMaps predictions are not a permanent, fixed output, but instead will be revised and updated as new data or information become available or additional experts provide new input.<br><br>Environmental dataset used: HCAF version 5 (August 2013; 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.<br><br>The modelled distribution has been expert-reviewed by Kristin Kaschner (15 December 2013), and the quality of predictions ranks 3 out of 5 (see www.aquamaps.org/rating.html for further details). Expert comment: "Good fit with known species´ distribution. Modification of temperature and ice envelopes to better fit with known species´ distribution. Predicted presence at the coast of Russia might be a bit too far east and species is only vagrant in Greenland waters". |
| Maintenance frequency: | Data are updated in intervals that are uneven in duration. |
| 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.<br><br>For commercial use, please contact business-support@unep-wcmc.org. |
| Contact organisation: | Albert-Ludwigs-University of Freiburg |
| Organisation type: | Owner |
| Acronym: | |
| Name: | Dr. Kristin Kaschner |
| Position: | Research Affiliate |
| City: | Freiburg |
| Country: | Germany |
| E-mail: | Kristin.Kaschner@biologie.uni-freiburg.de |
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Dataset ID: Kaschner-003

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|---|---|
| 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:

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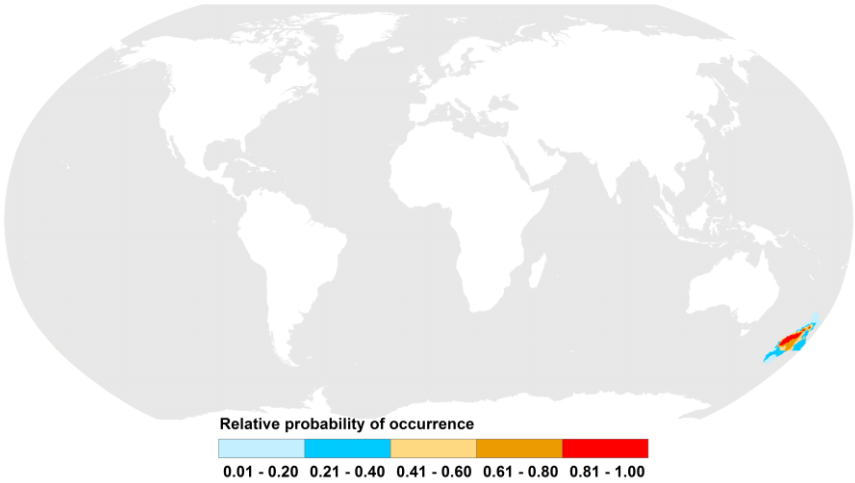
| Resolution, scale: | 0.5 dd | Reference system: | WGS 1984 |
| West bounding: | -180.0 | East bounding: | 180.0 |
| South bounding: | 0.0 | North bounding: | 90.0 |
| Metadata standard: | UNEP-WCMC Specific | Date of metadata: | 29/05/2015 |

# Global Distribution of Hector's Dolphins (2013)

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|---|---|
| Description: | This dataset shows the modelled distribution of Hector's dolphins (Cephalorhynchus hectori). AquaMaps (www.aquamaps.org) is a species distribution modelling approach that provides standardised range maps for marine species using available information on species occurrence. IUCN status: Endangered (Red List of Threatened Species). |
| 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, 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).<br><br>Detailed dataset-specific information (provided by K. Kaschner) is also available. |
| Purpose of creation: | AquaMaps is a tool for generating model-based, large-scale predictions of natural occurrences of species. The maps can be used to inform environmental impact assessments. |
| Creation methodology: | The modelled distribution was generated using the AquaMaps online species distribution model. Methodological notes (provided by K. Kaschner) are also available. Observed occurrence records (< 10 cells; FAO areas: 81) were obtained (August 2013) from the Global Biodiversity Information Facility (GBIF; www.gbif.org). These were supplemented by additional information obtained through online species databases such as FishBase (www.fishbase.org) and SeaLifeBase (www.Sealifebase.org), as well as published information on species-specific habitat usage and expert knowledge. The distribution model was based on four environmental variables (depth, temperature, salinity, and primary production), and details of the species envelope are in the dataset-specific |

information (provided by K. Kaschner).

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| 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.<br><br>Environmental dataset used: HCAF version 5 (August 2013; 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.<br><br>The modelled distribution has been expert-reviewed by Kristin Kaschner (15 December 2013), and the quality of predictions ranks 4 out of 5 (see www.aquamaps.org/rating.html for further details). Expert comment: "Good representation of known occurrence of species, except for false predicted presences around Stewart Island and other offshore shallow banks southwest of New Zealand and off the eastern and southern coast of the North Island, which are not supported by data. Also distribution of North Island subpopulation (Maui's dolphin) along the West coast underestimated and predicted concentrations in South Taranaki Bight more representative of historic range (currently highest numbers between Taranaki & Ninety Mile Beach)". |
| Maintenance frequency: | Data are updated in intervals that are uneven in duration. |
| 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.<br><br>For commercial use, please contact business-support@unep-wcmc.org. |
| Contact organisation: | Albert-Ludwigs-University of Freiburg |
| Organisation type: | Owner |
| Acronym: | |
| Name: | Dr. Kristin Kaschner |
| Position: | Research Affiliate |
| City: | Freiburg |
| Country: | Germany |

Dataset ID: Kaschner-004

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

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|---|---|---|---|
| Distribution format(s): | Tabular (.xls, .csv, or .tab) | Dataset size (uncompressed): | 14 Kb |

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| Webpage and/or download: | http://www.aquamaps.org |
| Other webpage: | http://data.unep-wcmc.org/datasets/32 |
| Web map service: | |

Factsheet:

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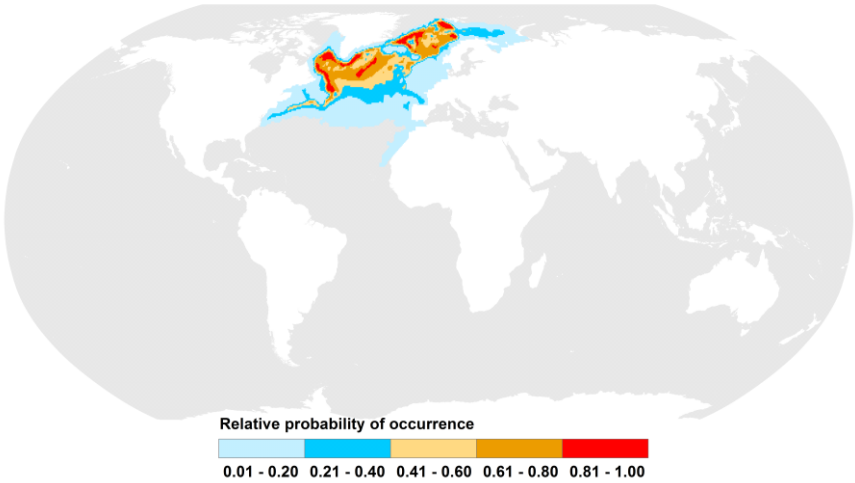
| Resolution, scale: | 0.5 dd | Reference system: | WGS 1984 |
| West bounding: | 160.0 | East bounding: | 180.0 |
| South bounding: | -90.0 | North bounding: | 0.0 |
| Metadata standard: | UNEP-WCMC Specific | Date of metadata: | 29/05/2015 |

# Global Distribution of Northern Bottlenose Whales (2013)

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| Description: | This dataset shows the modelled distribution of Northern bottlenose whales (Hyperoodon ampullatus). AquaMaps (www.aquamaps.org) is a species distribution modelling approach that provides standardised range maps for marine species using available information on species occurrence. IUCN status: Data Deficient (Red List of Threatened Species). |
| 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, 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).<br><br>Predicted distributions often include the potential environmental niche of a species, including historical occurrence. Validation analysis has shown that relative probabilities >=0.4 correspond more closely to the utilised niche of this species: this is the recommended threshold to be used to delineate the core range of this species (precautionary setting). Detailed dataset-specific information (provided by K. Kaschner) is also available. |
| Purpose of creation: | AquaMaps is a tool for generating model-based, large-scale predictions of natural occurrences of species. The maps can be used to inform environmental impact assessments. |
| Creation methodology: | The modelled distribution was generated using the AquaMaps online species distribution model. Methodological notes (provided by K. Kaschner) are also available. Observed occurrence records (142 cells; FAO areas: 21, 27, 31, 34, 37, 41) were obtained (August 2013) from the Global Biodiversity Information Facility (GBIF; www.gbif.org). These were supplemented by additional information obtained |

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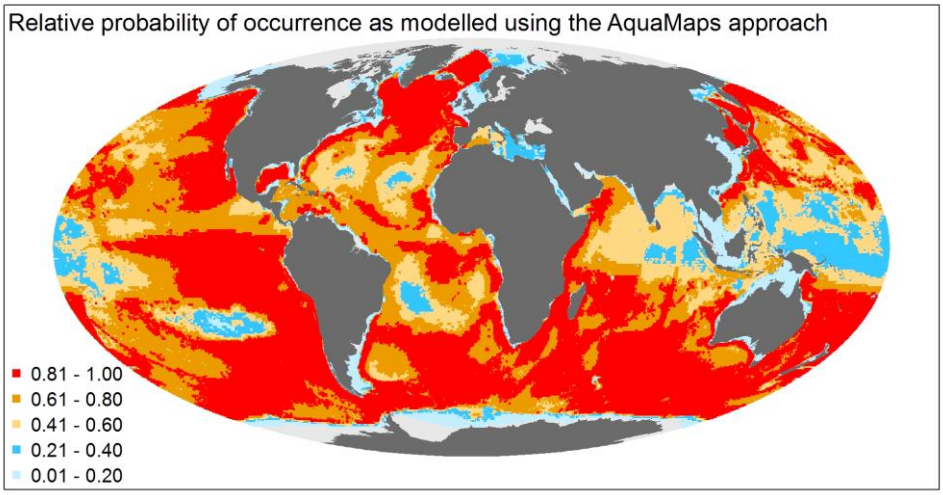
| | through online species databases such as FishBase (www.fishbase.org) and SeaLifeBase (www.Sealifebase.org), as well as published information on species-specific habitat usage and expert knowledge. The distribution model was based on five environmental variables (depth, temperature, salinity, primary production, and sea ice concentration), and details of the species envelope are in the dataset-specific information (provided by K. Kaschner). |
| Version: | 1.0 (August 2013) |
| Data lineage: | In acknowledgement that predicted distributions reflect the current state of knowledge, AquaMaps predictions are not a permanent, fixed output, but instead will be revised and updated as new data or information become available or additional experts provide new input.<br><br>Environmental dataset used: HCAF version 5 (August 2013; 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.<br><br>The modelled distribution has been expert-reviewed by Kristin Kaschner (15 December 2013), and the quality of predictions ranks 3 out of 5 (see www.aquamaps.org/rating.html for further details). Expert comment: "Good match with known sightings and relative occurrences and represents a good compromise capturing both northern and southern maximum migration range extents including the few documented records from the Mediterranean and as far south as the Canary and Cape Verde islands. Adjustment of salinity minimum and maximum thresholds to exclude species from Black Sea and most of Mediterranean. Adjustment of preferred minimum and maximum temperature range to compensate for data availability bias towards more temperate waters in GBIF (whaling records and expert knowledge support a concentration in polar to subpolar waters). Migratory species, thus predictions would be improved by incorporation of seasonality". |
| Maintenance frequency: | Data are updated in intervals that are uneven in duration. |
| 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.<br><br>For commercial use, please contact 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 | | |
| 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) 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, 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 >=0.4 correspond more closely to the utilised niche of this species: this is the recommended threshold to be used to delineate the core range of this species (precautionary setting). Detailed dataset-specific information (provided by K. Kaschner) is also available.

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

**Creation methodology:** The modelled distribution was generated using the AquaMaps online species distribution model. Methodological notes (provided by K. Kaschner) are also available. Observed occurrence records (1,820 cells; FAO areas: 18, 21, 27, 31, 34, 37, 41, 47, 48, 51, 57, 58, 61, 67, 71, 77, 81, 87, 88) were obtained (August 2013) from the Global Biodiversity Information Facility (GBIF; www.gbif.org). These were

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| | supplemented by additional information obtained through online species databases such as FishBase (www.fishbase.org) and SeaLifeBase (www.Sealifebase.org), as well as published information on species-specific habitat usage and expert knowledge. The distribution model was based on five environmental variables (depth, temperature, salinity, primary production, and sea ice concentration), and details of the species envelope are in the dataset-specific information (provided by K. Kaschner). |
| Version: | 1.0 (August 2013) |
| Data lineage: | In acknowledgement that predicted distributions reflect the current state of knowledge, AquaMaps predictions are not a permanent, fixed output, but instead will be revised and updated as new data or information become available or additional experts provide new input.<br><br>Environmental dataset used: HCAF version 5 (August 2013; 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.<br><br>The modelled distribution has been expert-reviewed by Kristin Kaschner (15 December 2013), and the quality of predictions ranks 4 out of 5 (see www.aquamaps.org/rating.html for further details). Expert comment: "Good fit with known species´ occurrence and predictions have been successfully validated in some areas using independent sighting data (Kaschner et al. 2006). Predicted distribution includes northern and southern known maximum range extents of migration of large males. Females and immature animals mostly remain below about 40°N and above 40°S. Minor modification to upper salinity threshold to capture the species´ regular occurrence in the Mediterranean. Occurrence in the Red Sea is not supported by published data. Depth preference of species may be less oceanic in some areas (e.g. Gulf of Mexico). Migratory species, therefore predictions would be improved by the incorporation of seasonality".<br>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.<br><br>For commercial use, please contact 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 | | |
| 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:

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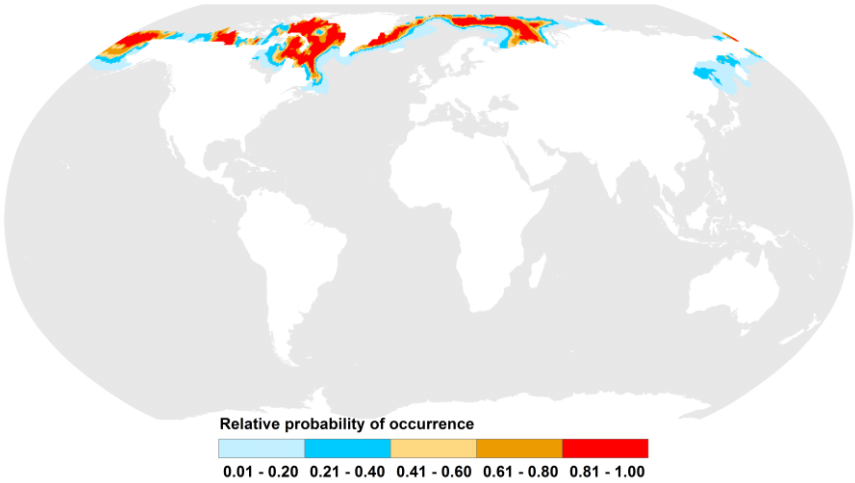
|---|---|---|---|
| Resolution, scale: | 0.5 dd | Reference system: | WGS 1984 |
| West bounding: | -180.0 | East bounding: | 180.0 |
| South bounding: | -90.0 | North bounding: | 90.0 |
| Metadata standard: | UNEP-WCMC Specific | Date of metadata: | 29/05/2015 |

# Global Distribution of Bowhead Whales (2013)

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|---|---|
| Description: | This dataset shows the modelled distribution of bowhead whales (Balaena mysticetus). AquaMaps (www.aquamaps.org) is a species distribution modelling approach that provides standardised range maps for marine species using available information on species occurrence. IUCN status: Least Concern, though some subpopulations are listed as Endangered and Critically Endangered (Red List of Threatened Species). |
| 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, 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).<br><br>Predicted distributions often include the potential environmental niche of a species, including historical occurrence. Validation analysis has shown that relative probabilities >=0.2 correspond more closely to the utilised niche of this species: this is the recommended threshold to be used to delineate the core range of this species (precautionary setting). Detailed dataset-specific information (provided by K. Kaschner) is also available.<br><br>The map was published in: Foote et al. (2013). Ancient DNA reveals that bowhead whale lineages survived Late Pleistocene climate change and habitat shifts. Nature Communications 4: 1677 |
| Purpose of creation: | AquaMaps is a tool for generating model-based, large-scale predictions of natural occurrences of species. The maps can be used to inform environmental impact assessments. |

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| 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 (41 cells; FAO areas: 18, 21, 27, 61,67) were obtained (August 2013) from the Global Biodiversity Information Facility (GBIF; www.gbif.org). These were supplemented by additional information obtained through online species databases such as FishBase (www.fishbase.org) and SeaLifeBase (www.Sealifebase.org), as well as published information on species-specific habitat usage and expert knowledge. The distribution model was based on five environmental variables (depth, temperature, salinity, primary production, and sea ice concentration), and details of the species envelope are in the dataset-specific information (provided by K. Kaschner). |
| Version: | 1.0 (August 2013) |
| Data lineage: | In acknowledgement that predicted distributions reflect the current state of knowledge, AquaMaps predictions are not a permanent, fixed output, but instead will be revised and updated as new data or information become available or additional experts provide new input.<br><br>Environmental dataset used: HCAF version 5 (August 2013; 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.<br><br>The modelled distribution has been expert-reviewed by Kristin Kaschner and Randall Reeves (01 October 2012), and the quality of predictions ranks 3 out of 5 (see www.aquamaps.org/rating.html for further details). Expert comment: "Final predictions match known occurrence of species, based on e.g. Comparison with IUCN range descriptions, quite well. Environmental envelopes were re-calculated after manually excluding all GBIF records in the North Sea (n=6), which represented fossil occurrences of the species. Upper limits of SST, Primary Production and Salinity ranges where then extended to capture known distribution of Okhotsk Sea population. Areas of predicted high suitability east of Franz-Josef-Land probably represent false predicted presences and occurrence of species in the Sea of Okhotsk might be underestimated. Predictions represent a compromise between summer and winter occurrence and may be improved by the incorporation of seasonal aspects. See also most recent map in (Reeves et al. 2014)".<br>Reeves RR et al. (2014). Distribution of endemic cetaceans in relation to hydrocarbon development and commercial shipping in a warming Arctic. Marine Policy 44: 375-389 |
| Maintenance frequency: | Data are updated in intervals that are uneven in duration. |
| 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. |

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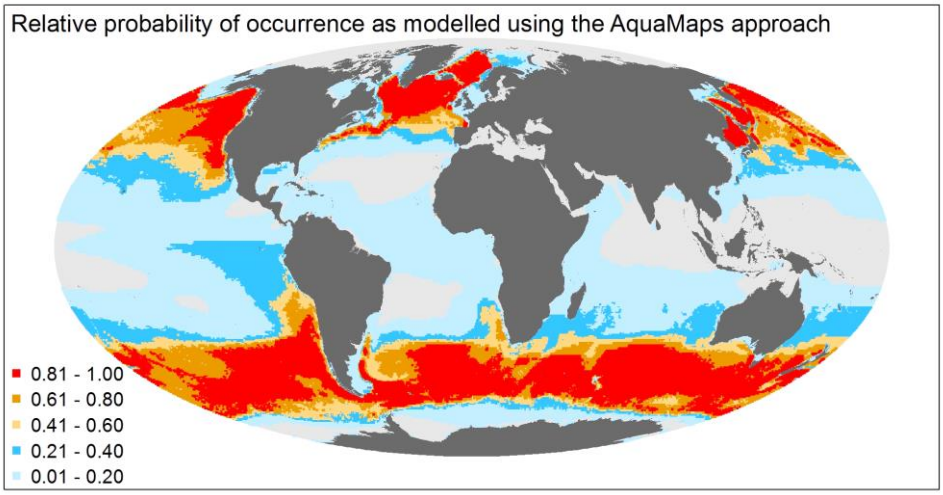
|---|---|
| Other access/use constraints: | Interested users of the dataset should contact Kristin Kaschner who will identify and provide, where appropriate, the most recent updated data.<br><br>For commercial use, please contact business-support@unep-wcmc.org. |
| Contact organisation: | Albert-Ludwigs-University of Freiburg |
| Organisation type: | Owner |
| Acronym: | |
| Name: | Dr. Kristin Kaschner |
| Position: | Research Affiliate |
| City: | Freiburg |
| Country: | Germany |
| E-mail: | Kristin.Kaschner@biologie.uni-freiburg.de |
| Web site: | www.uni-freiburg.de |
| 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)




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

**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, 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 >=0.4 correspond more closely to the utilised niche of this species: this is the recommended threshold to be used to delineate the core range of this species (precautionary setting). Detailed dataset-specific information (provided by K. Kaschner) is also available.

