2021 North American Blue Carbon source datasets

Contents

Note. All original and preprocessed datasets used in the integration of the North American Blue Carbon maps are publicly available upon request at naatlas@cec.org

Saltmarshes (Polygon layers)

SM_01 Global Distribution of Saltmarshes

World Conservation Monitoring Center-United Nations Environment Programme
Spatial Domain: Global
Geometry: Polygon
Layer status: New spatial layer
Data: https://data.unep-wcmc.org/datasets/43
Source metadata: https://data.unep-wcmc.org/pdfs/43/WCMC_027_Global_Distribution_of_Saltmarsh.pdf?1617122640
Source file name: WCMC027_Saltmarshes_Py_v6.shp
File folder: WCMC_NorthAmerica_saltmarshes
File name: WCMC_NorthAmerica_saltmarshes_polygon.shp
Scale/Resolution: 1:10,000 - 1: 4,000
Version: 6.0
Year of Origin: 2017
Year of Publication: 2019

Description

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

Citation: Mcowen, C. J., Weatherdon, L. V., Van Bochove, J. W., Sullivan, E., Blyth, S., Zockler, C., Stanwell-Smith, D., Kingston, N., Martin, C. S., Spalding, M., & Fletcher, S. (2017). A global map of saltmarshes. Biodiversity Data Journal, 5(1). https://doi.org/10.3897/BDJ.5.e11764

Preprocessing

The original dataset was acquired from the World Conservation Monitoring Centre (WCMC) that integrates two vector layers: polygons and points.

A "selection by attributes process" was performed to isolate all saltmarshes polygons corresponding to Canada, the United States and Mexico territories. All polygons located in the USA territories over the Pacific Ocean as well as Puerto Rico were deselected. A final saltmarshes layer was exported from the remaining polygons selection.

SM_02 United States National Wetlands Inventory

U.S. Fish and Wildlife Service

Spatial Domain: United States of America
Geometry: Polygon
Layer status: New spatial layer
Data: https://www.fws.gov/wetlands/Data/State-Downloads.html
Source metadata: https://www.fws.gov/wetlands/Data/metadata/FWS_Wetlands.xml
Source file name: AK_Wetlands_North.shp, AK_Wetlands_Central.shp, AK_Wetlands_South.shp, AL_Wetlands.shp, CA_Wetlands_North.shp, CA_Wetlands_NorthCentral.shp, CA_Wetlands_South.shp, CA_Wetlands_SouthCentral.shp, CT_Wetlands.shp, DE_Wetlands.shp, FL_Wetlands.shp, GA_Wetlands.shp, LA_Wetlands.shp, MA_Wetlands.shp, MD_Wetlands.shp, ME_Wetlands.shp, MS_Wetlands.shp, NC_Wetlands.shp, NH_Wetlands.shp, NJ_Wetlands.shp, NY_Wetlands.shp, OR_Wetlands_East.shp, OR_Wetlands_West.shp, RI_Wetlands.shp, SC_Wetlands.shp, TX_Wetlands_West.shp, TX_Wetlands_Central.shp, TX_Wetlands_East.shp, VA_Wetlands.shp, WA_Wetlands_West.shp
File folder: USA_NWI_2020_saltmarshes
File name: USA_NWI_2020_saltmarshes.shp
Scale/Resolution: 1:24,000 - 1:25,000
Version: 2.0
Year of Origin: 2016
Year of Publication: 2020

Description

"This dataset represents the extent, approximate location and type of wetlands and deepwater habitats in the United States and its Territories. These data delineate the areal extent of wetlands and surface waters as defined by Cowardin et al. (1979). The National Wetlands Inventory - Version 2, Surface Waters and Wetlands Inventory was derived by retaining the wetland and deepwater polygons that compose the NWI digital wetlands spatial data layer and reintroducing any linear wetland or surface water features that were orphaned from the original NWI hard copy maps by converting them to narrow polygonal features. Additionally, the data are supplemented with hydrography data, buffered to become polygonal features, as a secondary source for any single-line stream features not mapped by the NWI and to complete segmented connections. Wetland mapping conducted in WA, OR, CA, NV and ID after 2012 and most other projects mapped after 2015 were mapped to include all surface water features and are not derived data. The linear hydrography dataset used to derive Version 2 was the U.S. Geological Survey's National Hydrography Dataset (NHD)."

