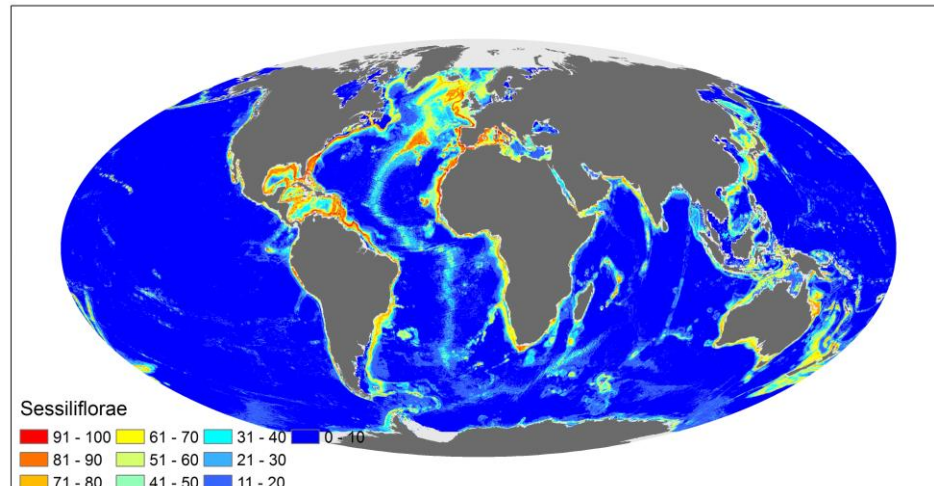


## Global Distributions of Habitat Suitability for Cold-Water Octocorals (2012)



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

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

**Temporal range:** 2012

**Geographical range:** Global

**Supplementary information:** All seven maps present a relative habitat suitability index ranging from 0 (unsuitable) to 100 (highly suitable).

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

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

requirements. This was the first global habitat suitability modelling study on the 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](mailto:chris.yesson@ioz.ac.uk).

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

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

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

|                                |                        |                                     |         |
|--------------------------------|------------------------|-------------------------------------|---------|
| <b>Distribution format(s):</b> | Raster (.tif, geotiff) | <b>Dataset size (uncompressed):</b> | 13.6 Mb |
|--------------------------------|------------------------|-------------------------------------|---------|

**Webpage and/or download:** <http://data.unep-wcmc.org/datasets/40>

Dataset ID: ZSL-001

Other webpage: <http://doi.pangaea.de/10.1594/PANGAEA.775081>

Web map service: [http://ec2-54-204-216-109.compute-1.amazonaws.com:6080/arcgis/rest/services/marine/ZSL\\_001\\_ModelledOctocorals2012/MapServer](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