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

**Creation methodology:** The modelled distribution was generated using the AquaMaps online species distribution model. Methodological notes (provided by K. Kaschner) are also available. Observed occurrence records (663 cells; FAO areas: 18, 21, 27, 31, 34, 37, 41, 47, 48, 51, 57, 58, 61, 67, 71, 77, 81) were obtained (August 2013) from the Global Biodiversity Information Facility (GBIF; www.gbif.org). These were

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

**Version:** 1.0 (August 2013)

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

Environmental dataset used: HCAF version 5 (August 2013; 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 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.

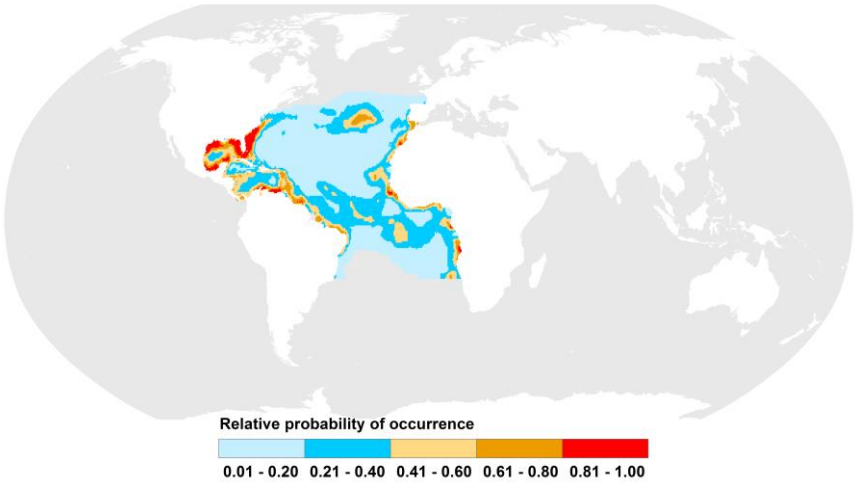
**Main access/use constraint:** 

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

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

| | | | |
|---|---|---|---|
| Contact organisation: | Albert-Ludwigs-University of Freiburg | | |
| Organisation type: | Owner | Acronym: | |
| Name: | Dr. Kristin Kaschner | Position: | Research Affiliate |
| City: | Freiburg | Country: | Germany |
| E-mail: | Kristin.Kaschner@biologie.uni-freiburg.de | | |
| Web site: | www.uni-freiburg.de | | |
| 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)

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|---|---|
| Description: | This dataset shows the modelled distribution of Atlantic spotted dolphins (Stenella frontalis). AquaMaps (www.aquamaps.org) is a species distribution modelling approach that provides standardised range maps for marine species using available information on species occurrence. IUCN status: Data Deficient (Red List of Threatened Species). |
| 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, 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).<br><br>Predicted distributions often include the potential environmental niche of a species, including historical occurrence. Validation analysis has shown that relative probabilities >=0.6 correspond more closely to the utilised niche of this species: this is the recommended threshold to be used to delineate the core range of this species (precautionary setting). Detailed dataset-specific information (provided by K. Kaschner) is also available. |
| Purpose of creation: | AquaMaps is a tool for generating model-based, large-scale predictions of natural occurrences of species. The maps can be used to inform environmental impact assessments. |
| Creation methodology: | The modelled distribution was generated using the AquaMaps online species distribution model. Methodological notes (provided by K. Kaschner) are also available. Observed occurrence records (235 cells; FAO areas: 21, 27, 31, 34, 41, 47) were obtained (August 2013) from the Global Biodiversity Information Facility (GBIF; www.gbif.org). These were supplemented by additional information obtained |

| | |
|---|---|
| | through online species databases such as FishBase (www.fishbase.org) and SeaLifeBase (www.Sealifebase.org), as well as published information on species-specific habitat usage and expert knowledge. The distribution model was based on four environmental variables (depth, temperature, salinity, and primary production), and details of the species envelope are in the dataset-specific information (provided by K. Kaschner). |
| Version: | 1.0 (August 2013) |
| Data lineage: | In acknowledgement that predicted distributions reflect the current state of knowledge, AquaMaps predictions are not a permanent, fixed output, but instead will be revised and updated as new data or information become available or additional experts provide new input.<br><br>Environmental dataset used: HCAF version 5 (August 2013; 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.<br><br>The modelled distribution has been expert-reviewed by Kristin Kaschner (15 December 2013), and the quality of predictions ranks 2 out of 5 (see www.aquamaps.org/rating.html for further details). Expert comment: "Relatively good correspondence with known species´ distribution, particularly in the Gulf of Mexico where there seems to be the largest concentration of sightings, but there is a trade-off between trying to capture observed records in the western north Atlantic along the US coast which leads to large areas of false predicted presences in the eastern Atlantic (i.e., southern Spain, Morocco). Adjustment of minimum temperature limit and upper salinity limit to better capture species´ range. Introduction of southern limit in bounding box was necessary to limit predictions to match reported southern range limit". |
| Maintenance frequency: | Data are updated in intervals that are uneven in duration. |
| 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.<br><br>For commercial use, please contact business-support@unep-wcmc.org. |

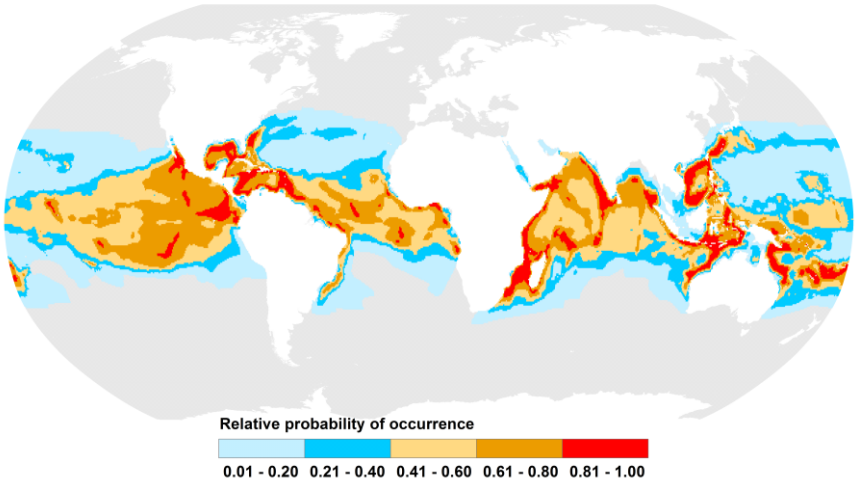
Dataset ID: Kaschner-011

| | | | |
|---|---|---|---|
| Contact organisation: | Albert-Ludwigs-University of Freiburg | | |
| Organisation type: | Owner | Acronym: | |
| Name: | Dr. Kristin Kaschner | Position: | Research Affiliate |
| City: | Freiburg | Country: | Germany |
| E-mail: | Kristin.Kaschner@biologie.uni-freiburg.de | | |
| Web site: | www.uni-freiburg.de | | |
| Data format(s): | Raster (ESRI Grid), Tabular (.xls, .csv, or .tab), Vector (point; .shp) | | |
| Distribution format(s): | Tabular (.xls, .csv, or .tab) | Dataset size (uncompressed): | 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)

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|---|---|
| Description: | This dataset shows the modelled distribution of melon-headed whales (Peponocephala electra). AquaMaps (www.aquamaps.org) is a species distribution modelling approach that provides standardised range maps for marine species using available information on species occurrence. IUCN status: Least Concern (Red List of Threatened Species). |
| 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, 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).<br><br>Predicted distributions often include the potential environmental niche of a species, including historical occurrence. Validation analysis has shown that relative probabilities >=0.4 correspond more closely to the utilised niche of this species: this is the recommended threshold to be used to delineate the core range of this species (precautionary setting). Detailed dataset-specific information (provided by K. Kaschner) is also available. |
| Purpose of creation: | AquaMaps is a tool for generating model-based, large-scale predictions of natural occurrences of species. The maps can be used to inform environmental impact assessments. |
| Creation methodology: | The modelled distribution was generated using the AquaMaps online species distribution model. Methodological notes (provided by K. Kaschner) are also available. Observed occurrence records (235 cells; FAO areas: 21, 27, 31, 34, 41, 47, 51, 57, 61, 67, 71, 77, 81, 87) were obtained (August 2013) from the Global |

| | |
|---|---|
| | Biodiversity Information Facility (GBIF; www.gbif.org). These were supplemented by additional information obtained through online species databases such as FishBase (www.fishbase.org) and SeaLifeBase (www.Sealifebase.org), as well as published information on species-specific habitat usage and expert knowledge. The distribution model was based on four environmental variables (depth, temperature, salinity, and primary production), and details of the species envelope are in the dataset-specific information (provided by K. Kaschner). |
| Version: | 1.0 (August 2013) |
| Data lineage: | In acknowledgement that predicted distributions reflect the current state of knowledge, AquaMaps predictions are not a permanent, fixed output, but instead will be revised and updated as new data or information become available or additional experts provide new input.<br><br>Environmental dataset used: HCAF version 5 (August 2013; 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).<br><br>The modelled distribution has been expert-reviewed by Kristin Kaschner (15 December 2013), and the quality of predictions ranks 3 out of 5 (see www.aquamaps.org/rating.html for further details). Expert comment: "Good correspondence with known species´ distribution range, but dearth of available data makes assessment of quality of predictions difficult. Possibly false predicted absence from the coast of Peru and Namibia. Adjustment of lower temperature limit to better capture this species´ range and underestimation of species occurrence around areas associated with low salinity and high primary productivity (e.g. Northern Bay of Bengal etc)". |
| Maintenance frequency: | Data are updated in intervals that are uneven in duration. |
| 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.<br><br>For commercial use, please contact business-support@unep-wcmc.org. |

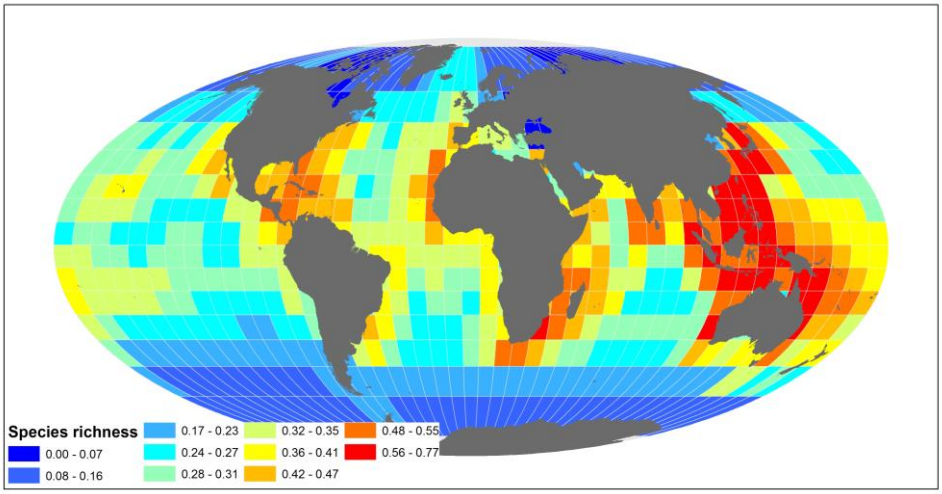
Dataset ID: Kaschner-012

| | | | |
|---|---|---|---|
| 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 | | |
| 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-latitudinal 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://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 (TunaBllfsh); derived oceanic shark species richness (OceanShark); derived euphausiid species richness (Euphausiid); derived foraminifera species richness (co-kriged; ForamCK).

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

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

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

**Version:** --

**Data lineage:**

**Category:** Biodiversity metric

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

**Similar datasets:**

**Limitations:** Species included in the analysis of richness were limited to taxa for which sufficient records were accessible to determine global distribution. For example, data on deep-sea diversity and marine invertbrates 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 and www.unep-wcmc.org/policies. For commercial use, please contact business-support@unep-wcmc.org.

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

If working with individual taxa (rather than cross-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

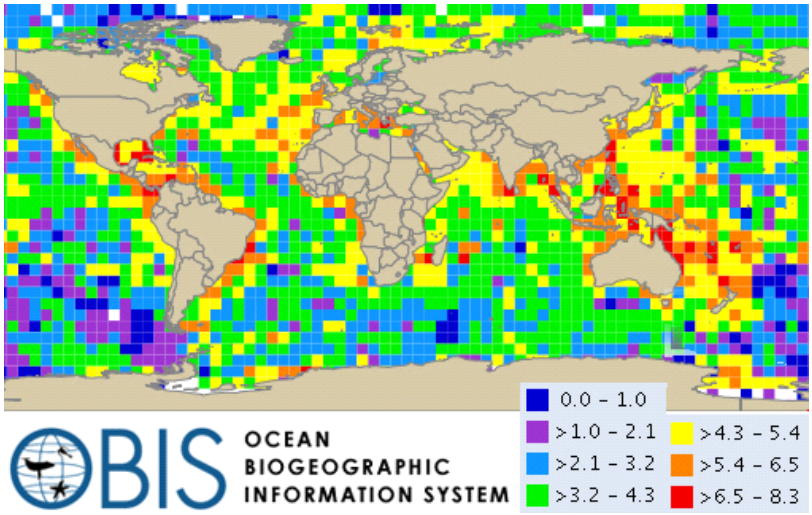
"MetadataTittensor10Nature_individual_taxa.pdf" for lists).

| | | | |
|---|---|---|---|
| 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: | www.unep-wcmc.org | | |
| Data format(s): | Vector (polygon; .shp) | | |
| Distribution format(s): | Vector (polygon; .shp) | Dataset size (uncompressed): | 1.04 MB |
| 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 | | |

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 Biogeograhic Information System (OBIS). OBIS (www.iobis.org) is a global network that integrates marine species distribution data from various sources. OBIS was the data integration component of the Census of Marine Life project (www.coml.org), and is the marine sister-network of the Global Biodiversity Information Facility (GBIF; www.gbif.org), and the biodiversity data management component of the Intergovernmental Oceanographic Commission (IOC; http://ioc-unesco.org/).

**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://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 for futher details). The content of OBIS is suitable for the study of broad patterns of the distribution of biodiversity; it is not sufficient to allow a detailed analysis on a regional scale, or to study the distribution patterns of individual taxa. |
| Maintenance frequency: | Data are updated in intervals that are uneven in duration. |
| Main access/use constraint: | See 'Other access/use constraint(s)'. |
| Other access/use constraints: | Data use conditions can be accessed at www.iobis.org/data/policy/disclaimer. Data and maps must be cited as per www.iobis.org/about/citation. |
| Contact organisation: | OBIS Secretariat, Intergovernmental Oceanographic Commission (UNESCO) |

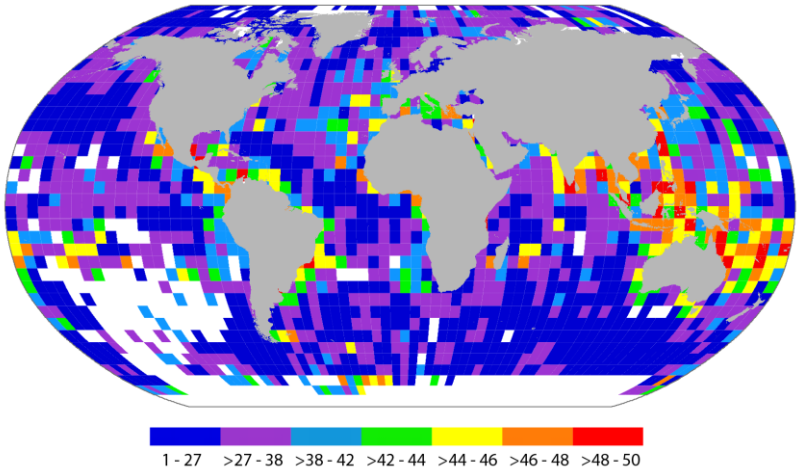
| | | | |
|---|---|---|---|
| Organisation type: | Resource provider | Acronym: | OBIS, IOC |
| Name: | Mr Ward Appeltans | Position: | Project Manager |
| City: | Oostende | Country: | Belgium |
| E-mail: | w.appeltans@unesco.org | | |
| Web site: | www.iobis.org | | |
| Data format(s): | Web map service | | |
| Distribution format(s): | Web map service | Dataset size (uncompressed): | Not applicable |

| | |
|---|---|
| Webpage and/or download: | http://data.unep-wcmc.org/datasets/15 |
| Other webpage: | 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) is a global network that integrates marine species distribution data from various sources. OBIS was the data integration component of the Census of Marine Life project (www.coml.org), and is the marine sister-network of the Global Biodiversity Information Facility (GBIF; www.gbif.org), and the biodiversity data management component of the Intergovernmental Oceanographic Commission (IOC; http://ioc-unesco.org/). |
| Citation(s): | Ocean Biogeograhic 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://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.<br><br>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 (here 50). It is hence a sample-size independent proxy for species richness. |
| Version: | 2014 |
| Data lineage: | -- |
| Category: | Biodiversity metric |

Dataset ID: OBIS-002

| | |
|---|---|
| Keywords: | coastal, marine, high seas, metric, species richness, biodiversity, UNESCO, OBIS, GBIF, COML |
| Similar datasets: | OBIS-001 |
| Limitations: | The index is based on records collated from various sources and is thus prone to error in species identification, although only data from authoritative scientists and science organizations approved by OBIS are served. Major gaps in data and knowledge about the oceans are reflected in OBIS' data coverage (see www.iobis.org/data/policy/disclaimer for futher details). The content of OBIS is suitable for the study of broad patterns of the distribution of biodiversity; it is not sufficient to allow a detailed analysis on a regional scale, or to study the distribution patterns of individual taxa. |
| Maintenance frequency: | Data are updated in intervals that are uneven in duration. |
| Main access/use constraint: | See 'Other access/use constraint(s)'. |
| Other access/use constraints: | Data use conditions can be accessed at www.iobis.org/data/policy/disclaimer. Data and maps must be cited as per www.iobis.org/about/citation. |
| Contact organisation: | OBIS Secretariat, Intergovernmental Oceanographic Commission (UNESCO) |

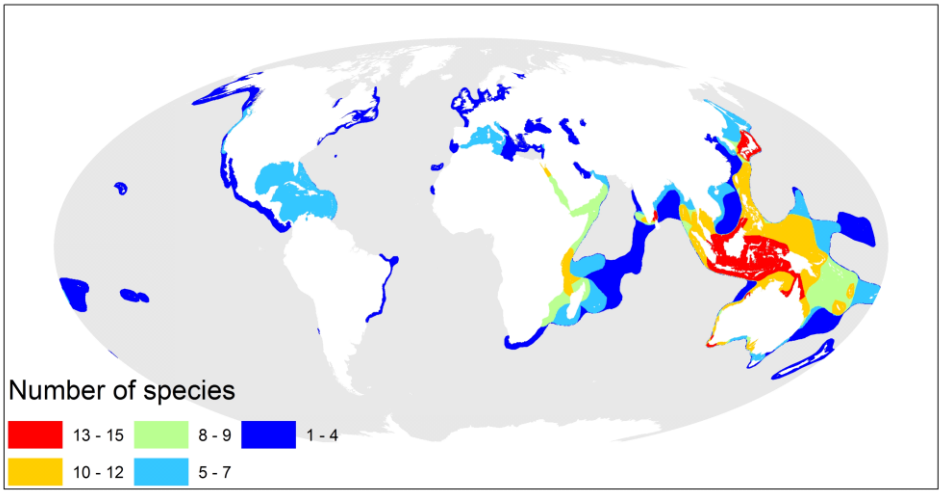
| | | | |
|---|---|---|---|
| Organisation type: | Resource provider | Acronym: | OBIS, IOC |
| Name: | Mr Ward Appeltans | Position: | Project Manager |
| City: | Oostende | Country: | Belgium |
| E-mail: | w.appeltans@unesco.org | | |
| Web site: | www.iobis.org | | |
| Data format(s): | Web map service | | |
| Distribution format(s): | Web map service | Dataset size (uncompressed): | Not applicable |

| | |
|---|---|
| Webpage and/or download: | http://data.unep-wcmc.org/datasets/16 |
| Other webpage: | www.iobis.org/node/214 |
| Web map service: | http://iobis.org/geoserver/wms |