Citation: U.S. Fish and Wildlife Service (2020). National Wetlands Inventory - Version 2 - Surface Waters and Wetlands Inventory, 1:24,000 and 1:25,000, U.S. Department of the Interior, Fish and Wildlife Service, Washington D.C., USA.

Preprocessing

Based on Cowardin Classification (http://www.fws.gov/wetlands/Documents/Wetlands-and-Deepwater-Habitats-Classification-chart.pdf) used to delineate salt marshes in the 2015 CEC North America Blue Carbon Map, a SQL selection was set up to isolate saltmarshes in the 2020 USA National Wetlands Inventory.

USA National Wetlands Inventory (NWI) Code Definitions table was downloaded from the US Fish and Wildlife Service (https://www.fws.gov/wetlands/data/wetland-codes.html) and used to

join all polygon features descriptions to the state-level wetlands shapefiles available through the NWI.

The SQL expression selected all polygons defined as "Estuarine – Intertidal – Emergent – Persistent – Saltwater Tidal"

> WHERE "SYSTEM_NAME" == Estuarine AND "SUBSYSTEM_NAME" == Intertidal AND "CLASS_NAME" == Emergent OR "SUBCLASS_NAME" == Persistent AND "WATER_REGIME_SUBGROUP" == Saltwater Tidal

All saltmarshes' polygons identified at state-level based on the predefined SQL selection were finally merged into a national saltmarshes distribution file (Alaska and CONUS).

SM_03 C-CAP Saltmarshes USA Northeast

NOAA Coastal Change Analysis Program (C-CAP)
Spatial Domain: Regional
Geometry: Polygon
Layer status: New spatial layer
Data: https://coast.noaa.gov/digitalcoast/data/ccapsalthabitat.html
Source metadata: https://coast.noaa.gov/htdata/raster1/landcover/bulkdownload/marshhabitat/
Source file name: nh_2013_salt_marsh_habitats_20200813.shp,
ri_2012_salt_marsh_habitats_20210113.shp
File folder: C-CAP_USA_NorthEast
File name: C-CAP_USA_NorthEast.shp
Scale/Resolution: 0.5 meters
Version: N/A
Year of Origin: 2012 - 2013
Year of Publication: 2019 - 2020

Description

"New Hampshire: This data set is intended to establish a baseline to document statewide tidal wetland change over time. It focuses on salt marsh system response to relative sea level rise, documenting both changing quality and quantity of this habitat. Data was derived from high resolution multispectral orthoimagery collected on August 24, 2013 through the Piscataqua Region Estuaries Partnership and LiDAR data collected through the LiDAR for the NorthEast project (2011). Draft maps were created in 2015 and accuracy assessments continued until 2018.

Rhode Island: This data set consists of salt marsh habitats for the state of Rhode Island derived from high resolution (0.5m) imagery collecting during June 2012. This data set utilized 4 Band multispectral aerial orthoimagery contributed to RIGIS by the Rhode Island Eelgrass Mapping Taskforce [(c) 2012 RIGIS] and LiDAR data collected through the LiDAR for the NorthEast project (2011)."

Citation: NOAA C-CAP (2020). New Hampshire Salt Marsh Habitats 2013, National Oceanic and Atmospheric Administration (NOAA) Office for Coastal Management, USA; RIGIS (2017). Salt Marsh Habitats; saltmarsh12, Rhode Island Geographic Information System (RIGIS) Data Distribution System, Environmental Data Center, University of Rhode Island, Kingston, RI, USA.

