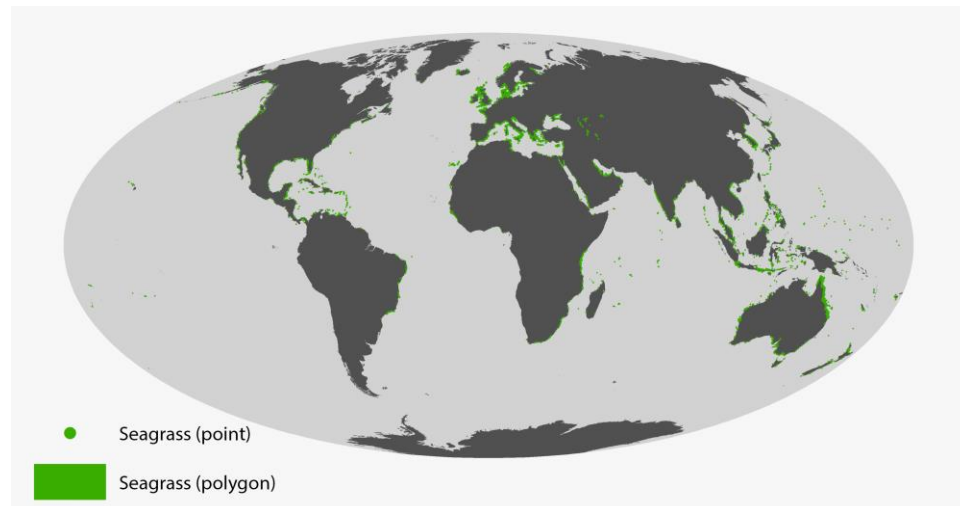


## Global Distribution of Seagrasses



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

**Citation(s):** UNEP-WCMC, Short FT (2017). Global distribution of seagrasses (version 6.0). Sixth update to the data layer used in Green and Short (2003). Cambridge (UK): UN Environment World Conservation Monitoring Centre. URL: <http://data.unep-wcmc.org/datasets/7>

**Other cited reference(s):**

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

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

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

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

declining-species-habitats. Data URL: <http://www.emodnet-seabedhabitats.eu/download>.

Temporal range: 1934-2015

Geographical range: Global

Supplementary information: Attribute table: Automatically generated number (OBJECTID); Unique ID distinguishing the data entry (LAYER\_ID); Metadata ID linking to the source of the dataset, found in the associated metadata table (METADATA\_ID); ISO 3166-3 character code of country or territory where the feature is located (PARENT\_ISO and ISO3); ISO 3166-2 sub-national code(s) where the feature is located (SUB\_LOC); English name of the feature as provided by the data provider (NAME); Name of the feature as provided by the data provider in original language (ORIG\_NAME); Local definition of feature as provided by the data provider (LOC\_DEF); Scientific (Latin) name(s) of family, genus and species (FAMILY, GENUS, SPECIES); Reported area in square kilometres (REP\_AREA\_KM2); Area calculated using GIS, in square kilometres (GIS\_AREA\_KM2); description of whether data have been obtained through remote sensing and/or field survey (DATA\_TYPE); data gathering approach (SURVEY\_MET); start and end date of data collection (of survey), supplied as text in the format YYYY-MM-DD (ISO date format) (START\_DATE, END\_DATE); character code that identifies accuracy of dates used in START\_DATE and END\_DATE to the nearest day(s), month(s), or year(s) (DATE\_TYPE); binomial value indicating whether the feature occurs in an area protected by law or any other conservation measure, where '0' = not within a protected area, '1' = partially within a protected area, and '2' = fully within a protected area (PROTECT); feature protected by law or by any other conservation measures (PROTECT\_FEAT); measure that protects the feature (PROTECT\_STAT); verification by government or expert (VERIF).

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

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

Version: 6.0 (June 2018)

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

Version 5 (December 2017): Standardises the feature and metadata attributes

using a new schema, which aligns the attributes used across the habitat datasets curated by UNEP-WCMC. The updated attribute schema is outlined in "Supplementary Information." Specific changes include the addition of information on level of protection (e.g. PROTECT, PROTECT\_FEAT, PROTECT\_STAT), indication of whether the data have received expert or government verification (VERIF), and information on the start and end dates of data collection (i.e. START\_DATE, END\_DATE). The new schema will be used to inform a set of quality indicators, assessing changes in data quality over time.

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

Version 4 (2016): The following changes were made to the dataset:

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

Total spatial changes reflected in the polygon feature class: Removed 708 square kilometres (69 polygons) and added 1,297,092 hectares / 12,970 sq km (35,416 polygons). The seagrass extent (after dissolve by ISO3) is 344,958 sq km. Total change in area between versions 3 and 4 (after dissolve by ISO3) is 7,950 sq km. Total changes to the point dataset include the addition of 8,887 data points.

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

**Category:** Biogenic habitat

**Keywords:** coastal, marine, blue carbon, seagrass, habitat, biogenic, ecosystem

**Similar datasets:** WCMC-015

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

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

Based on recent genetic and morphometric analysis, *Halophilla johnsonii*, *Halophila*

hawaiiiana, *Halophila ovata* and *Halophila minor* are now considered to be morphological variations of, and therefore conspecific with, *Halophila ovalis*. *Zostera mucronata*, *Zostera muelleri* and *Zostera novazelandica* are now considered to be morphological variations of, and therefore conspecific with, *Zostera capricorni*.

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

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

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

**Other access/use constraints:** In relation to the data provided by the Mediseh project (Bellusci et al. 2013; Telesca et al. 2015) for the Mediterranean basin, users must comply with article 11.10.3 of the Framework Contract with the European Commission, i.e. any re-distribution of these data:

- 1) requires prior written authorisation from the Commission (Directorate-General for Maritime Affairs and Fisheries, Brussels, Belgium),
- 2) shall mention the amount paid by the European Union (EUR 568,996).

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

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

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

**Distribution format(s):** KML, Vector (point; .shp), Vector (polygon; .shp), WMS **Dataset size (uncompressed):** 853 MB (polygons), 21 Mb (points)

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

**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\\_WMS/MapServer](http://ec2-54-204-216-109.compute-1.amazonaws.com:6080/arcgis/rest/services/marine/WCMC_013_014_Seagrass_WMS/MapServer)

Dataset ID: WCMC-013-014

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

Resolution, scale: 1:1,000,000

West bounding: -176.6

South bounding: -46.9

Metadata standard: UNEP-WCMC Specific

Reference system: WGS 1984

East bounding: 178.6

North bounding: 70.0

Date of metadata: 08/12/2017