Factsheet:

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

# Global Seagrass Species Richness (2003)




| | |
|---|---|
| Description: | This dataset shows the global distribution of seagrass species richness, or global seagrass biodiversity. |
| Citation(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 ; http://data.unep-wcmc.org/datasets/9 |
| Temporal range: | 2003 |
| Geographical range: | Global |
| Supplementary information: | Attribute table: number of seagrass species (gridcode). |
| Purpose of creation: | |
| Creation methodology: | The ranges of individual seagrass species were combined so as to produce a layer showing the number of species present in given areas. |
| Version: | 1.0 |
| Data lineage: | |
| Category: | Biodiversity metric |
| Keywords: | coastal, marine, blue carbon, seagrass, habitat, biodiversity, species richness |
| Similar datasets: | WCMC-013-014 |
| Limitations: | The boundaries do not represent actual ranges as seagrass are distributed in waters shallow enough for sunlight to penetrate. No surface area calculations should be attempted. |
| Maintenance frequency: | Data are not being updated. |
| Main access/use constraint: | UNEP-WCMC General Data License (excluding WDPA). See www.unep-wcmc.org/policies/general-data-license-excluding-wdpa#data_policy and www.unep-wcmc.org/policies. For commercial use, please contact business-support@unep-wcmc.org. |

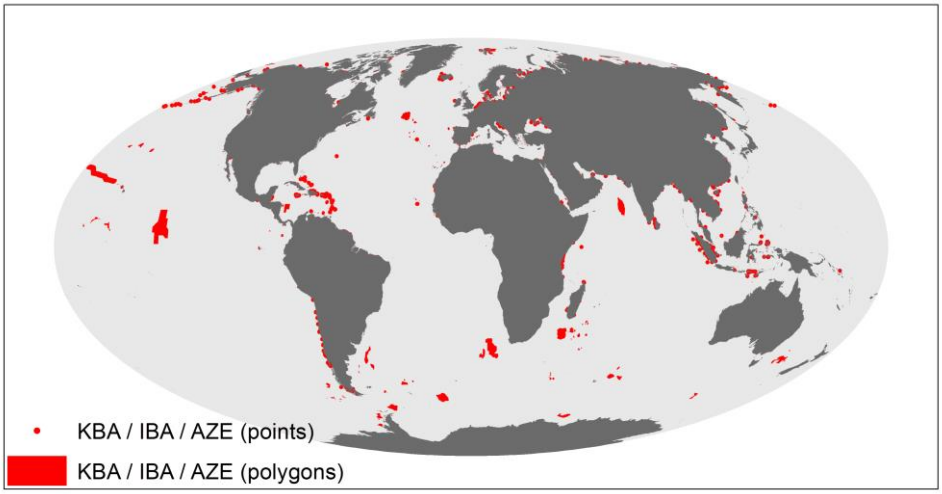
| | | | |
|---|---|---|---|
| Other access/use constraints: | None | | |
| Contact organisation: | UNEP World Conservation Monitoring Centre | | |
| Organisation type: | Custodian | Acronym: | UNEP-WCMC |
| Name: | Dr. Steve Fletcher | Position: | Head of Programme |
| City: | Cambridge | Country: | United Kingdom |
| E-mail: | steve.fletcher@unep-wcmc.org | | |
| Web site: | 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 |

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 |

## Global Distribution of KBAs, IBAs and AZEs




**Description:** The dataset shows the global distribution of Key Biodiversity Areas (KBA), Important Bird 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.

**Citation(s):** Birdlife International, Conservation International (2013). 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

**Temporal range:** 2005-2013 (date of addition to the dataset)

**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); ?? code (?? FINCODE; ?? unique site ID which encompasses a 2-digit code for the country + a unique sites number); latitude (SITLAT); longitude (SITLONG); three fields coding for IBA/KBA/AZE status (IBASTATUS/KBASTATUS/AZESTATUS; confirmed, proposed, candidate, superseded); 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); data source (SOURCE); geometry type (DELGEOM; draft or refined polygon); creator (CREATEDBY); person who added the record (ADDEDBY); date when added to the dataset (ADDEDDATE); person who edited the record and when (CHANGEBY/CHANGEDATE); trigger(s) for the designation (TRIGGERS; VU, endemic, migratory birds/congregations, CR/EN, other, in various combinations).

The factsheets providing background information relevant to this dataset can be

found at http://biodiversitya-z.org/content/key-biodiversity-areas-kba, http://www.biodiversitya-z.org/content/alliance-for-zero-extinction-sites-aze, and http://www.biodiversitya-z.org/content/important-bird-and-biodiversity-areas-iba.

**Purpose of creation:**

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: threatened biodiversity, geographically-restricted biodiversity, outstanding ecological integrity and/or outstanding biological processes, such as migratory or congregatory sites.

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.

IBAs are key sites for the conservation of birds, and are designated on the basis of criteria relating to globally threatened species, restricted-range species, biome-restricted species or congregations. These sites are identified based on the presence of more than threshold numbers of (1) globally threatened species and/or (2) congregations (areas holding >1% of the global or, in some cases, biogeographic population). For seabirds, a global marine IBA directory was launched in 2012 (maps.birdlife.org/marineIBAs). The types of site that qualify as marine IBAs include seabird breeding colonies, foraging areas around breeding colonies, non-breeding (usually coastal) concentrations, migratory bottlenecks and feeding areas for pelagic species.

To improve the standardisation of KBA identification further, the IUCN Species Survival Commission and the World Commission on Protected Areas have convened a Joint Task Force on 'biodiversity and protected areas', one of the objectives of which is to consolidate scientific stakeholder consensus on the criteria and thresholds for KBA identification. Work is also currently being carried out in collaboration with the EBSAs ('Ecologically or Biologically Significant Marine Areas') community and the Global Ocean Biodiversity Initiative (GOBI), under the auspices of the Convention on Biological Diversity (CBD), to ensure synergies between KBAs and EBSAs, those open-ocean waters and deep-sea habitats in need of protection. Although there is no official endorsement from the CBD for KBAs, it is suggested that KBAs could become a list of potential EBSAs, in the same way that marine IBAs already are for EBSAs, and freshwater IBAs for the Ramsar Convention.

**Version:** 2013

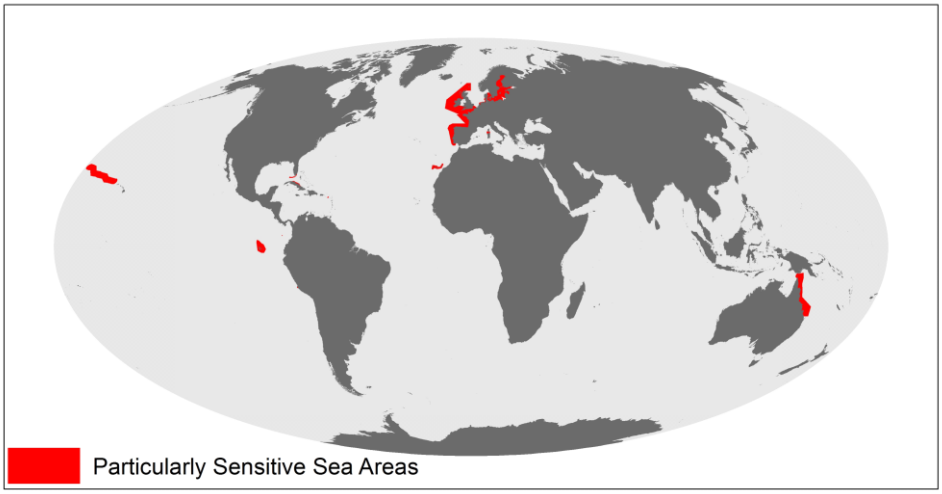
**Data lineage:** The identification and delineation of KBAs are on-going processes, particularly in the marine realm, and updated versions featuring newly designated sites will be released in the future.

**Category:** Area of biodiversity importance

Dataset ID: Birdlife-001

| | |
|---|---|
| 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).<br><br>As the dataset may contain overlapping polygons, a dissolve operation (within a GIS) might be needed before surface area calculations are carried out. |
| Maintenance frequency: | Data are updated in intervals that are uneven in duration. |
| Main access/use constraint: | Terms of use for IBA data can be found at www.birdlife.org/datazone/info/dataterms. Commercial use is prohibited without prior written permission of BirdLife International. |
| Other access/use constraints: | Terms of use for AZE data can be found at www.zeroextinction.org/pdf/TermsofUseAZEdata_2011.pdf. Commercial use is prohibited without prior written permission of the Alliance. For other KBA data, contact Birdlife International (birdlife@birdlife.org) for terms of use. |
| Contact organisation: | Birdlife International |
| Organisation type: | Custodian |
| Acronym: | |
| Name: | Mark Balman |
| Position: | GIS Support Analyst |
| City: | Cambridge |
| Country: | United Kingdom |
| E-mail: | Mark.Balman@birdlife.org |
| Web site: | www.birdlife.org |
| Data format(s): | Vector (point; .shp), Vector (polygon; .shp) |
| Distribution format(s): | Vector (point; .shp), Vector (polygon; .shp) |
| Dataset size (uncompressed): | 247 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: | 29/05/2015 |

# Global Distribution of Particularly Sensitive Sea Areas (2014)




**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.

**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:** 2014

**Geographical range:** Global

**Supplementary information:** 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 maratime activities.

**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:** 1.0

**Data lineage:**

**Category:** Area of biodiversity importance

**Keywords:** marine, coastal, designation, PSSA

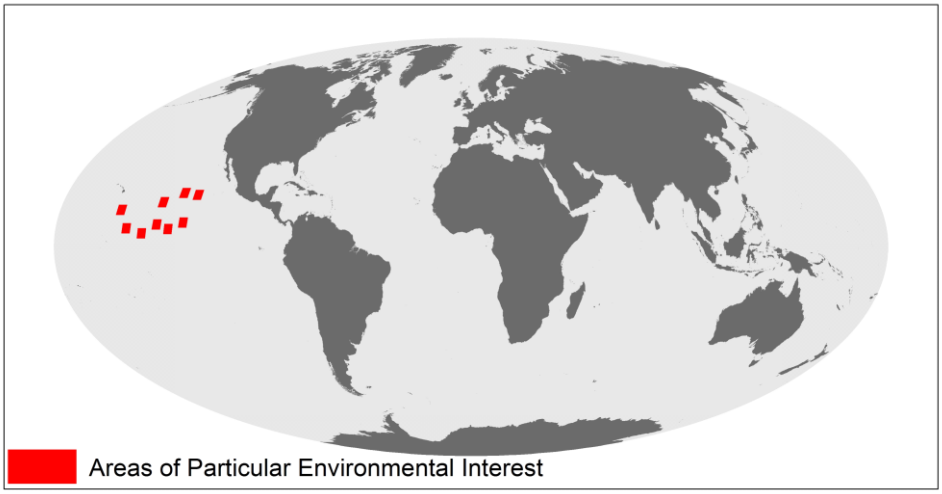
**Similar datasets:**

Dataset ID: IMO-001

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 | | |
| Data format(s): | Vector (polygon; .shp) | | |
| Distribution format(s): | Vector (polygon; .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: | 23/06/2015 |

# Areas of Particular Environmental Interest (2012)




**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:**

**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:** Area of biodiversity importance

Dataset ID: ISA-001

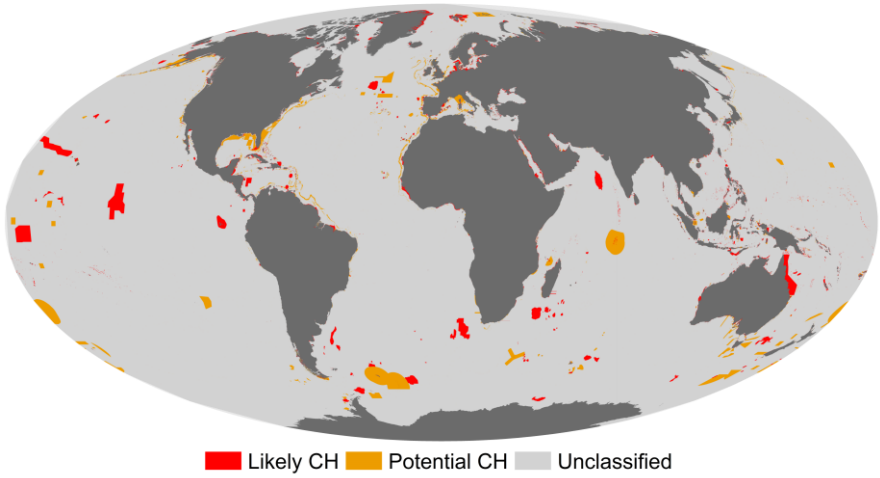
| | |
|---|---|
| Keywords: | marine, deep sea, high seas |
| Similar datasets: | |
| Limitations: | The dataset has sites only in one region (Pacific), but more sites are anticipated to be designated in the coming years. |
| Maintenance frequency: | Data are updated in intervals that are uneven in duration. |
| Main access/use constraint: | See 'Other access/use constraint(s)'. |
| Other access/use constraints: | Interested users should contact marine@unep-wcmc.org 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 Critical Habitat (2015) as per IFC PS6




| | |
|---|---|
| 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). 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).<br><br>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.<br><br>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:** Area 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 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.

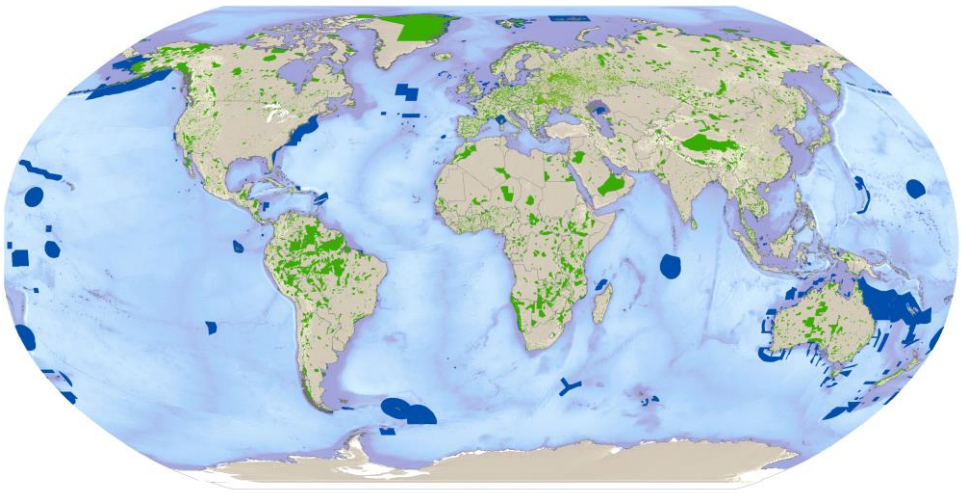
**Main access/use constraint:** UNEP-WCMC General Data License (excluding WDPA). See www.unep-wcmc.org/policies/general-data-license-excluding-wdpa#data_policy and www.unep-wcmc.org/policies. For commercial use, please contact business-support@unep-wcmc.org.

**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.

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: | www.unep-wcmc.org | | |
| Data format(s): | Raster (ESRI Grid), Vector (polygon; .shp) | | |
| Distribution format(s): | Raster (ESRI Grid) | Dataset size (uncompressed): | 262 Mb |
| Webpage and/or download: | marine@unep-wcmc.org | | |
| Other webpage: | http://wcmc.io/IFC_PS6_Criteria | | |
| Web map service: | http://dx.doi.org/10.1016/j.marpol.2014.11.007 | | |
| Factsheet: | http://wcmc.io/critical-habitat | | |
| Resolution, scale: | 1 km | 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: | 29/05/2015 |

# 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, 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

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). 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 area |
| 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).<br><br>The boundaries, names and designations used in this dataset do not imply official endorsement nor acceptance by the United Nations and contributory organisations. |
| Maintenance frequency: | Data are updated on a monthly basis. |
| Main access/use constraint: | UNEP-WCMC WDPA Data Licence. See www.unep-wcmc.org/policies/wdpa-data-licence#data_policy and www.unep-wcmc.org/policies. For commercial use, please contact business-support@unep-wcmc.org. |
| Other access/use constraints: | None |
| Contact organisation: | 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 |
| Web site: | 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

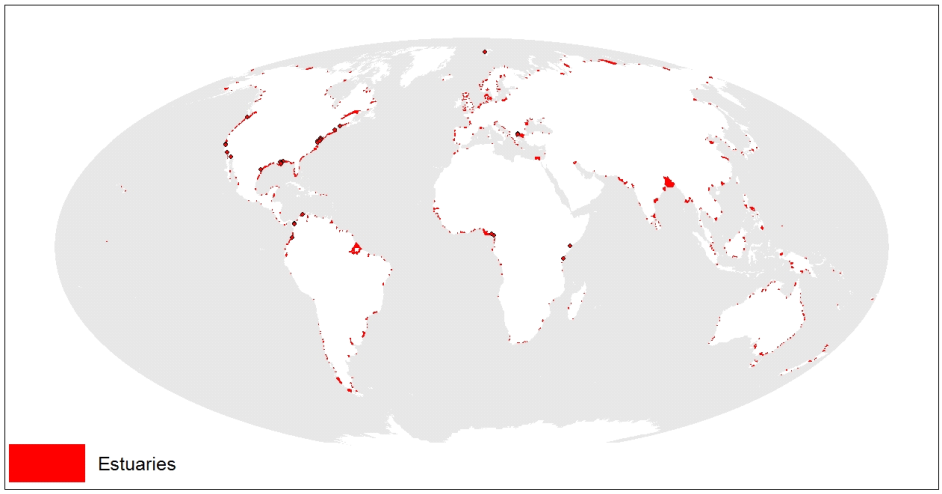
Other webpage: http://data.unep-wcmc.org/datasets/12

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 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.seaaroundus.org).

**Citation(s):** Alder J (2003). Putting the coast in the "Sea Around Us". The Sea Around Us Newsletter 15: 1-2. URL: http://seaaroundus.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.seaaroundus.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 m3.s-1 (cubic metres per second) (DISCHARGE), the years between which the discharge was measured (YEAR_START, YEAR_END), river system (RIVER_SYS), data sources (REF1, REF2).

Data sources can be accessed by matching the number in the attribute table (REF1, REF2) with the associated record in the excel file ("UBC-003-SAU-Estuaries2003-References.xlsx") which accompanies the data.

**Purpose of creation:** The global estuary database is the first to be designed at a global scale and the first to include digitized shape cells for each estuary. The dataset was created by Sea Around Us (http://www.seaaroundus.org/).