Preprocessing

Polygons describing classes related to salt marsh habitats in both New Hampshire and Rhode Island files were selected and exported to new spatial layers. Classes selected were: Brackish Marsh, Dieoff Depression, High Marsh; J.gerardii, High Marsh; Mix, High Marsh; S.alterniflora, High Marsh; S.patens-D.spicata, Low Marsh, Panne, Salicornia spp., Salt Shrub, Short form S. alterniflora, Terrestrial border, Wrack.

New layers were merged in a new spatial layer combining salt marshes polygons from Rhode Island and New Hampshire and names were standardized to avoid different spelling refereeing to identical classes.

SM_04 Prince Edward Island 2000 Wetlands Inventory

PEI Department of Environment, Energy and Forestry
Spatial Domain: Regional
Geometry: Polygon
Layer status: Same as in 2015 CEC Blue Carbon Map
Data: http://www.gov.pe.ca/gis/download.php3?name=Wetlands00&file_format=SHP
Source metadata: http://www.gov.pe.ca/gis/index.php3?number=1008003&lang=E
Source file name: Wetlands2000_Modified.shp
File folder: PrinceEdwardIsland_2000saltmarshes
File name: PrinceEdwardIsland_2000saltmarshes.shp
Scale/Resolution: 1:17,500
Version: 1.0
Year of Origin: 2000
Year of Publication: 2005

Description

"Digital outline of PEI wetlands taken from 1: 17 500 CIR aerial photography during the 2000 Corporate Land Use Inventory. Interpreted from 1:17,500 color infrared photography Manually transferred to hardcopy clear film map of the polygons from the 1990 combined forest and wetland inventories Digitized through heads-up process onto current orthomaps using MapInfo Digitized using CARIS on a digitizing table. Derived from the 2000 Corporate Resource Inventory."

Citation: Dibblee, Randy (2000). Digital outline of PEI freshwater wetlands taken from 1: 17 500 CIR aerial photography during the 2000 Corporate Landuse Inventory, 1:17,500, PEI Department of Environment, Energy and Forestry, Charlottetown, PEI, Canada.

Preprocessing

This layer contains different types of wetland areas across Prince Edward Island, including "salt or brackish marshes". A "select by attributes" tool was used to select all "salt or brackish marshes" within the WETL_TYPE (Wetland Type) attribute. A final layer of saltmarshes of PEI was generated from the selected features.

SM_05 New Brunswick Hydrographic Network

New Brunswick, Department of Energy and Resource Development
Spatial Domain: Regional
Geometry: Polygon
Layer status: New spatial layer
Data: http://www.snb.ca/geonb1/e/DC/catalogue-E.asp
Source metadata: http://www.snb.ca/geonb1/e/DC/NBHN.asp
Source file name: NBHN_0000_03_wl.shp
File folder: NewBrunswick_HN_coastalmarshes
File name: NewBrunswick_HN_coastalmarshes.shp
Scale/Resolution: N/A
Version: 1.0
Year of Origin: 2018
Year of Publication: 2018

Description

"To delineate the surface drainage features for New Brunswick. Surface drainage features including rivers, streams, lakes, islands, and watershed boundaries including names for many rivers and streams."

Citation: ERD (2018). New Brunswick Hydrographic Network (NBHN), New Brunswick Department of Energy and Resource Development, Fredericton, NB, Canada.

Preprocessing

This layer was indicated by Bernie Connors (Land Information Infrastructure Secretariat Unit, Service New Brunswick) as the one that contains more specific information on the wetland types, including coastal marsh attribute. The codes for the attribute description are in a "xlsx" files delivered by Bernie Connors (DNR_DataDictionary.xlsx).

According to the reference xlsx spreadsheet, CM (Coastal Marsh) = wetlands dominated by rooted herbaceous plants that drain directly into coastal waters and have the potential to be at least partially inundated with salt or brackish water

As a first processing step, the wetlands layer within the Hydrographic Network set of files was selected (NBHN_0000_03_wl.shp). The WC attribute describes "wetland class", all "Coastal Marsh" polygons were selected and exported to a new feature dataset.