**Creation methodology:** Water bodies were selected so as to include the estuaries of all the world's major rivers, as well as the small estuaries of countries without major rivers. As such, no specific minimum size/discharge was applied to determine inclusion of estuaries in the dataset. The information has been gathered from a large number of sources, including reports, journals and electronic resources. Overall, the database accounts for over 80% of the world's freshwater discharge, and contains information about

| | |
|---|---|
| | the name, location, surface area (in km2) and mean freshwater input (in m3.s-1) (cubic metres per second), calculated over a specified number of years.<br><br>In 2014, the "Sea Around Us" (University of British Columbia), provided UNEP-WCMC with two spatial datasets: (1) a polygon dataset with no attribute information (apart from ID_NUMBER), and (2) a point dataset with detailed attribute and source information. Using the matching estuary ID numbers, UNEP-WCMC populated the polygon dataset's attribute table ("UBC-003-SAU-Estuaries2003-Polygons.shp") with the relevant information from the point dataset. Where an estuary did not have a corresponding polygon, the information has been retained as point data ("UBC-003-SAU-Estuaries2003-Points-woCorrespondingPolygon.shp"): this dataset (and the original point dataset "UBC-003-SAU-Estuaries2003-AllPoints.shp") are not distributed. |
| Version: | 2.0 (2014) |
| Data lineage: | This is a modified version of the 2003 version of the dataset. See 'Creation methodology' for details. |
| Category: | Biogeographic classification |
| Keywords: | Estuaries, coastal, marine |
| Similar datasets: | None |
| Limitations: | There appears to be shifting in some locations. The dataset is not comprehensive and does not include every estuary in the world. The estuaries included are of varying spatial resolutions. These data also include some lagoons and fjords. |
| Maintenance frequency: | Data are not being updated. |
| Main access/use constraint: | UNEP-WCMC General Data License (excluding WDPA). See www.unep-wcmc.org/policies/general-data-license-excluding-wdpa#data_policy and www.unep-wcmc.org/policies. For commercial use, please contact business-support@unep-wcmc.org. |
| Other access/use constraints: | Please cite the data source in all publications. |
| Contact organisation: | Sea Around Us, University of British Columbia |
| Organisation type: | Owner |
| Acronym: | UBC |
| Name: | Dr. Dirk Zeller |
| Position: | Senior Researcher |
| City: | Vancouver |
| Country: | Canada |
| E-mail: | d.zeller@fisheries.ubc.ca |
| Web site: | www.seaaroundus.org |
| Data format(s): | Vector (point; .shp), Vector (polygon; .shp) |
| Distribution format(s): | Vector (polygon; .shp) |
| Dataset size (uncompressed): | 4.8 Mb |

Dataset ID: UBC-003

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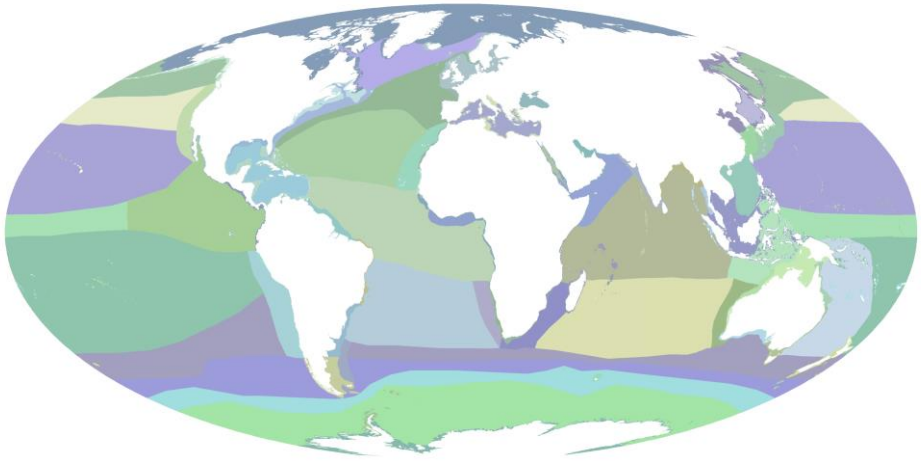
| Webpage and/or download: | http://data.unep-wcmc.org/datasets/23 |
| Other webpage: | www.seaaroundus.org |
| Web map service: | http://ec2-54-204-216-109.compute-1.amazonaws.com:6080/arcgis/rest/services/marine/UBC_003_SAU_Estuaries/MapServer |
| Factsheet: | www.marbef.org/wiki/estuaries |

| | | | |
|---|---|---|---|
| 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. 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. URL: http://bioscience.oxfordjournals.org/content/57/7/573.abstract; 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 Coastal Management 60: 19-30. URL:

| | |
|---|---|
| | http://www.sciencedirect.com/science/article/pii/S0964569111002201; 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).<br><br>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).<br><br>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).<br><br>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.<br><br>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 oceanogarphic conditions, seasons, or longer term climate change.<br><br>There is a possible mismatch involving where the East Siberian Sea meets the Chukchi Sea. |

| | |
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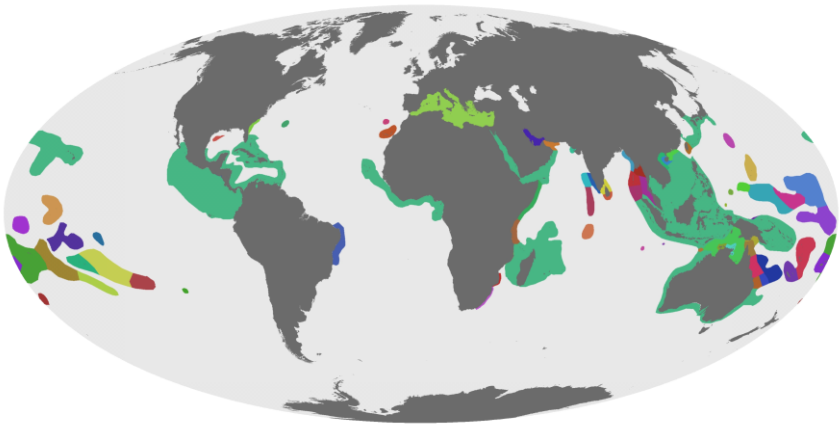
| Maintenance frequency: | Data are not being updated. |
| Main access/use constraint: | UNEP-WCMC General Data License (excluding WDPA). See www.unep-wcmc.org/policies/general-data-license-excluding-wdpa#data_policy and www.unep-wcmc.org/policies. For commercial use, please contact business-support@unep-wcmc.org. |
| 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 |
| 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://data.unep-wcmc.org/datasets/38 |
| Other webpage: | http://www.arcgis.com/home/item.html?id=b0ca60c9472a432f9d659b86864f376 |
| 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 |
| 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: | 21/09/2015 |

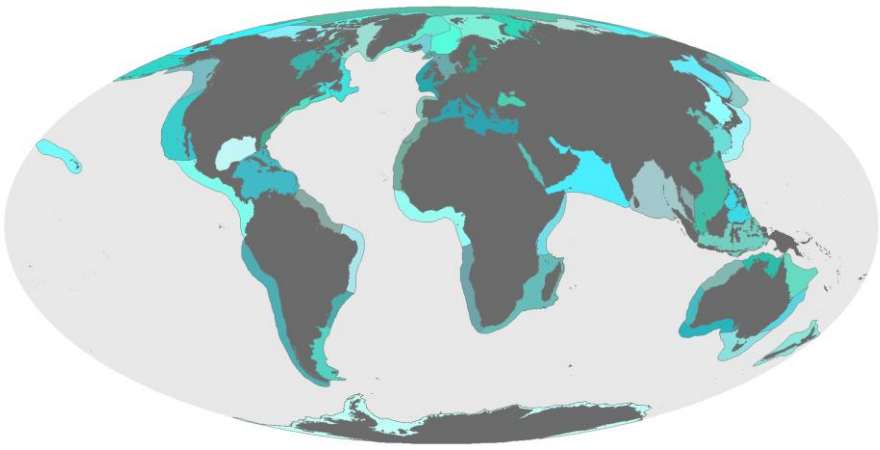
# Coral Ecoregions of the World (2009)



| | |
|---|---|
| Description: | This dataset shows the global distribution of 141 coral ecoregions, delineated on the basis of known internal faunal and/or environmental uniformity and external distinctiveness from neighbouring regions. |
| Citation(s): | Veron JEN, Devantier LM, Turak E, Green AL, Kininmonth S, Stafford-Smith M, Peterson N (2009). Delineating the coral triangle. Journal of Coral Reef Studies 11(2): 91-100. URL: https://www.jstage.jst.go.jp/article/galaxea/11/2/11_2_91/_pdf |
| Temporal range: | 2009 |
| Geographical range: | Global |
| Supplementary information: | Attribute table: ecoregion name (ECONAME); total number of coral species (SUMOTOT_S); coral diversity (diversity); coral endemism, level 1 (Endem_1); coral endemism, level 2 (Endem_2); coral endemism, level 3 (Endem_3). |
| Purpose of creation: | The findings reported in the associated peer-reviewed paper provide a clear scientific justification for the Coral Triangle Initiative, arguably one of the world's most significant reef conservation undertakings. |
| Creation methodology: | The 798 species maps in the "Coral Geographic" database ("TNC-003-CoralEcoregions2009.mdb") were divided into 141 ecoregions. See Veron et al. (2009) for further details. |
| Version: | 1.0 |
| Data lineage: | |
| Category: | Biogeographic classification |
| Keywords: | marine, corals, ecoregion, endemism |
| Similar datasets: | |
| Limitations: | Data are comprehensive to the level of ecoregions, but are insufficient for some regions and are not necessarily representative of subdivisions of ecoregions. |

| | | | |
|---|---|---|---|
| Maintenance frequency: | Data are not being updated. | | |
| Main access/use constraint: | See 'Other access/use constraint(s)'. | | |
| Other access/use constraints: | Please contact j.veron@coralreefresearch.com | | |
| Contact organisation: | Coral Reef Research | | |
| Organisation type: | Resource provider | Acronym: | |
| Name: | John Veron | Position: | |
| City: | | Country: | |
| E-mail: | j.veron@coralreefresearch.com | | |
| Web site: | | | |
| Data format(s): | Vector (polygon; .shp) | | |
| Distribution format(s): | Vector (polygon; .shp) | Dataset size (uncompressed): | 37.1 Mb |
| Webpage and/or download: | https://www.jstage.jst.go.jp/article/galaxea/11/2/11_2_91/_pdf | | |
| Other webpage: | | | |
| Web map service: | | | |
| Factsheet: | | | |
| Resolution, scale: | Not applicable | Reference system: | WGS 1984 |
| West bounding: | -180.0 | East bounding: | 180.0 |
| South bounding: | -90.0 | North bounding: | 90.0 |
| Metadata standard: | UNEP-WCMC Specific | Date of metadata: | 23/06/2015 |

# Large Marine Ecosystems of the World (2013)

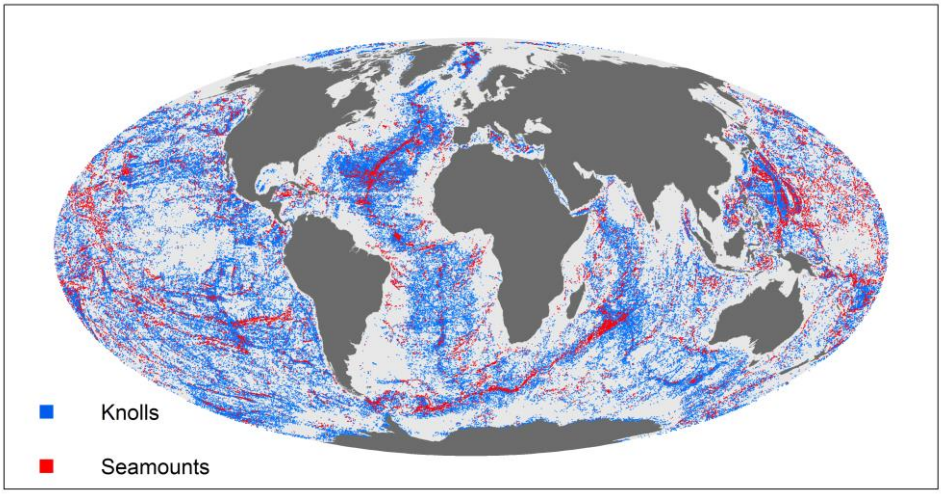


| | |
|---|---|
| Description: | This dataset shows the boundaries of the 66 Large Marine Ecosystems (LMEs) of the world. LMEs are natural regions of ocean space encompassing coastal waters from river basins and estuaries to the seaward boundary of continental shelves and the outer margins of coastal 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<br><br>Other cited references(s):<br>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 |
| 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. URL: http://www.sciencedirect.com/science/article/pii/S0967063711000392 ; http://data.unep-wcmc.org/datasets/41 |
| 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.<br><br>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.<br><br>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. |

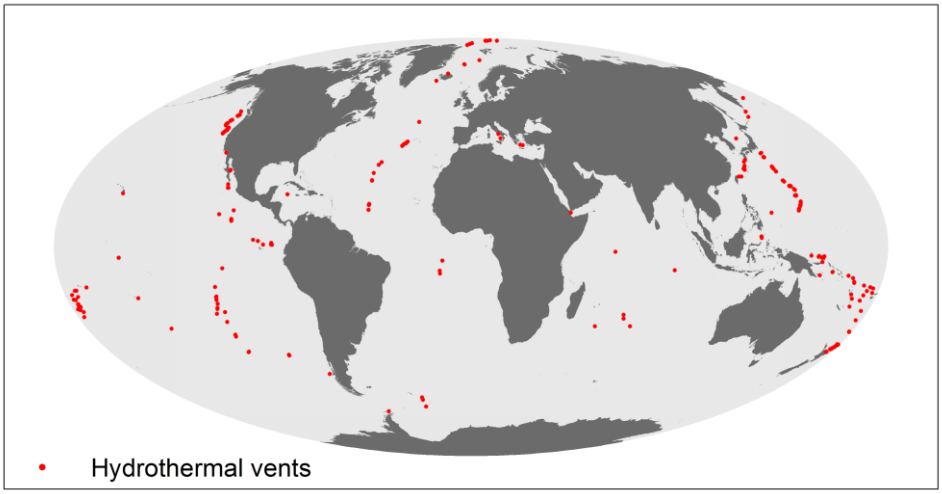
Dataset ID: ZSL-002

| | |
|---|---|
| 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.<br><br>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 |
| Organisation type: | Owner |
| Acronym: | ZSL |
| Name: | Dr. Chris Yesson |
| Position: | Research Scientist |
| City: | London |
| Country: | United Kingdom |
| E-mail: | chris.yesson@ioz.ac.uk |
| Web site: | www.zsl.org |
| Data format(s): | Tabular (.xls, .csv, or .tab), Vector (point; .shp), Vector (polygon; .shp) |
| Distribution format(s): | Vector (point; .shp), Vector (polygon; .shp) |
| Dataset size (uncompressed): | 84.5 Mb |
| 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 |

Dataset ID: ZSL-002

| | | | |
|---|---|---|---|
| Factsheet: | http://wcmc.io/seamounts | | |
| Resolution, scale: | Not applicable | Reference system: | WGS 1984 |
| West bounding: | -180.0 | East bounding: | 180.0 |
| South bounding: | -77.8 | North bounding: | 85.0 |
| Metadata standard: | UNEP-WCMC Specific | Date of metadata: | 14/08/2015 |

## Global Distribution of Hydrothermal Vents (2010)




**Description:** This dataset shows the global distribution of hydrothermal vents that were studied in terms of their biology, as part of the Chemosynthetic Ecosystem Science (ChEss) project. The ChEss project, which was a field project of the Census of Marine Life (CoML) programme, lead to the creation of ChEssBase, an online information system on species distribution from deep-sea chemosynthetic ecosystems. ChEss addressed the main questions of CoML on diversity, abundance and distribution of marine species, focusing on deep-water reducing environments, such as hydrothermal vents, cold seeps, whale falls, sunken wood and areas of low oxygen that intersect with continental margins and seamounts.

**Citation(s):** Baker MC, Ramirez-Llodra E, Perry D (2010). ChEssBase: an online information system on species distribution from deep-sea chemosynthetic ecosystems. Version 3. Chemosynthetic Ecosystem Science (ChEss) project. Southampton (UK): National Oceanography Centre. URL: www.noc.soton.ac.uk/chess

**Temporal range:** Unknown

**Geographical range:** Global

**Supplementary information:** Attribute table: location (Name); latitude (lat); longitude (lon)

ChEssBase can be searched (taxonomy, site/location, habitat type, references, specimen) at www.noc.soton.ac.uk/chess/database/db_search.php. ChEssBase has been integrated with the Ocean Biogeographic Information System (OBIS; http://www.iobis.org).

**Purpose of creation:** Only a small fraction of the global ridge system (approx. 65,000 km) and of the vast continental margin regions have been explored and their communities described. The ChEss project aimed to improve knowledge on the diversity, abundance and distribution of species from vents, seeps and other reducing habitats at a global scale, to understand the abiotic and biotic processes that shape and maintan these ecosystems and their biogeography. The field programme aimed to explain the main gaps in our knowledge of the diversity, abundance and distribution of chemosynthetic species globally.

**Creation methodology:** A centralised geo- and bio-referenced database (ChEssBase) of vent and seep species was created, to incorporate archived and newly-collected biological material. Additional data were obtained from the literature, and the related

references are available in the database.

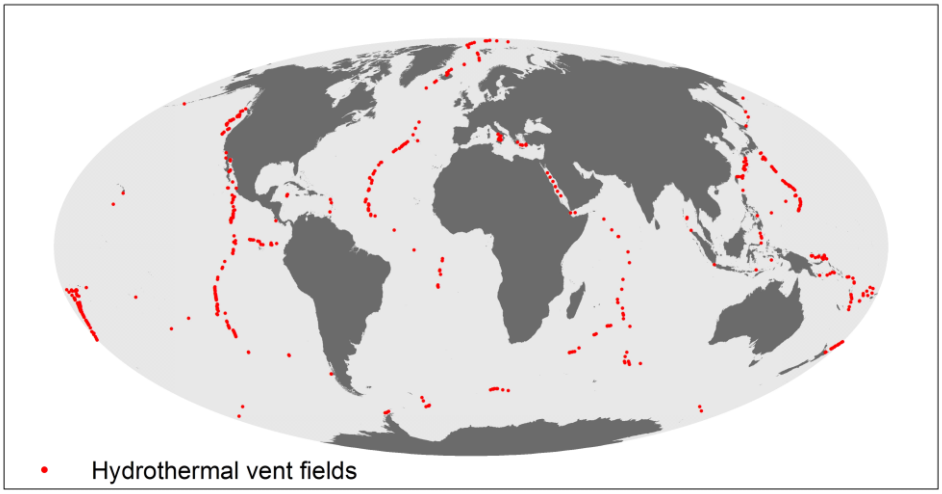
The ChEss project also developed a long-term field programme to locate potential vent and seep sites. For this, the project used deep-towed, Remotely Operated (ROV) and Autonomous Underwater (AUV) Vehicle technologies to locate, map and sample new chemosynthetic systems. Using optical, chemical and acoustic techniques, ChEss researchers were hence able to gain a better understanding of, not only biogeographical patterns, but also the processes driving these ecosystems.

| | |
|---|---|
| Version: | 3.0 |
| Data lineage: | |
| Category: | Biogeographic classification |
| Keywords: | deep sea, high seas, benthic, marine |
| Similar datasets: | IntRid-001 |
| Limitations: | ChEssBase has not been updated since mid-2010. |
| Maintenance frequency: | Data are not being updated. |
| Main access/use constraint: | See 'Other access/use constraint(s)'. |
| Other access/use constraints: | The ChEssBase Agreement can be found at: www.noc.soton.ac.uk/chess/database/db_agree.php. ChEssBase data cannot be used for any commercial purposes, and the original data source must be acknowledged in any publications or presentations based on the data held within ChEssBase. ChEssBase should also be acknowledged whenever it is used for analytical purposes within presentations and publications, in which case the citation should be sent to Dr. Maria Baker (mb11@noc.soton.ac.uk). |
| Contact organisation: | University of Southampton, National Oceanography Centre |
| Organisation type: | Custodian |
| Acronym: | NOC |
| Name: | Dr. Maria Baker |
| Position: | Research Scientist |
| City: | Southampton |
| Country: | United Kingdom |
| E-mail: | mb11@noc.soton.ac.uk |
| Web site: | www.noc.soton.ac.uk |
| Data format(s): | Tabular (.xls, .csv, or .tab), Vector (point; .shp) |
| Distribution format(s): | Tabular (.xls, .csv, or .tab) |
| Dataset size (uncompressed): | 14.8 Kb |
| Webpage and/or download: | 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/7 |

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).

**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): name of the vent field (Vent Field Name); activity status (confirmed active, inferred active, inactive); tectonic setting (e.g. Mid-ocean ridge, arc volcano); region of the globe; latitude; longitude; maximum or single reported depth; year and how discovered.

The tabular version of the database (http://vents-data.interridge.org/ventfields_list_all_CSV) contains additional fields of information, including discovery and other references. Details can be accessed at: http://vents-data.interridge.org/about_the_database#Contents.

The database can be viewed interactively at: http://vents-data.interridge.org/ventfields-geofield-map.

The InterRidge Office is based at Peking University (China).