SM_06 Nova Scotia Forest Inventory

Nova Scotia, Department of Lands and Forestry
Spatial Domain: Regional
Geometry: Polygon
Layer status: New spatial layer
Data: https://novascotia.ca/natr/forestry/gis/dl_forestry.asp
Source metadata: https://novascotia.ca/natr/forestry/gis/pdf/Forest_metadata_web_attrib.pdf
Source file name: Annapolis.shp, Antigonish.shp, Cape Breton.shp, Colchester.shp, Cumberland.shp, Digby.shp, Guysborough.shp, Halifax East.shp, Halifax West.shp, Hants.shp,

Inverness.shp, Kings.shp, Lunenburg.shp, Pictou.shp, Queens.shp, Richmond.shp, Shelburne.shp, St. Marys.shp, Victoria.shp, and Yarmouth.shp
File folder: NovaScotia_saltmarsh_distribution
File name: NovaScotia_saltmarsh_distribution.shp
Scale/Resolution: 1:10,000 - 1:12,500
Version: 1.0
Year of Origin: 2020
Year of Publication: 2020

Description

"Current Forest Data (Cycles 2, 3 and 4 with additional updates). This version of the forest inventory is a combination of Interpretation Cycles 2, 3 and 4 with additional updates based on satellite imagery and field data in Halifax East. This data is dynamic and different areas of the province are in different stages of completion. This version of data is updated as work in individual counties is completed. Photography years: 1992-Present. All counties now contain VOLUME, BASAL AREA and AVERAGE DIAMETER attribute data. Please refer to the metadata for more information."

Citation: NSDLF (2020). Nova Scotia Interpreted Forest Inventory - Current Forest Data, 1:10,000 - 1:12,500, Nova Scotia Department of Lands and Forestry, Halifax, NS, Canada.

Preprocessing

This layer is a combination of county-level forest inventories of Nova Scotia, all the layers were merged to generate a province-level forestry inventory layer. Saltmarshes are described in the "wetland type" (WC_TYPE) field, code for saltmarsh = S.

Individual files were acquired for Annapolis, Antigonish, Cape Breton, Colchester, Cumberland, Digby, Guysborough, Halifax East, Halifax West, Hants, Inverness, Kings, Lunenburg, Pictou, Queens, Richmond, Shelburne, St. Marys, Victoria, and Yarmouth.

Saltmarshes were extracted from all forest inventories by individual files, that created a collection of individual files of saltmarshes. Those individual files by section were then integrated in a single file of saltmarshes for Nova Scotia.

SM_07 British Columbia Shorezone Observed Habitat Polygons

Ministry of Forests, Lands, Natural Resource Operations and Rural Development
Spatial Domain: Regional
Geometry: Polygon
Layer status: New spatial layer
Data: https://catalogue.data.gov.bc.ca/dataset/shorezone-observed-habitat-polygons/resource/995afa79-05d4-4c68-8d30-a81e0bf2b67d#edc-pow
Source metadata: https://catalogue.data.gov.bc.ca/dataset/shorezone-observed-habitat-polygons/resource/995afa79-05d4-4c68-8d30-a81e0bf2b67d#edc-pow
Source file name: HAB_O_PY_S_polygon.shp
File folder: BC_saltmarshes
File name: BC_saltmarshes.shp
Scale/Resolution: N/A

Version: N/A
Year of Origin: 2011
Year of Publication: 2018

Description

"The Observed Habitat Polygons show the various types of particular habitat that have been observed or calculated by biologists as well as an expectation of different species found in the habitats. Each bio area has several observed habitats, and it is the combination of the bio area and habitat observed number that identifies each unique observed habitat. This dataset was formally a depiction of the SHZN_HAB_OBS_POLYS_SVW warehouse layer."

Citation: BC FLNRORD (2018). British Columbia Shorezone Observed Habitat Polygons, BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development – GeoBC, Victoria, BC, Canada.

Preprocessing

This is an updated layer from the BC_ShoreZone dataset used in the CEC 2015 Blue Carbon Map (BC_ShoreZone 2014). The data was downloaded from the BC Geographic Warehouse Custom Download. By means of a selection by attributes, all polygons with SPECIES_NM equal to "marsh grasses and sedges" and "Salicornia virginica" were exported to a final BC saltmarshes layer.