Some attributes of all of the records in the database are also coded in RDF (Resource Description Framework) and available as Linked Open Data.

**Purpose of creation:** The database aims to provide a comprehensive list of active and inferred active (unconfirmed) submarine hydrothermal vent fields for use in academic research and education. It is anticipated that the database will become the international

| | |
|---|---|
| | standard for all known sites of submarine hydrothermal activity, which can be updated simply by submitting an electronic message to the InterRidge Office. |
| Creation methodology: | The contents of the InterRidge Vents Database were derived principally from the open literature. |
| Version: | 3.3 (October 2015) |
| Data lineage: | Detailed lineage information can be found at the following webpage: http://vents-data.interridge.org/about_the_database#Version3.<br><br>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 |
| Web site: | 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 |
| Other webpage: | http://vents-data.interridge.org/about_the_database - Version3 |

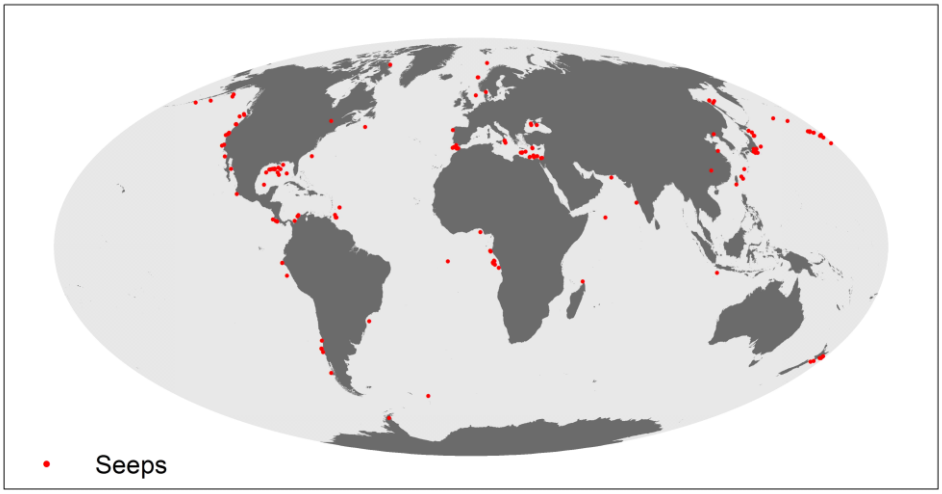
Dataset ID: IntRid-001

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)




| | |
|---|---|
| Description: | This dataset shows the global distribution of cold seeps that were studied in terms of their biology, as part of the Chemosynthetic Ecosystem Science (ChEss) project. The ChEss project, which was a field project of the Census of Marine Life (CoML) programme, lead to the creation of ChEssBase, an online information system on species distribution from deep-sea chemosynthetic ecosystems. ChEss addressed the main questions of CoML on diversity, abundance and distribution of marine species, focusing on deep-water reducing environments, such as hydrothermal vents, cold seeps, whale falls, sunken wood and areas of low oxygen that intersect with continental margins and seamounts. |
| Citation(s): | Baker MC, Ramirez-Llodra E, Perry D (2010). ChEssBase: an online information system on species distribution from deep-sea chemosynthetic ecosystems. Version 3. Chemosynthetic Ecosystem Science (ChEss) project. Southampton (UK): National Oceanography Centre. URL: www.noc.soton.ac.uk/chess |
| Temporal range: | Unknown |
| Geographical range: | Global |
| Supplementary information: | Attribute table: location (Name); latitude (lat); longitude (lon)<br><br>ChEssBase can be searched (taxonomy, site/location, habitat type, references, specimen) at www.noc.soton.ac.uk/chess/database/db_search.php. ChEssBase has been integrated with the Ocean Biogeographic Information System (OBIS; http://www.iobis.org). |
| Purpose of creation: | Only a small fraction of the global ridge system (approx. 65,000 km) and of the vast continental margin regions have been explored and their communities described. The ChEss project aimed to improve knowledge on the diversity, abundance and distribution of species from vents, seeps and other reducing habitats at a global scale, to understand the abiotic and biotic processes that shape and maintan these ecosystems and their biogeography. The field programme aimed to explain the main gaps in our knowledge of the diversity, abundance and distribution of chemosynthetic species globally. |
| Creation methodology: | A centralised geo- and bio-referenced database (ChEssBase) of vent and seep species was created, to incorporate archived and newly-collected biological material. Additional data were obtained from the literature, and the related |

references are available in the database.

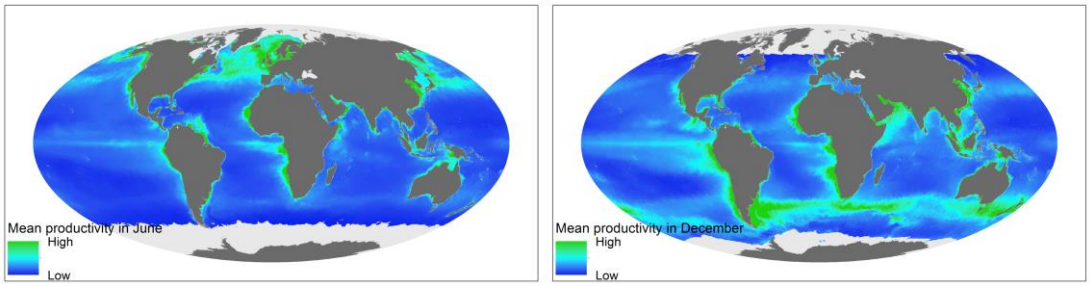
The ChEss project also developed a long-term field programme to locate potential vent and seep sites. For this, the project used deep-towed, Remotely Operated (ROV) and Autonomous Underwater (AUV) Vehicle technologies to locate, map and sample new chemosynthetic systems. Using optical, chemical and acoustic techniques, ChEss researchers were hence able to gain a better understanding of, not only biogeographical patterns, but also the processes driving these ecosystems.

| | |
|---|---|
| Version: | 3.0 |
| Data lineage: | |
| Category: | Biogeographic classification |
| Keywords: | deep sea, high seas, benthic, marine, seep, habitat, ChEssBase |
| Similar datasets: | None |
| Limitations: | ChEssBase has not been updated since mid-2010. |
| Maintenance frequency: | Data are not being updated. |
| Main access/use constraint: | See 'Other access/use constraint(s)'. |
| Other access/use constraints: | The ChEssBase Agreement can be found at: www.noc.soton.ac.uk/chess/database/db_agree.php. ChEssBase data cannot be used for any commercial purposes, and the original data source must be acknowledged in any publications or presentations based on the data held within ChEssBase. ChEssBase should also be acknowledged whenever it is used for analytical purposes within presentations and publications, in which case the citation should be sent to Dr. Maria Baker (mb11@noc.soton.ac.uk). |
| Contact organisation: | University of Southampton, National Oceanography Centre |
| Organisation type: | Custodian |
| Acronym: | NOC |
| Name: | Dr. Maria Baker |
| Position: | Research Scientist |
| City: | Southampton |
| Country: | United Kingdom |
| E-mail: | mb11@noc.soton.ac.uk |
| Web site: | www.noc.soton.ac.uk |
| Data format(s): | Tabular (.xls, .csv, or .tab), Vector (point; .shp) |
| Distribution format(s): | Tabular (.xls, .csv, or .tab) |
| Dataset size (uncompressed): | 202 Kb |
| Webpage and/or download: | http://www.noc.soton.ac.uk/chess/science/sci_project.php |
| Other webpage: | http://www.coml.org |
| 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 | Reference system: | WGS 1984 |
| West bounding: | -164.1 | East bounding: | 179.0 |
| South bounding: | -65.4 | North bounding: | 72.0 |
| Metadata standard: | UNEP-WCMC Specific | Date of metadata: | 01/07/2015 |

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

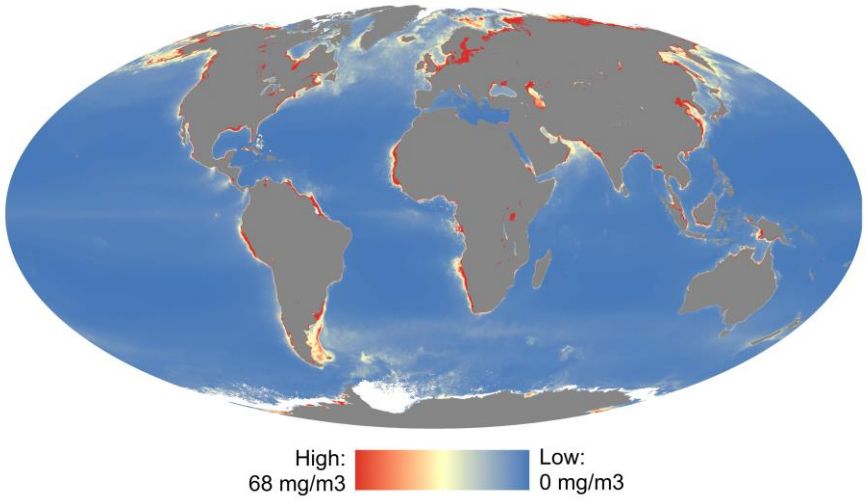



| | |
|---|---|
| Description: | This dataset shows mean global sea surface Net Primary Productivity (NPP) values for the months of June and December, averaged for the period from 2003 to 2007. They were created using data from Oregon State University's Ocean Productivity database (www.science.oregonstate.edu/ocean.productivity). |
| 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.<br><br>URLs for accessing the dataset are given for its June subset. For the December subset, please use the following URLs:<br>- Webpage and/or download: data.unep-wcmc.org/datasets/19;<br>- Other webpage: http://www.arcgis.com/home/item.html?id=ae5c9b0a86b0412d9bed8b93ce414a70;<br>- Web map service: http://downloads.wdpa.org/ArcGIS/rest/services/ocean_data_viewer/ssp_dec/MapServer |
| Purpose of creation: | This dataset was created as part of a MSc thesis by Kershaw et al. (2008). |
| Creation methodology: | Net primary production was calculated based on the standard VGPM (Vertically Generalized Production Model) algorithm, and using remotely-sensed images (Modis, SeaWiFS). See www.science.oregonstate.edu/ocean.productivity for additional information on the models used, access to model code and ancillary datasets, as well as comparisons of productivity estimates for alternative datasets. A five year average was then calculated, for the period from 2003 to 2007; see Kershaw et al. (2008) for full details. |

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 and www.unep-wcmc.org/policies. For commercial use, please contact 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 |
| Web site: | www.unep-wcmc.org |
| Data format(s): | Raster (.tif, geotiff), Raster (ESRI Grid) |
| Distribution format(s): | Raster (.tif, geotiff) |
| Dataset size (uncompressed): | 3.9 Mb |
| Webpage and/or download: | http://data.unep-wcmc.org/datasets/18 |
| 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 |
| 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/m3).

The 2009-2013 composite dataset illustrates spatial variations in chlorophyll-a concentration, such as that existing between highly productive upwelling regions and nutrient poor tropical waters. Data for individual years (2009 to 2013) are also provided in the data pack.

**Purpose of creation:** The concentration of chlorophyll pigments (i.e. the photosynthetic pigments of phytoplankton) is often considered as an proxy for biological productivity as productive surface waters attract marine organisms that benefit from phytoplankton blooms and, in turn, attracts larger marine predators. Any changes in the location, duration and extent of highly productive surface waters is therefore expected to cause matching changes in the distribution, abundance and migration patterns of marine mammals and large fish.

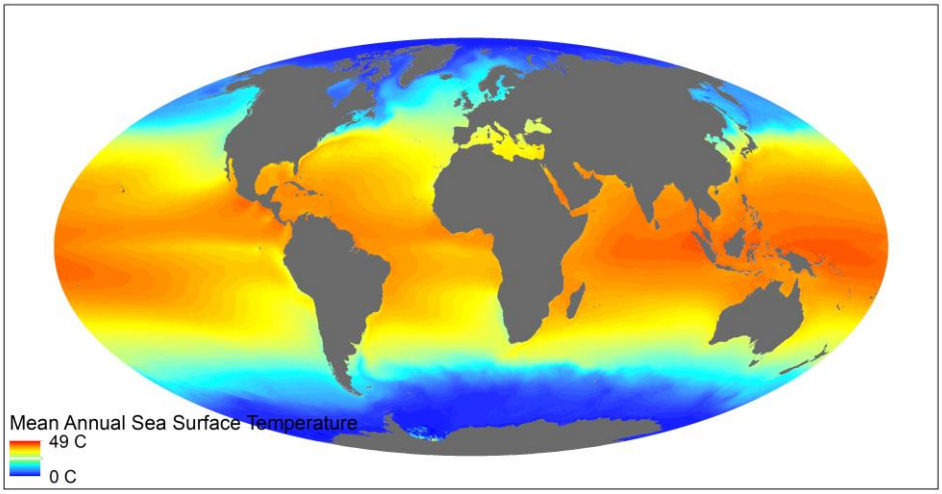
| | |
|---|---|
| Creation methodology: | Information on the origins and calculations of the data can be accessed at Ocean Color Web (http://oceancolor.gsfc.nasa.gov). UNEP-WCMC obtained Aqua MODIS mean sea surface chlorophyll-a data (annual composite at 9 km resolution) in HDF format from the Ocean Color website (http://oceancolor.gsfc.nasa.gov/cgi/l3). The HDF data were converted to ArcGIS rasters using Marine Geospatial Ecology Tools (MGET), and units of chlorophyll-a concentration were converted into milligrams per cubic metre (mg/m3). The composite layer for years 2009 through 2013 was then created using the mosaic function in ArcGIS, to calculate mean chlorophyll-a concentration across all layers. |
| Version: | 1.0 (April 2015) |
| Data lineage: | |
| Category: | Environment descriptor |
| Keywords: | marine, coastal, high seas, sea surface productivity, primary productivity, chlorophyll, phytoplankton, NASA, Ocean Color, Aqua MODIS |
| Similar datasets: | WCMC-020-021 |
| Limitations: | This dataset is subject to algorithm uncertainties and assumptions. It is only representative of the period 2009 to 2013, and not of current sea surface chlorophyll-a concentrations. |
| Maintenance frequency: | Data are not being updated. |
| Main access/use constraint: | Creative Commons Attribution 3.0 Unported (CC BY 3.0). See http://creativecommons.org/licenses/by/3.0/ for details. Free to (1) copy/distribute/transmit the work, (2) adapt the work, and (3) make commercial use of the work. |
| Other access/use constraints: | None |
| Contact organisation: | 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: | www.unep-wcmc.org |
| Data format(s): | Raster (ESRI Grid) |
| Distribution format(s): | Raster (ESRI Grid) |
| Dataset size (uncompressed): | 472 Mb |
| Webpage and/or download: | http://data.unep-wcmc.org/datasets/37 |
| Other webpage: | http://oceancolor.gsfc.nasa.gov/cgi/l3 |
| Web map service: | http://ec2-54-204-216-109.compute-1.amazonaws.com:6080/arcgis/rest/services/marine/WCMC_034_MeanSeaSurface |

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 |

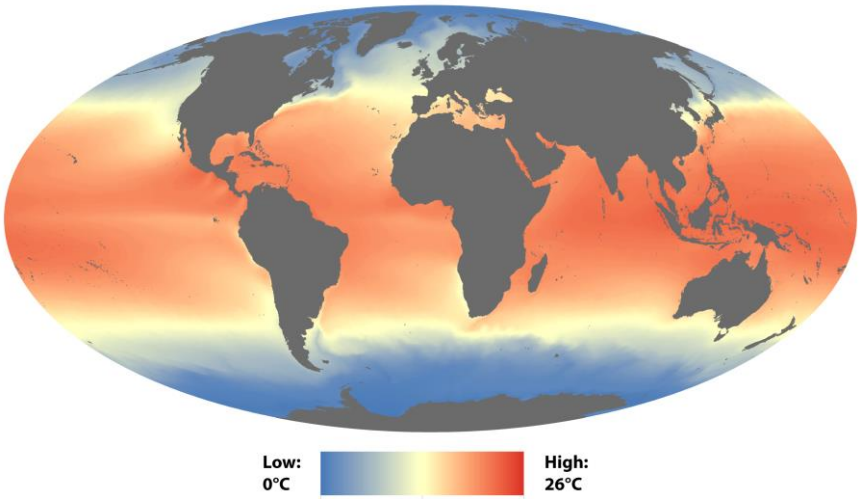
# Mean Annual Sea Surface Temperature 2003-2007 (2008)




| | |
|---|---|
| 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).<br><br>Additional information on the origins and calculations of the data, including monthly sea surface temperature data, can be accessed at Ocean Color Web (http://oceancolor.gsfc.nasa.gov). |
| Purpose of creation: | This dataset was created as part of a MSc thesis by Kershaw et al. (2008). |
| Creation methodology: | Annual sea surface temperature was calculated from remotely-sensed images (MODIS sensor). See Kershaw et al. (2008) for full details. |
| Version: | -- |
| Data lineage: | |
| Category: | Environment descriptor |
| Keywords: | marine, coastal, high seas, SST, remote sensing, environment descriptor |
| Similar datasets: | WCMC-035 |
| Limitations: | This dataset is subject to algorithm uncertainties and assumptions. It is only representative of the period 2003 to 2007, and not of current sea surface temperature estimates. |

| | | | |
|---|---|---|---|
| Maintenance frequency: | Data are not being updated. | | |
| Main access/use constraint: | UNEP-WCMC General Data License (excluding WDPA). See www.unep-wcmc.org/policies/general-data-license-excluding-wdpa#data_policy and www.unep-wcmc.org/policies. For commercial use, please contact business-support@unep-wcmc.org. | | |
| Other access/use constraints: | None | | |
| Contact organisation: | 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: | www.unep-wcmc.org | | |
| Data format(s): | Raster (.tif, geotiff), Raster (ESRI Grid) | | |
| Distribution format(s): | Raster (.tif, geotiff) | Dataset size (uncompressed): | 59.2 Mb |
| Webpage and/or download: | http://data.unep-wcmc.org/datasets/20 | | |
| Other webpage: | http://www.arcgis.com/home/item.html?id=116f0d036f904c0281bce4b97c726362 | | |
| Web map service: | http://downloads.wdpa.org/ArcGIS/rest/services/ocean_data_viewer/sea_surface_temp_yr_all/MapServer | | |
| Factsheet: | http://wcmc.io/environment-descriptors | | |
| Resolution, scale: | 0.05 dd | Reference system: | WGS 1984 |
| West bounding: | -180.0 | East bounding: | 180.0 |
| South bounding: | -78.6 | North bounding: | 89.8 |
| Metadata standard: | UNEP-WCMC Specific | Date of metadata: | 29/05/2015 |

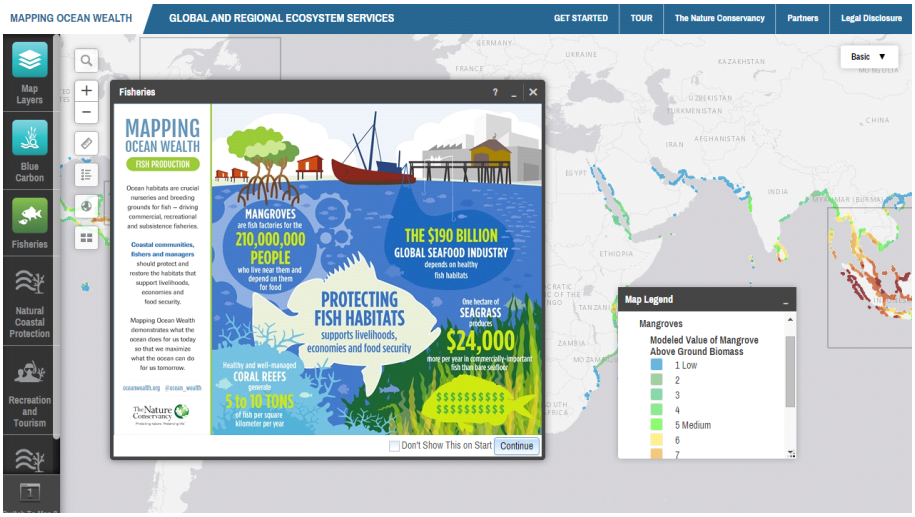
# Mean Annual Sea Surface Temperature 2009-2013 (2015)




| | |
|---|---|
| Description: | This dataset shows the global distribution of mean annual sea surface temperature, averaged for the period from 2009 to 2013. It was created using remotely-sensed images from NASA's (National Aeronautics and Space Administration) Ocean Color database (http://oceancolor.gsfc.nasa.gov). |
| Citation(s): | 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: http://oceancolor.gsfc.nasa.gov/cgi/l3. Cambridge (UK): UNEP World Conservation Monitoring Centre. URL: http://data.unep-wcmc.org/datasets/36. |
| Temporal range: | 2009-2013 |
| Geographical range: | Global |
| Supplementary information: | Sea surface temperature is given in degrees Celsius. |
| Purpose of creation: | Sea surface temperature is a climatic descriptor and it is controlled by other climatic variables such as air temperature, and ocean and wind currents. Sea surface temperature is a key factor affecting biodiversity patterns as the majority of organisms respond to the temperature of their immediate environment. |
| Creation methodology: | Information on the origins and calculations of the MODIS Aqua data can be accessed at Ocean Color Web (http://oceancolor.gsfc.nasa.gov/cms/data/aqua). UNEP-WCMC obtained Aqua MODIS daily sea surface temperature data in HDF format from the Ocean Color website (http://oceancolor.gsfc.nasa.gov/cgi/l3). The HDF data were converted to ArcGIS rasters using Marine Geospatial Ecology Tools (MGET), and units were converted into degrees Celsius using the raster calculator tool (ESRI ArcMap). The composite layer for years 2009 through 2013 was then created using the mosaic function in ArcMap, to calculate mean sea surface temperature across all layers. |
| Version: | 1.0 (May 2015) |
| Data lineage: | |
| Category: | Environment descriptor |

| | |
|---|---|
| Keywords: | marine, coastal, high seas, sea surface temperature, SST |
| Similar datasets: | WCMC-022 |
| Limitations: | This dataset is subject to algorithm uncertainties and assumptions. It is only representative of the period 2009 to 2013, and not of current sea surface temperature estimates or seasonal variations. |
| Maintenance frequency: | Data are not being updated. |
| Main access/use constraint: | Creative Commons Attribution 3.0 Unported (CC BY 3.0). See http://creativecommons.org/licenses/by/3.0/ for details. Free to (1) copy/distribute/transmit the work, (2) adapt the work, and (3) make commercial use of the work. |
| Other access/use constraints: | None |
| Contact organisation: | 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: | www.unep-wcmc.org |
| Data format(s): | Layer package (ESRI, .lpk), Raster (ESRI Grid) |
| Distribution format(s): | Layer package (ESRI, .lpk), Raster (ESRI Grid) |
| Dataset size (uncompressed): | 107 Mb |
| Webpage and/or download: | http://data.unep-wcmc.org/datasets/36 |
| Other webpage: | http://oceancolor.gsfc.nasa.gov/cgi/l3 |
| Web map service: | http://ec2-54-204-216-109.compute-1.amazonaws.com:6080/arcgis/rest/services/marine/WCMC_035_MeanSeaSurfaceTemperature2015/MapServer |
| Factsheet: | http://wcmc.io/environment-descriptors |
| Resolution, scale: | 0.08333 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: | 22/06/2015 |

# Mapping Ocean Wealth




**Description:** Informed by science, communications and policy work, Mapping Ocean Wealth visualizes in quantitative terms all that the ocean does for us today, so that we make smarter investments and decisions for the ocean of tomorrow.

**Citation(s):** The Nature Conservancy (2015) Mapping Ocean Wealth. URL: http://oceanwealth.org/



**Temporal range:** --

**Geographical range:** Global

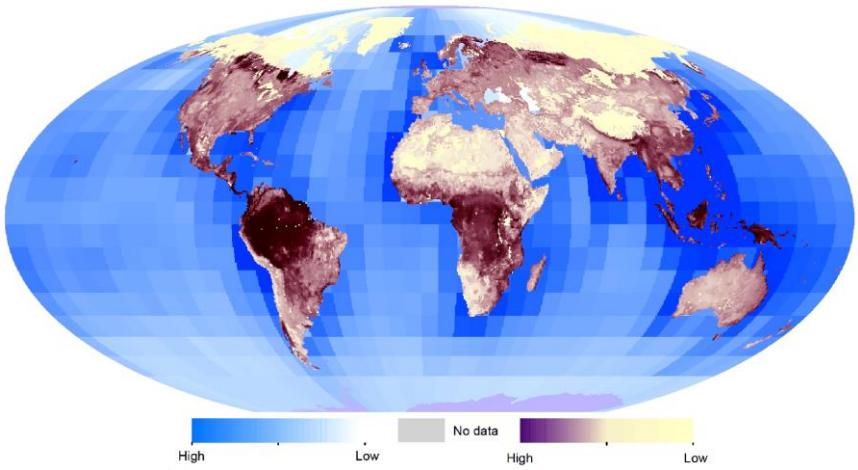
**Supplementary information:** --

**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.<br><br>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.<br><br>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.<br><br>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: | -- | | |
| 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: | | East bounding: | |
| South bounding: | | North bounding: | |
| Metadata standard: | UNEP-WCMC Specific | Date of metadata: | 20/08/2015 |

# A Global Map of Natural Capital (2014)




| | |
|---|---|
| Description: | Natural capital comprises both ecosystem assets (such as freshwater) and natural resources (such as fossil fuel deposits). This dataset shows the global patterns of ecosystem assets, in the marine, terrestrial and freshwater realms. |
| Citation(s): | 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: http://www.unep-wcmc.org/resources-and-data/towards-a-global-map-of-natural-capital |
| Temporal range: | 2014 |
| Geographical range: | Global |
| Supplementary information: | The composite map of ecosystem assets is produced by combining a number of existing global spatial datasets to produce a map for both terrestrial and marine realms. The individual datasets represent fresh water resources, soil quality for plant growth, terrestrial carbon, terrestrial and marine biodiversity, and marine fish stocks. |
| Purpose of creation: | This layer presents the first attempt to give an overview of the global distribution of ecosystem assets. |
| Creation methodology: | The System of Environmental-Economic Accounting's Experimental Ecosystem Accounting approach provided a conceptual starting point for this global map of key ecosystem assets. A disaggregated approach was adopted to the mapping of ecosystem assets, in which key assets were selected and individually mapped. Values in each individual ecosystem asset map were normalised (rescaled linearly to values between 0 and 1). The layers were then combined into a composite global map, giving equal weight to each underlying layer.<br><br>See Dickson et al. (2014) for further details about the methodology. |
| Version: | 1.0 (2014) |
| Data lineage: | |
| Category: | Ecosystem services and natural capital |

Dataset ID: WCMC-032

| | |
|---|---|
| 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. |
| Contact organisation: | UNEP World Conservation Monitoring Centre |
| Organisation type: | Owner |
| Acronym: | UNEP-WCMC |
| Name: | Prof Jon Hutton |
| Position: | Director |
| City: | Cambridge |
| Country: | United Kingdom |
| E-mail: | jon.hutton@unep-wcmc.org |
| Web site: | www.unep-wcmc.org |
| Data format(s): | Raster (.tif, geotiff) |
| Distribution format(s): | Raster (.tif, geotiff) |
| Dataset size (uncompressed): | 167 Mb |
| Webpage and/or download: | http://www.unep-wcmc.org/resources-and-data/towards-a-global-map-of-natural-capital |
| Other webpage: | |
| Web map service: | |
| Factsheet: | http://www.biodiversitya-z.org/content/natural-capital |
| Resolution, scale: | 0.017 dd (10x10 arc-min) |
| Reference system: | World Robinson |
| West bounding: | -180.0 |
| East bounding: | 180.0 |
| South bounding: | -90.0 |
| North bounding: | 90.0 |
| Metadata standard: | UNEP-WCMC Specific |
| Date of metadata: | 23/06/2015 |

# Marine Ecosystem Services Partnership


**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:** --

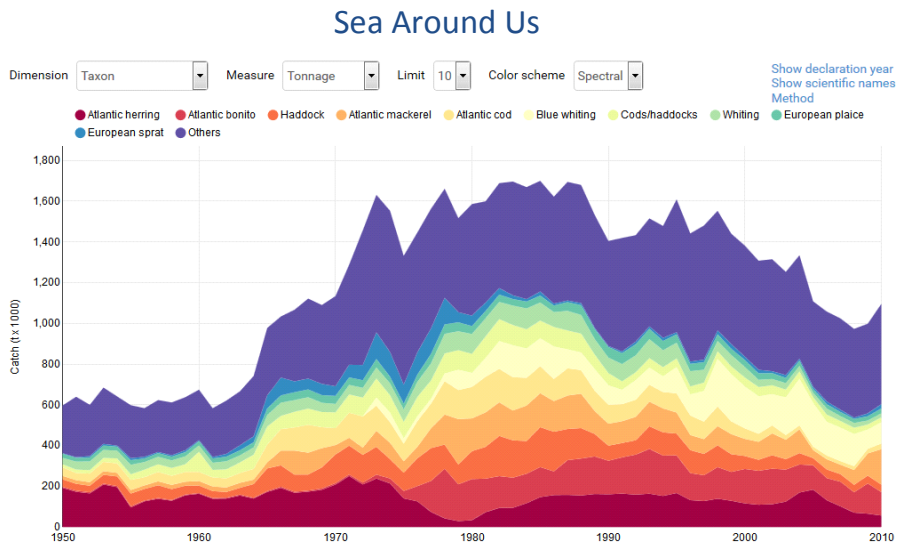
**Purpose of creation:** Responding to the growing library of economic valuation data, the Partnership strives to provide up-to-date and easily accessible data for the use of policy makers, environmental managers, researchers, and marine ecosystem stakeholders. Not intended to replace other databases, 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).

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@marineecosystemservices.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.seaaroundus.org) that provides the first comprehensive coverage of both reported and unreported fish caught by every country in the world.

Citation(s): The Sea Around Us website presents scientific data, and this has the implication – among others – that the use of this website's contents are free as long as due credit is given. This may be done at different levels, for which we suggest different forms of citations:

- When referring to various datasets downloaded from the website, and/or its concept or design, or to several datasets extracted from its underlying databases, cite its architects, i.e., Pauly D and Zeller D (eds.) (2015) Sea Around Us Concepts, Design and Data (seaaroundus.org).

- When referring to a set of values extracted for a given country, EEZ or territory, cite the most recent catch reconstruction report or paper (available on the website) for that country, EEZ or territory. Thus, for examples, for the Mexican Pacific EEZ, the citation should be "Cisneros-Montemayor AM, Cisneros-Mata MA, Harper S and Pauly D (2015) Unreported marine fisheries catch in Mexico, 1950-2010. Fisheries Centre Working Paper #2015-22, University of British Columbia, Vancouver. 9 p.", which is accessible on the EEZ page for Mexico (Pacific) on seaaroundus.org. To help us track the use of Sea Around Us data, we would appreciate you also citing Pauly and Zeller (2015) as the source of the information in an appropriate part of your text.

- When using data from our website that are not part of a typical catch reconstruction (e.g., catches by LME or other spatial entity, subsidies given to fisheries, the estuaries in a given country, or the surface area of a given EEZ), cite both the website and the study that generated the underlying database, i.e., Sumaila et al. (2010) for subsides, Alder (2003) for estuaries and Claus et al. (2014) for EEZ delineations, respectively. Many of these can be derived from the 'methods' texts associated with data pages on seaaroundus.org.

Temporal range: 1950 - 2010

Geographical range: Global

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.seaaroundus.org/catch-reconstruction-and-allocation-methods/. Other methodologies can also be found in the Sea Around Us Methods Index (http://www.seaaroundus.org/sea-around-us-methods-index/). |
| 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.seaaroundus.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.seaaroundus.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.seaaroundus.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

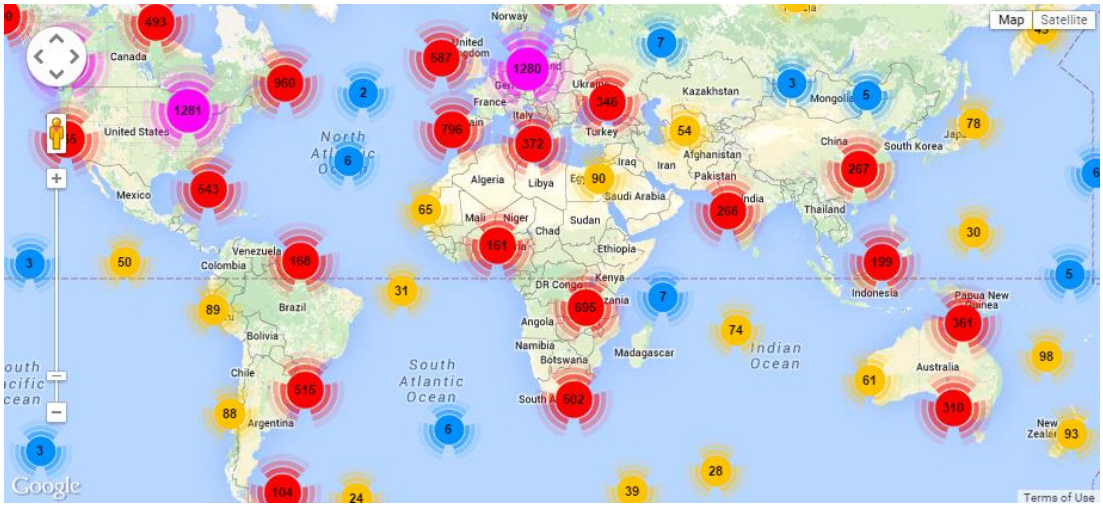
Other webpage:

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.

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/

**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 planets variety of life, and contributing to human well-being, and poverty eradication."

The 2020 targets focus on maintaining ecosystem services in which biodiversity plays an important role. The Living Planet Index is an applicable indicator for many of the Aichi Biodiversity targets under Strategic Goals A-D which address the causes, pressures, state and benefits of biodiversity.

For more resources, please see WWF (2014) and visit: http://www.livingplanetindex.org/publications.

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

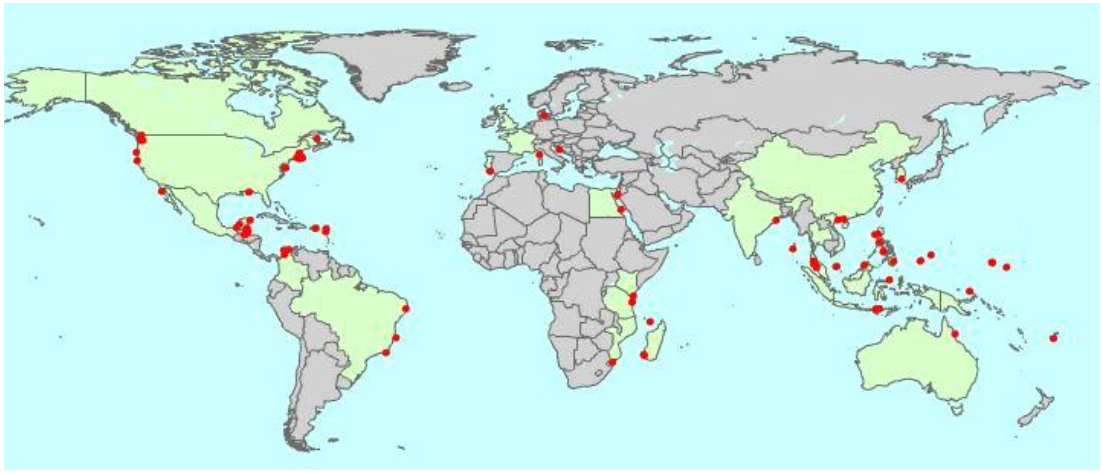
| | |
|---|---|
| Version: | 2014 |
| Data lineage: | -- |
| Category: | Ecological status and impact |
| Keywords: | Living Planet Index, LPI, WWF, ZSL, indicators, biodiversity, population trends |
| Similar datasets: | None |
| Limitations: | ZSL and WWF endeavour to maintain accurate and up-to-date 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). |
| Other access/use constraints: | The full disclaimer can be obtained from the Data Use Policy (http://www.livingplanetindex.org/documents/data_agreement.pdf), while documents outlining "Data Standards" and "LPI data requirements for public users" can be obtained from the data portal (http://www.livingplanetindex.org/supporting_documents). |
| Contact organisation: | Indicators and Assessments Unit, Zoological Society of London |

| | | | |
|---|---|---|---|
| Organisation type: | Custodian | Acronym: | ZSL |
| Name: | -- | Position: | -- |
| City: | London | Country: | United Kingdom |
| E-mail: | admin@livingplanetindex.org | | |
| Web site: | www.livingplanetindex.org | | |
| Data format(s): | Online database, Tabular (.xls, .csv, or .tab) | | |
| Distribution format(s): | Online database, Tabular (.xls, .csv, or .tab) | Dataset size (uncompressed): | -- |

| | |
|---|---|
| Webpage and/or download: | http://www.livingplanetindex.org/data_portal |
| Other webpage: | |
| Web map service: | |
| Factsheet: | http://wwf.panda.org/about_our_earth/all_publications/living_planet_report/ |

| | | | |
|---|---|---|---|
| Resolution, scale: | -- | 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 |

# 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<br><br>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 |
| 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 |

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 or 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

Web site: www.SeagrassNet.org

Data format(s): MySQL

Distribution format(s):

Dataset size (uncompressed):

Webpage and/or download: http://www.seagrassnet.org/about-seagrassnet

Other webpage:

Web map service:

Factsheet: http://wcmc.io/seagrass

Resolution, scale: Not applicable

Reference system: WGS 1984

West bounding:

East bounding:

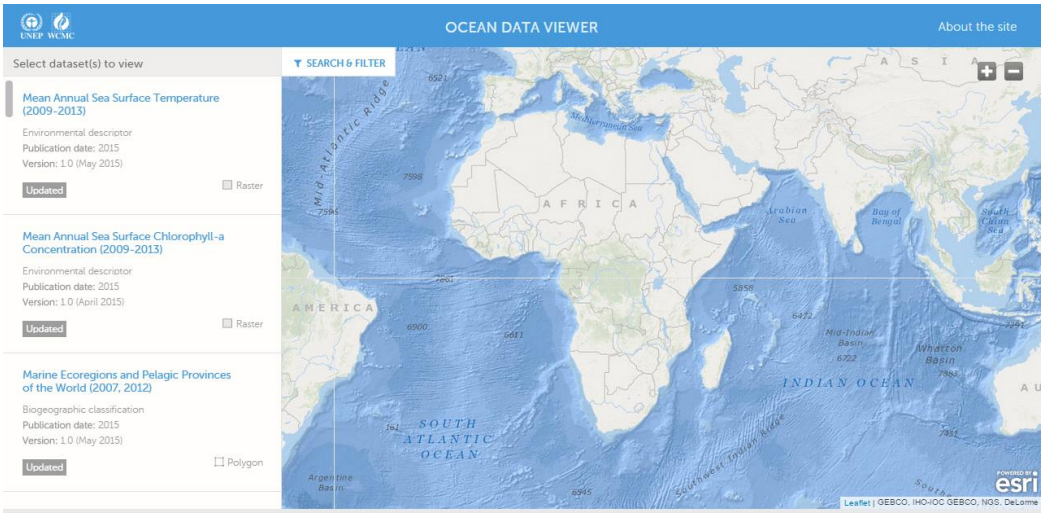
South bounding:

North bounding:

Metadata standard: UNEP-WCMC Specific

Date of metadata: 29/05/2015

# 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 (2015). 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 CBD 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 meta-data 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 data sets 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: 2015

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). 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.