SM_08 St. Lawrence wetlands classification (saltmarsh)

Environment and Climate Change Canada (guy.letourneau@canada.ca)
Spatial Domain: Regional
Geometry: Polygon
Layer status: Updated from 2015 Blue Carbon Map
Data: Dataset provided by Guy Letourneau (guy.letourneau@canada.ca) – (available on ouvert.canada.ca/en coming in 2021)
Source metadata: To come as soon as data are published on ouvert.canada.ca/en
Source file name: mh1991_riv_ouelle_UTM19.shp, mh1991_kamouraska_UTM19.shp, mh1991_riv_du_loup_UTM19.shp, mh1991_isle_verte_UTM19.shp, mh1991_trois_pistoles_UTM19.shp, mh1997_kamouraska_UTM19.shp, mh2000_la_pocatiere_UTM19.shp, mh2000_riv_ouelle_UTM19.shp, mh2000_riv_du_loup_UTM19.shp, mh2000_trois_pistoles_UTM19.shp, mh2002_kamouraska_UTM19.shp, mh2002_isle_verte_UTM19.shp
File folder: St.Lawrence_saltmarshes
File name: St.Lawrence_saltmarshes.shp
Scale/Resolution: 1991 (7m); 1997 (4m); 2000 (3.5m); 2002 (4m)
Version: 2.0 (1991) and 1.0 (2000, 2002)
Year of Origin: 1991, 1997, 2000, 2002
Year of Publication: 2005, 2006

Description

"The Saint-Lawrence Wetlands Mapping Project is a multi-year project that mapped portions of shores of the St-Lawrence river. The 64 land use categories, including wetland classes were

mapped using remote-sensed imagery from 1990/1991, 1996/97, 2000, and 2002. The data and associated reports are published by Environment Canada's Saint-Lawrence Centre."

Citation: Létourneau, G. and M. Jean (2005). Mapping the Wetlands of the St. Lawrence using Remote Sensing (1990–91). Scientific and Technical Report ST-232E. Environment Canada – Quebec Region, Environmental Conservation, St. Lawrence Centre. 98 pages. ISBN 0-662-42415-8; Létourneau, Guy et Martin Jean (2006). Cartographie par télédétection des milieux humides du Saint-Laurent (1996-1997). Environnement Canada, Direction générale des sciences et de la technologie, Monitoring et surveillance de la qualité de l'eau au Québec. Rapport scientifique et technique ST-237, 126 pages. ISBN 0-662-71919-0 (French only); Létourneau, Guy et Martin Jean (2006). Cartographie par télédétection des milieux humides du Saint-Laurent (2000). Environnement Canada, Direction générale des sciences et de la technologie, Monitoring et surveillance de la qualité de l'eau au Québec. Rapport scientifique et technique ST-238, 212 pages. ISBN 0-662-72218-3 (French only); Létourneau, Guy et Martin Jean (2006). Cartographie par télédétection des milieux humides du Saint-Laurent (2002). Environnement Canada, Direction générale des sciences et de la technologie, Monitoring et surveillance de la qualité de l'eau au Québec. Rapport scientifique et technique ST-239, 130 pages. ISBN 0-662-72219-1 (French only)

Preprocessing

The layers used to generate the St. Lawrence saltmarshes distribution were delivered by Environment and Climate Change Canada. The shapefiles used to generate this layer correspond to the estuarine section of the St. Lawrence river. Based on feedback from Guy Letourneau (Environment and Climate Change Canada), some of the shapefiles of the sections used in the 2015 Blue Carbon Map should be omitted as they are not considered as part of estuarine region of the St. Lawrence river. Sections of Quebec, Cap Tourmente, Montmangy, and Orleans that were included in the previous Blue Carbon Map of North America are omitted in this updated version.