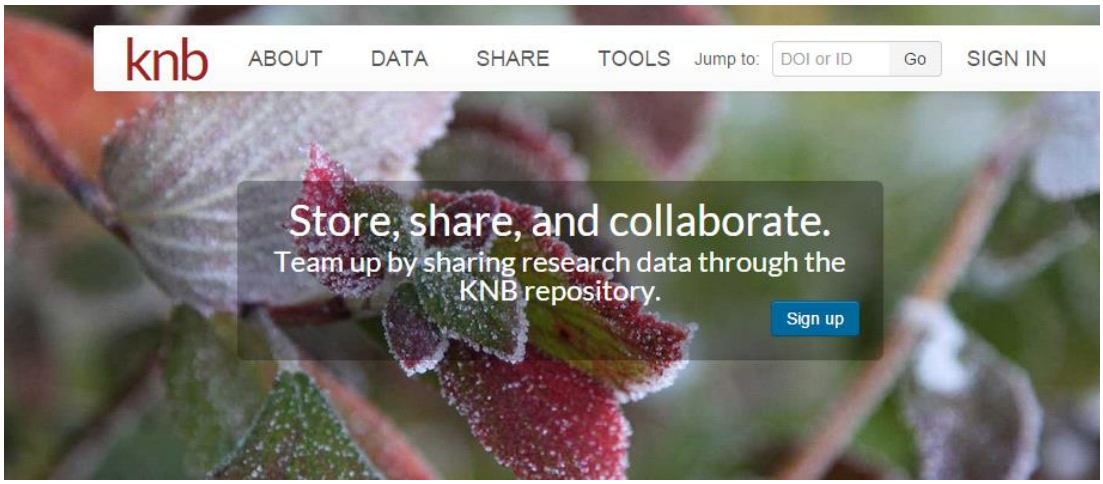
Main access/use constraint: UNEP-WCMC General Data License (excluding WDPA). See www.unep-wcmc.org/policies/general-data-license-excluding-wdpa#data_policy and www.unep-wcmc.org/policies. For commercial use, please contact business-support@unep-wcmc.org.

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 | | |
| Web site: | www.unep-wcmc.org | | |
| Data format(s): | Raster (ESRI Grid), Vector (point; .shp), Vector (polygon; .shp), Vector (polyline; .shp), WMS | | |
| Distribution format(s): | Raster (ESRI Grid), Vector (point; .shp), Vector (polygon; .shp), Vector (polyline; .shp), WMS | 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: | 13/08/2015 |

## 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:<br>- 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.<br>- rDataONE, an R package for accessing the KNB and other DataONE repositories.<br>- Metacat, a flexible metadata database that helps scientists find, understand and effectively use data sets they manage or that have been created by others.<br>- 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.<br><br>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 |

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| | any publication. And as a DataONE Member Node, the KNB will securely replicate your data to other servers, maintaining all of the access controls you set, public or private. This means that your data are secure in the event that the KNB servers themselves experience any catastrophic failure. |
| Creation methodology: | As part of the KNB effort, data management software is developed in a free and open source manner, so other groups can build upon the tools. The KNB is powered by the Metacat data management system, and is optimized for handling data sets described using the Ecological Metadata Language, but can store any XML-based metadata document. |
| Version: | -- |
| Data lineage: | -- |
| Category: | Biodiversity-related data portal |
| Keywords: | database, biodiversity, data repository, environmental, DataONE, NCEAS, KNB |
| Similar datasets: | -- |
| Limitations: | Please refer to the metadata that accompany each dataset within the repository. |
| Maintenance frequency: | Data are updated in intervals that are uneven in duration. |
| Main access/use constraint: | Creative Commons Attribution 3.0 Unported (CC BY 3.0). See http://creativecommons.org/licenses/by/3.0/ for details. Free to (1) copy/distribute/transmit the work, (2) adapt the work, and (3) make commercial use of the work. |
| Other access/use constraints: | -- |
| Contact organisation: | National Centre for Ecological Analysis and Synthesis, University of California |
| Organisation type: | Custodian |
| Acronym: | NCEAS |
| Name: | -- |
| Position: | Help Desk |
| City: | Santa Barbara |
| Country: | California (USA) |
| E-mail: | knb-help@nceas.ucsb.edu |
| Web site: | https://www.nceas.ucsb.edu/ |
| Data format(s): | Online database |
| Distribution format(s): | Online database |
| Dataset size (uncompressed): | Various |
| Webpage and/or download: | https://knb.ecoinformatics.org |
| Other webpage: | |
| Web map service: | |

Dataset ID: NCEAS-004

Factsheet:

| | | | |
|---|---|---|---|
| Resolution, scale: | -- | Reference system: | Not applicable |
| West bounding: | | East bounding: | |
| South bounding: | | North bounding: | |
| Metadata standard: | UNEP-WCMC Specific | Date of metadata: | 17/08/2015 |

# PANGAEA

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|---|---|
| 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.<br><br>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.<br><br>If it is required to refer to Pangaea as publisher or library, the following citation could be used:<br>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.<br><br>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).<br><br>Archiving follows the Recommendations of the Commission on Professional Self Regulation in Science (http://www.dfg.de/download/pdf/dfg_im_profil/reden_stellungnahmen/downloa |

d/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 |
| Web site: | 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: | -- | Reference system: | |
| West bounding: | | East bounding: | |
| South bounding: | | North bounding: | |
| Metadata standard: | UNEP-WCMC Specific | Date of metadata: | 17/08/2015 |


| | |
|---|---|
| Description: | FishBase (www.fishbase.org) is a global species database of fish species (specifically finfish). It is the largest and most extensively accessed online database on adult finfish on the web. |
| 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.<br><br>Cite FishBase itself as:<br>Froese R and Pauly D (eds.) (2015) FishBase. World Wide Web electronic publication. 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 |

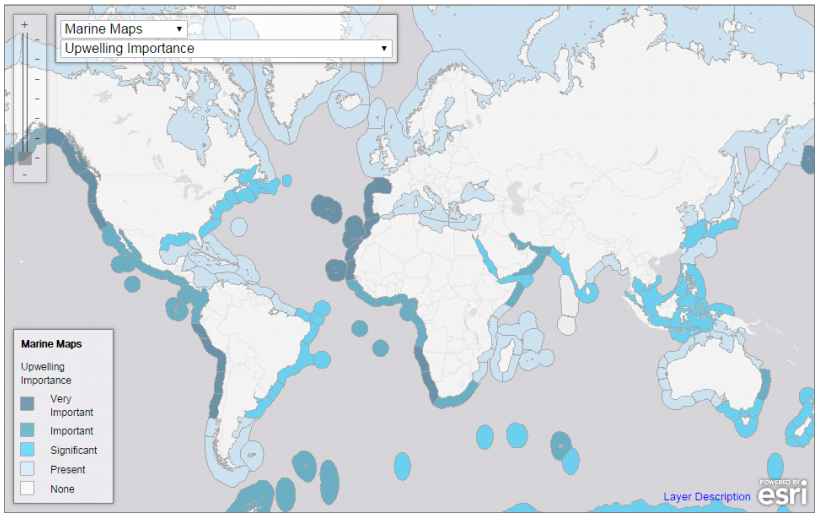
| | |
|---|---|
| Limitations: | FishBase present information on fishes as correctly as possible. However, FishBase can not exclude errors, and neither FishBase nor its partners can be held responsible for any damage that may arise from these. |
| Maintenance frequency: | Data are updated a few times 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 | | |
| 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



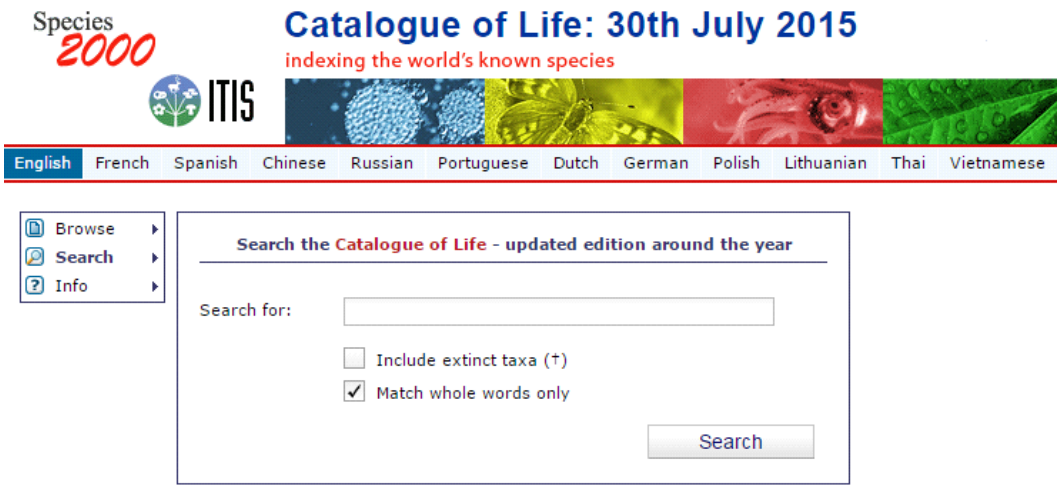

| | |
|---|---|
| Description: | The Atlas of Global Conservation represents the result of an unprecedented effort by Nature Conservancy scientists, in collaboration with governments, scientists and conservation organisations around the world, offering over 80 global maps describing the state of terrestrial, 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). |
| 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 |

Catalogue Of Life




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. 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. 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.<br><br>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.<br><br>The Species 2000 & ITIS (Taxonomic Information System) Catalogue of Life editorial board cannot guarantee the accuracy or completeness of the information in this edition. Be aware that the Catalogue of Life is still incomplete and undoubtedly contains errors. Neither Species 2000 & ITIS nor any contributing database can be made liable for any direct or indirect damage arising out of the use of Catalogue of Life. |
| Maintenance frequency: | Data are updated on a monthly basis. |
| Main access/use constraint: | For details regarding requirements for use of the Catalog of Life, please visit: http://www.catalogueoflife.org/col/info/copyright. |
| Other access/use constraints: | -- |
| Contact organisation: | Species 2000 Secretariat, Naturalis Biodiversity Center |
| Organisation type: | Custodian |
| Acronym: | |
| Name: | -- |
| Position: | Help Desk |
| City: | Leiden |
| Country: | Netherlands |
| E-mail: | support@sp2000.org |
| Web site: | www.sp2000.org |
| Data format(s): | Online database |

Dataset ID: CoL-001

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

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

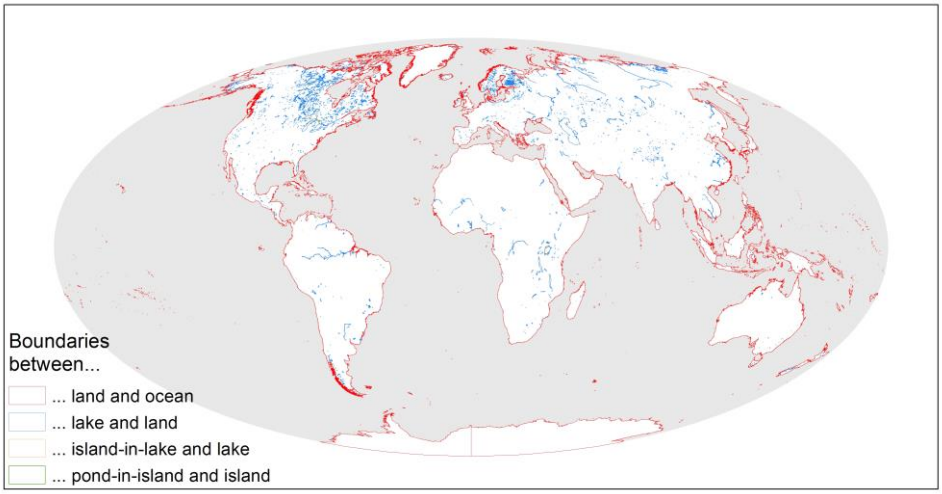
Other webpage:

Web map service:

Factsheet:

| | | | |
|---|---|---|---|
| Resolution, scale: | Not applicable | Reference system: | Not applicable |
| West bounding: | | East bounding: | |
| South bounding: | | North bounding: | |
| Metadata standard: | UNEP-WCMC Specific | Date of metadata: | 13/08/2015 |

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




**Description:** The Global Self-consistent, Hierarchical, High-resolution Geography Database (GSHHGD) is a high-resolution geography dataset, amalgamated from two databases in the public domain: World Vector Shorelines (WVS; http://shoreline.noaa.gov/data/datasheets/wvs.html) and CIA World Data Bank II (WDBII; http://www.evl.uic.edu/pape/data/WDB/). The former is the basis for shorelines while the latter is the basis for lakes, although there are instances where differences in coastline representations necessitated adding WDBII islands to GSHHG. The WDBII source also provides all political borders and rivers.

**Citation(s):** Wessel P, Smith WHF (2015). Data layers of the Global, Self-consistent, Hierarchical, High-resolution Shoreline Geography (GSHHG) database (version 2.3.4). The methodology used to create the shoreline subset is described in Wessel and Smith (1996). Manoa (Hawaii, USA): University of Hawaii (SOEST). URL: www.ngdc.noaa.gov/mgg/shorelines/data/gshhg/latest/

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.

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|---|---|
| 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.<br>Gorny AJ (1977). World Data Bank II General User GuideRep. PB 271869, 10 pp., Central Intelligence Agency, Whashington DC<br>Soluri EA, Woodson VA (1990). World Vector Shoreline, Int. Hydrograph. Rev., LXVII(1), 27–35<br><br>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/.<br><br>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.<br><br>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.<br><br>In the vector (polygon) format, a handful of polygons straddling the 'dateline' (chief among them the Antarctic polar cap polygon) have been split into east and west components. In the native binary format, no polygon dateline-splitting has occurred. The creators discourage anyone from using the netCDF version for custom programming applications [due to complexity and lack of documentation, mostly]. |
| Maintenance frequency: | Data are updated a few times per year. |
| Main access/use constraint: | GNU Lesser General Public License (as of version 2.2.2). See www.gnu.org/licenses/lgpl.html. For commercial use, see www.gnu.org/licenses/gpl-faq.html#GPLCommercially. |
| Other access/use constraints: | Please notify Dr. Paul Wessel (pwessel@hawaii.edu) and Dr. Walter H.F. Smith (Walter.HF.Smith@noaa.gov) if any changes are made to the GSHHG data set for |

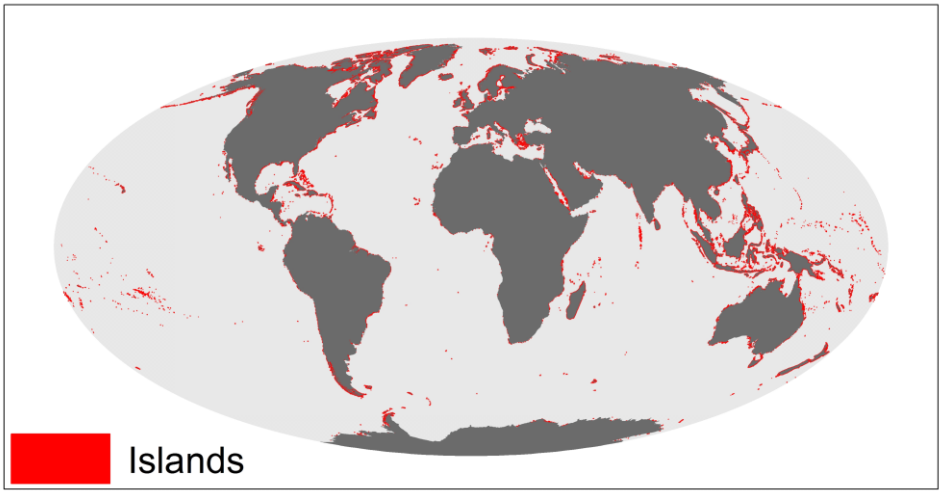
commercial use.

| | | | |
|---|---|---|---|
| Contact organisation: | School of Ocean and Earth Science and Technology, University of Hawaii | | |
| Organisation type: | Owner | Acronym: | SOEST |
| Name: | Dr. Paul Wessel | Position: | University Lecturer |
| City: | Manoa | Country: | Hawaii, USA |
| E-mail: | pwessel@hawaii.edu | | |
| Web site: | www.soest.hawaii.edu | | |
| Data format(s): | Network Common Data Form (NetCDF3 or 4), Vector (polygon; .shp) | | |
| Distribution format(s): | Network Common Data Form (NetCDF3 or 4), Vector (polygon; .shp) | Dataset size (uncompressed): | 424 Mb (vector) |
| Webpage and/or download: | http://www.soest.hawaii.edu/pwessel/gshhg | | |
| Other webpage: | http://www.ngdc.noaa.gov/mgg/shorelines/gshhs.html | | |
| Web map service: | | | |

Factsheet:

| | | | |
|---|---|---|---|
| Resolution, scale: | Not applicable | Reference system: | WGS 1984 |
| West bounding: | -180.0 | East bounding: | 180.0 |
| South bounding: | -90.0 | North bounding: | 83.6 |
| Metadata standard: | UNEP-WCMC Specific | Date of metadata: | 29/06/2015 |

# 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 developped in collaboration with the Institut de recherche pour le développement(IRD) 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.<br><br>Other cited reference(s):<br>Depraetere C (2007). IBPoW Database. A technical note on a global dataset of islands. Global Islands Network. 58 pp.<br><br>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.<br><br>Fields of the attribute table: see file called "WCMC-005-GID1-2010-IBPoW-AttributeTableFields.pdf".<br><br>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.<br><br>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 and www.unep-wcmc.org/policies. For commercial use, please contact business-support@unep-wcmc.org. |
| Other access/use constraints: | Interested users should contact 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 |
| Web site: | www.unep-wcmc.org |
| Data format(s): | Vector (point; .shp), Vector (polygon; .shp) |
| Distribution format(s): | Vector (point; .shp), Vector (polygon; .shp) |
| Dataset size (uncompressed): | 287 Mb |
| Webpage and/or download: | See metadata |
| Other webpage: | |

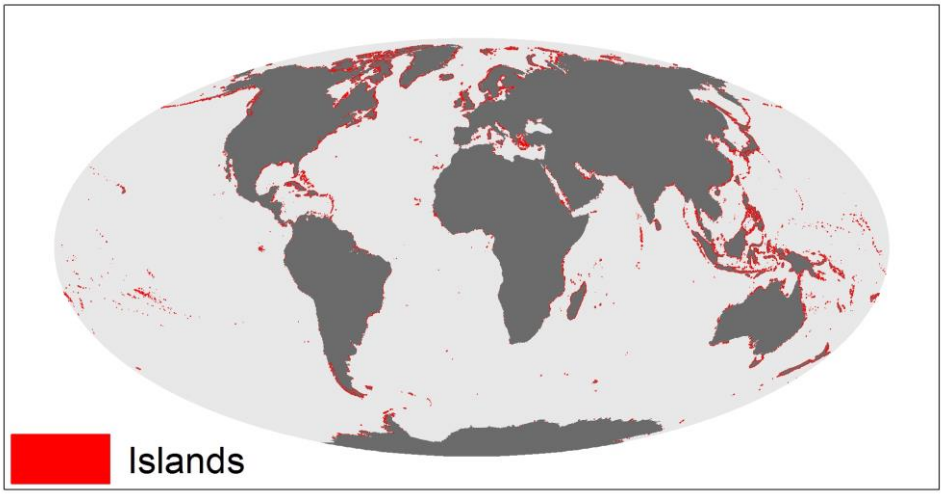
Dataset ID: WCMC-005

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: | 08/07/2015 |

# Global Distribution of Islands OSM (2013)

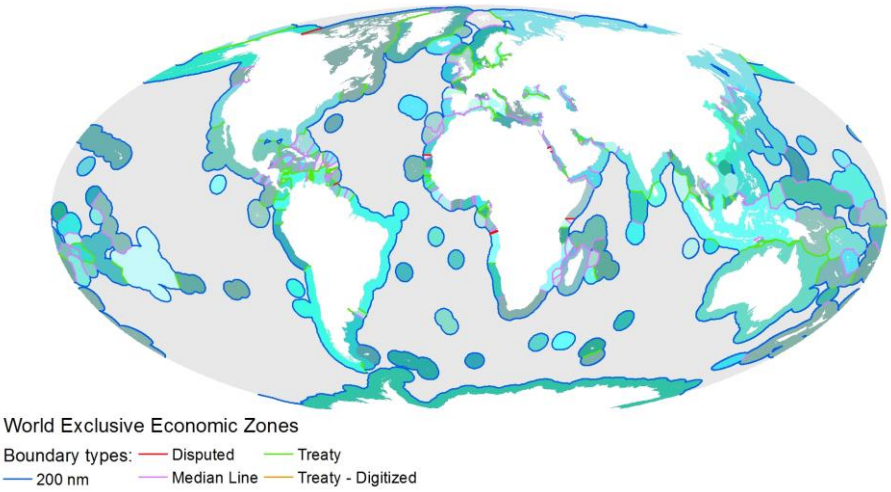



| | |
|---|---|
| Description: | This dataset shows the global distribution of islands. The information given here relates to version 2 of the dataset. |
| Citation(s): | UNEP-WCMC (2013). Global distribution of islands. Global Island Database (version 2.0). Based on Open Street Map data (© OpenStreetMap contributors). Cambridge (UK): UNEP World Conservation Monitoring Centre |
| Temporal range: | 2013 |
| 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); island ID code used by the partner Island Conservation (id_ic); island ID code used by the partner RSPB (id_rspb). |
| 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. The base layer was then substantially refined through the work of a number of organisations, including UNEP-WCMC, Island Conservation, BirdLife International, Royal Society for the Protection of Birds, and the Global Island Network. Relevant information from version 1 (essentially island names) was retained; note that versions 1 (dataset ID WCMC-005) and 2 (dataset ID WCMC-031) of the dataset can be joined using the id_ic field). |
| Version: | 2.0 (2013) |
| Data lineage: | This dataset replaces version 1.0 (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.<br><br>Presence of fake islands thoughout the dataset. Not all islands listed have an associated name.<br><br>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 and www.unep-wcmc.org/policies. For commercial use, please contact business-support@unep-wcmc.org.<br><br>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 | | |
| Web site: | www.unep-wcmc.org | | |
| Data format(s): | Vector (polygon; .shp) | | |
| Distribution format(s): | Vector (polygon; .shp) | Dataset size (uncompressed): | 861 Mb |
| Webpage and/or download: | marine@unep-wcmc.org | | |
| Other webpage: | | | |
| Web map service: | | | |
| Factsheet: | | | |
| Resolution, scale: | Not applicable | 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: | 08/07/2015 |

# Exclusive Economic Zone Boundaries




| | |
|---|---|
| Description: | This dataset shows the global distribution of Exclusive Economic Zones (EEZ). The dataset is composed of two subsets: a polyline vector that represents the maritime boundaries of the world countries, and a polygon vector representing the EEZ of countries. The dataset also contains information about treaties, and the internal waters of each country. |
| Citation(s): | VLIZ (2014). Maritime Boundaries Geodatabase. Version 8. Ostend (Belgium): Flanders Marine Institute. URL: http://www.marineregions.org |
| Temporal range: | 2006- |
| Geographical range: | Global |
| Supplementary information: | Attribute table (polygon subset): EEZ name (EEZ); country (Country); sovereign country (Sovereign); remarks (Remarks); sovereign country identification number (Sov_ID); EEZ identification number (EEZ_ID); country code (ISO_3digit); date of modification (Date_chang); surface area (Area_m2; in sq-m); latitude; longitude.<br><br>Attribute table (polyline subset): data source (Source); boundary type (TYPE; (i) 200 nm, (ii) disputed, (iii) median line, (iv) treaty, (v) treaty – digitized); bordering countries (Boundary), treaty date (TreatyDate); date of modification (LastChange).<br><br>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: | This is the first global public domain EEZ dataset. |
| Creation methodology: | The dataset was initially created from existing data (e.g. Europe's EUROSION data, the Australian Maritime Boundaries Information System - AMBIS, data from the National Oceanic and Atmospheric Administration - NOAA). Version 1.3 of the Global Self-consistent, Hierarchical, High-resolution Shoreline (GSHHS) database was used (from version 3) to increase the resolution on the land-side of the polygon layer. Information from a database of negotiated treaties from the United Nations Convention on the Law of the Sea (UNCLOS) was then incorporated. The remaining boundaries were calculated in a GIS (200 nm buffer) in accordance with UNCLOS. Full details on the methodology can be found at |

| | |
|---|---|
| | http://www.marineregions.org/eezmethodology.php. |
| Version: | 8.0 (2014) |
| 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: | None |
| Limitations: | Many countries have yet to agree maritime boundaries with neighbouring countries. Remarks and corrections can be sent to info@marineregions.org. The developers do not imply any opinion concerning the legal status of any country, territory or area, or concerning the delimitation of its frontiers or boundaries.<br><br>Version-specific 'known issues' and 'change history' can be found at: http://www.marineregions.org/downloads.php#eez.<br><br>The boundaries shown in this dataset do not imply official endorsement or acceptance by the United Nations.<br><br>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: | Copyright information can be found at: http://www.marineregions.org/disclaimer.php. The data can be used for educational, scientific or research purposes, but should not be used for legal, commercial/economical (exploration of natural resources) or navigational purposes. |
| Contact organisation: | Flanders Marine Institute |
| Organisation type: | Owner |
| Acronym: | VLIZ |
| Name: | Simon Claus |
| Position: | Project Manager |
| City: | Ostend |
| Country: | Belgium |
| E-mail: | info@marineregions.org |
| Web site: | www.marineregions.org |
| Data format(s): | Vector (polygon; .shp), Vector (polyline; .shp) |
| Distribution format(s): | KML (.kml or .kmz), Vector (polygon; .shp), Vector (polyline; .shp) |
| Dataset size (uncompressed): | 148 Mb |
| Webpage and/or download: | http://www.marineregions.org/downloads.php#eez |
| Other webpage: | http://www.marineregions.org/eez.php |

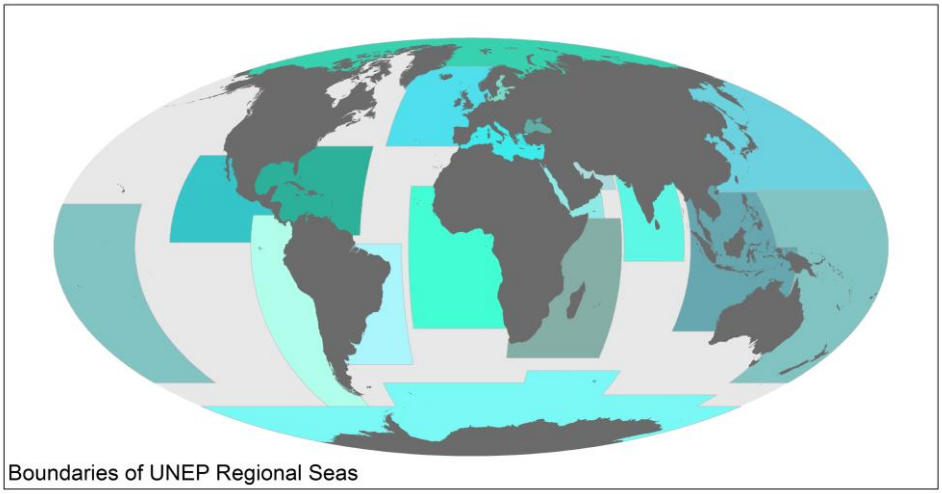
Dataset ID: VLIZ-001

Web map service: http://geo.vliz.be/geoserver/MarineRegions/wms?Request=getCapabilities

Factsheet:

| | | | |
|---|---|---|---|
| Resolution, scale: | Not applicable | Reference system: | WGS 1984 |
| West bounding: | -180.0 | East bounding: | 180.0 |
| South bounding: | -90.0 | North bounding: | 87.0 |
| Metadata standard: | UNEP-WCMC Specific | Date of metadata: | 08/07/2015 |

# Regional Seas Boundaries (unofficial)

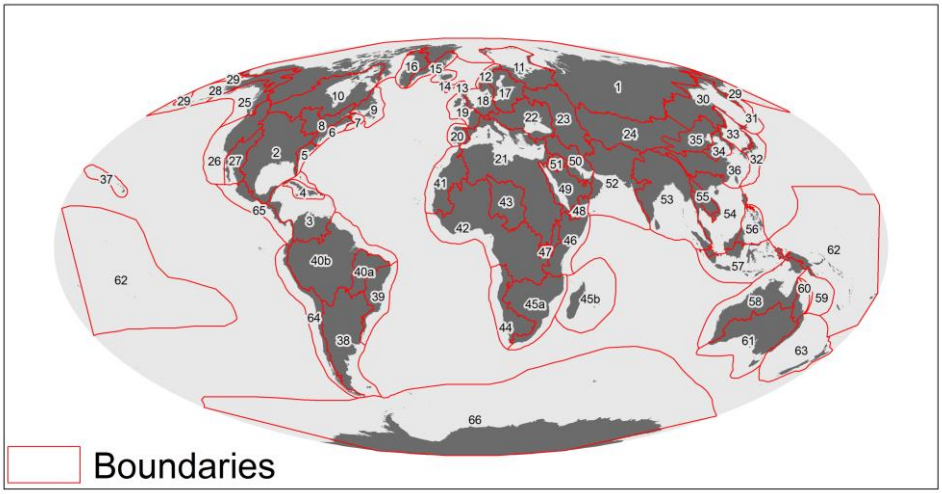

Boundaries of UNEP Regional Seas

| | |
|---|---|
| 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 | | |
| Web site: | 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 | | |
| 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 futher details.

**Version:**

**Data lineage:**

**Category:** Administration

**Keywords:** marine, coastal

**Similar datasets:** None

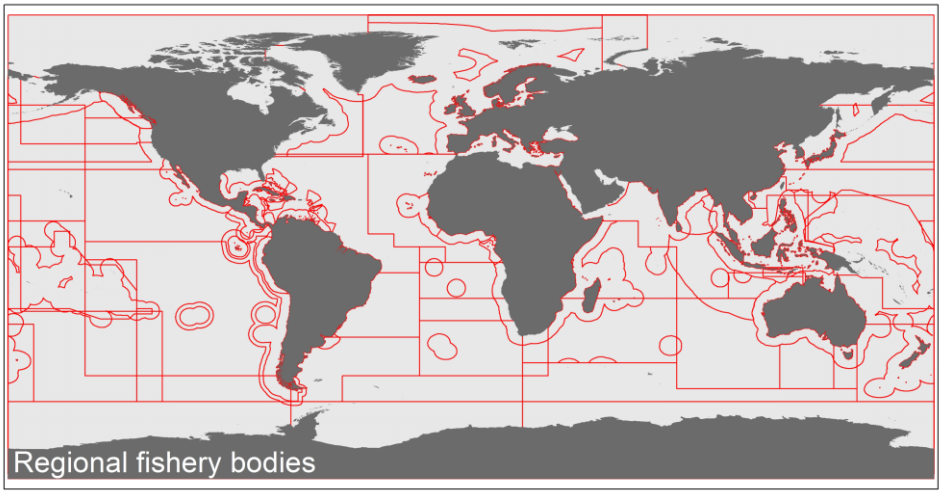
| | |
|---|---|
| Limitations: | The dataset only gives rough indications of the geographic location of the 66 water regions. It contains no information on drainage areas, and is thus not to be viewed as more than a simple geographic guide. |
| Maintenance frequency: | Data are not being updated. |
| Main access/use constraint: | See 'Other access/use constraint(s)'. |
| Other access/use constraints: | Please contact dewainfo@unep.org. |
| Contact organisation: | Division of Early Warning and Assessment, United Nations Environment Programme |

| | | | |
|---|---|---|---|
| Organisation type: | Owner | Acronym: | UNEP-DEWA |
| Name: | Fatoumata Keita-Ouane | Position: | SAB Chief |
| City: | Nairobi | Country: | Kenya |
| E-mail: | dewainfo@unep.org | | |
| Web site: | www.unep.org/DEWA | | |
| Data format(s): | Vector (polygon; .shp) | | |
| Distribution format(s): | | Dataset size (uncompressed): | 840 Kb |

| | |
|---|---|
| Webpage and/or download: | http://www.unep.org/dewa/giwa/ |
| Other webpage: | http://www.unep.org/dewa/giwa/areas/giwamap.asp |
| Web map service: | |
| Factsheet: | |

| | | | |
|---|---|---|---|
| Resolution, scale: | Not applicable | Reference system: | WGS 1984 |
| West bounding: | -180.0 | East bounding: | 180.0 |
| South bounding: | -89.3 | North bounding: | 89.0 |
| Metadata standard: | UNEP-WCMC Specific | Date of metadata: | 29/05/2015 |

# 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

FAO (2010). Boundary data for Regional Fishery Bodies. In Suplement: FAO (2001-2013). Rome (Italy): FAO Fisheries and Aquaculture Department. URL: 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).

Boudary 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.

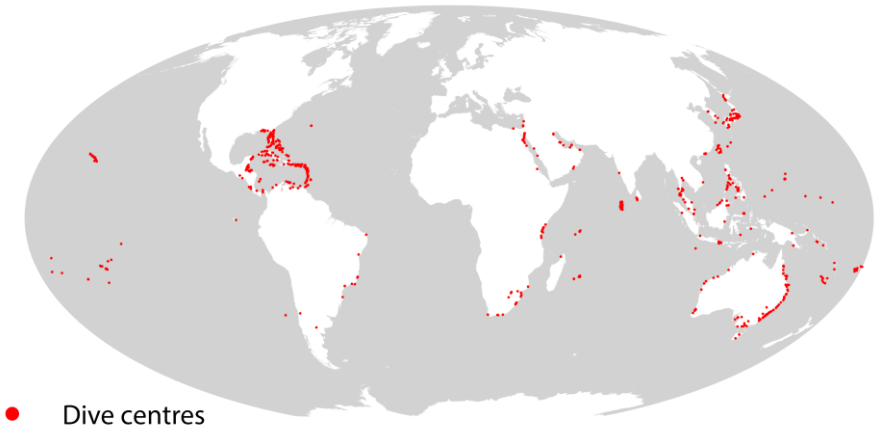
Dataset ID: FAO-001

| | |
|---|---|
| Purpose of creation: | 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. |
| Creation methodology: | 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. |
| Version: | 2010 |
| Data lineage: | This dataset is the 2010 update. |
| Category: | Administration |
| Keywords: | marine, coastal, high seas, deep sea, fisheries, FAO |
| Similar datasets: | None |
| Limitations: | The boundaries have not been validated by the relevant authorities. |
| Maintenance frequency: | Data are updated in intervals that are uneven in duration. |
| Main access/use constraint: | Unrestricted |
| Other access/use constraints: | Please cite the data source in all publications. |
| Contact organisation: | Food and Agriculture Organization of the United Nations |
| Organisation type: | Owner |
| Acronym: | FAO |
| Name: | Fabio Carocci |
| Position: | Fishery Research Assistant |
| City: | Rome |
| Country: | Italy |
| E-mail: | Fabio.Carocci@fao.org |
| Web site: | www.fao.org |
| Data format(s): | KML (.kml or .kmz), Vector (polygon; .shp) |
| Distribution format(s): | KML (.kml or .kmz), Vector (polygon; .shp) |
| Dataset size (uncompressed): | 19 Mb |
| Webpage and/or download: | http://www.fao.org:80/geonetwork?uuid=cc7dbf20-1b8b-11dd-8bbb-0017f293bd28 |
| Other webpage: | http://www.fao.org/geonetwork/srv/en/main.home |
| Web map service: | http://data.fao.org/maps/wms |
| Factsheet: | |

Dataset ID: FAO-001

| | | | |
|---|---|---|---|
| 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: | 29/05/2015 |

# Global Distribution of Dive Centres (2001)




| | |
|---|---|
| Description: | This dataset shows the global distribution of dive centres, some of which are PADI (Professional Association of Diving Instructors) affiliated. |
| Citation(s): | 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: http://data.unep-wcmc.org/datasets/27<br><br>Other cited reference(s):<br>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 |
| Temporal range: | 2001 |
| Geographical range: | Global |
| Supplementary information: | Layer attributes include: PADI code (padi_code), diving operator (operator), Address (postal_add, Postal_a_1 to Postal_a_5, country), Reference (re1, ref2), reef name and reef system where available. |
| Purpose of creation: | This dataset was created to accompany the World Atlas of Coral Reefs (map 2.1 in Spalding et al. 2001). |
| Creation methodology: | Records and locations extracted from published articles, online resources (e.g. reefbase) and organisations. For most records the source information is retained within the layer. |
| Version: | 1.2 (June 2015) |
| Data lineage: | The original dataset (version 1.0) was created in 2001, with some edits having occurred in 2003 (ver. 1.1). This version of the dataset (ver. 1.2, June 2015) includes corrections to the latitudinal coordinates of 39 dive centre points that were incorrectly placed. |
| Category: | Administration |
| Keywords: | coastal, marine, human |
| Similar datasets: | None |

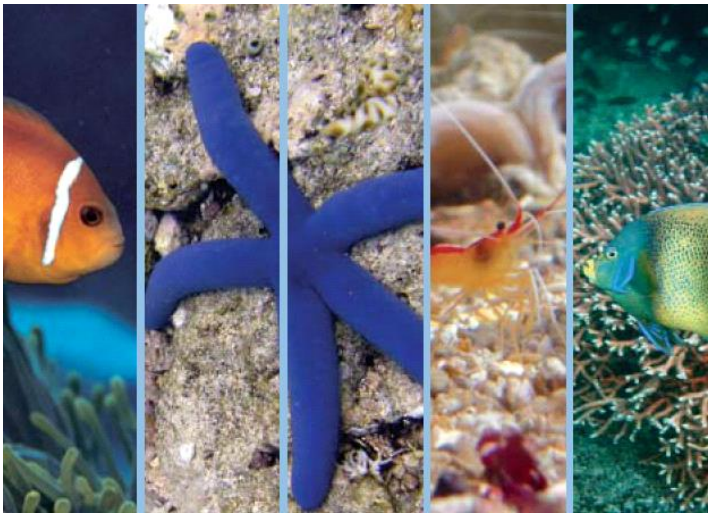
| | |
|---|---|
| Limitations: | This dataset is no longer maintained and should be used with caution. |
| Maintenance frequency: | Data are not being updated. |
| Main access/use constraint: | UNEP-WCMC General Data License (excluding WDPA). See www.unep-wcmc.org/policies/general-data-license-excluding-wdpa#data_policy and www.unep-wcmc.org/policies. For commercial use, please contact business-support@unep-wcmc.org. |
| Other access/use constraints: | None |
| Contact organisation: | 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 | | |
| Web site: | www.unep-wcmc.org | | |
| Data format(s): | Vector (point; .shp) | | |
| Distribution format(s): | Vector (point; .shp) | Dataset size (uncompressed): | 1.8 Mb |

| | |
|---|---|
| Webpage and/or download: | http://data.unep-wcmc.org/datasets/27 |
| Other webpage: | http://www.arcgis.com/home/item.html?id=6b7e227dd13f4d6088583102e18ad099 |
| Web map service: | http://ec2-54-204-216-109.compute-1.amazonaws.com:6080/arcgis/rest/services/marine/WCMC_030_DiveCentres2001/MapServer |
| Factsheet: | |

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

# Global 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).

Dataset ID: WCMC-023

| | |
|---|---|
| Purpose of creation: | The database was developed to address a need for impartial and quantitative data on the trade of ornamental marine species. The data were intended to be used to assess impact and identify suitable responses. |
| Creation methodology: | Trade data were obtained from wholesale exporters and importers of marine aquarium organisms, most often through copies of trade invoices. Data were integrated and standardised into quantitative, species-specific information. A total of 58 companies, approximately one-fifth of the wholesalers in business, and four government management authorities provided data to GMAD. |
| Version: | 1.0 (2003) |
| Data lineage: | |
| Category: | Administration |
| Keywords: | aquarium, trade, GMAD, OATA, marine, OFI, AKKII, MAC, fish, coral, invertebrates |
| Similar datasets: | None |
| Limitations: | Data in GMAD were collected on a voluntary basis only.<br><br>The database is not currently operational, and was last updated in 2003. |
| 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 and www.unep-wcmc.org/policies. For commercial use, please contact business-support@unep-wcmc.org. |
| Other access/use constraints: | The database contains information of a sensitive nature, which is removed from the distributed version. |
| 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 |
| Web site: | www.unep-wcmc.org |
| Data format(s): | Access database (.accdb) |
| Distribution format(s): | Access database (.accdb) |
| Dataset size (uncompressed): | 12.4 Mb |
| Webpage and/or download: | marine@unep-wcmc.org |
| Other webpage: | |

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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UNEP WCMC

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