Different years in the shapefiles correspond to different mapping efforts based on the date when the source orthoimages were taken. Due to geometry problems reported by Environment and Climate Change Canada, files from 2000 were not used when there were files from 2002 for each section of the River. The process to prepare the final layer of the salt marshes in the St. Lawrence river is described below.

1. A new attribute field describing the year of origin of each polygon was added to each shapefile of the preselected river sections.
2. Merge of 12 shapefiles that encompass the estuarine section of the St. Lawrence river.
3. Dissolve all polygons based on their legend description.
4. Selection by attributes of polygons containing the text string "marsh" and export to a final St. Lawrence saltmarshes layer.

Mangroves (Polygon layers)

MG_01 Global Distribution of Mangroves USGS (2011)

World Conservation Monitoring Center-United Nations Environment Programme
Spatial Domain: Global
Geometry: Polygon

Layer status: Updated layer from 2015 Blue Carbon Map
Data: https://data.unep-wcmc.org/datasets/4
Source metadata: https://data.unep-wcmc.org/pdfs/4/WCMC_010_Global_Distribution_of_Mangroves_USGS.pdf?1617121566
Source file name: 14_001_WCMC010_MangroveUSGS2011_v1_3.shp
File folder: WCMC_USGS_mangrove_dstribution
File name: WCMC_USGS_mangrove_dstribution.shp
Scale/Resolution: 30 meters
Version: 1.3
Year of Origin: 2011
Year of Publication: 2015

Description

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

Citation: Giri, C., Ochieng, E., Tieszen, L.L., 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. https://doi.org/10.1111/j.1466-8238.2010.00584.x

Preprocessing

A "selection by attributes process" was performed to isolate all mangrove polygons within the United States and Mexico territories. All polygons located in the USA territories over the Pacific Ocean as well as Puerto Rico were deselected. A final saltmarshes layer was exported from the remaining polygons selection.

MG_02 Mangrove distribution in Mexico, 2020

National Commission for the Knowledge and Use of Biodiversity (CONABIO)
Spatial Domain: Mexico
Geometry: Polygon
Layer status: Updated layer from 2015 Blue Carbon Map
Data: http://geoportal.conabio.gob.mx/metadatos/doc/html/mx_man20gw.html
Source metadata: http://geoportal.conabio.gob.mx/metadatos/doc/html/mx_man20gw.html
Source file name: mx_man20gw.shp
File folder: CONABIO_mexico2020_mangrove_distribution
File name: CONABIO_mexico2020_mangrove_distribution.shp
Scale/Resolution: 1:50,000
Version: 1.0
Year of Origin: 2020
Year of Publication: 2021

Description

"The map represents the distribution and extension of the mangrove cover in Mexico for the year 2020, obtained from an interdependent classification method, based on land use and vegetation maps of the coastal zone associated with the mangroves of Mexico. A total of 94 Sentinel-2 satellite images of the constellation of the European Space Agency (ESA) were used, covering the months of January to May 2020."

Citation: CONABIO (2021). Distribución de los manglares en México en 2020, 1:50,000, Ed. 1. Comisión Nacional para el Conocimiento y Uso de la Biodiversidad - Sistema de Monitoreo de los Manglares de México (SMMM), Mexico City, Mexico.

Preprocessing

No preprocessing was needed for this dataset.

MG_03 Disturbed Mangrove distribution in Mexico, 2020

National Commission for the Knowledge and Use of Biodiversity (CONABIO)
Spatial Domain: Mexico
Geometry: Polygon
Layer status: New spatial layer
Data: http://geoportal.conabio.gob.mx/metadatos/doc/html/mx_mp2020gw.html
Source metadata: http://geoportal.conabio.gob.mx/metadatos/doc/html/mx_mp2020gw.html
Source file name: mx_mp2020gw.shp
File folder: CONABIO_mexico2020_disturbed_mangrove_distribution
File name: CONABIO_mexico2020_ disturbed_mangrove_distribution.shp
Scale/Resolution: 1:50,000
Version: 1.0
Year of Origin: 2020
Year of Publication: 2021

Description

"The map represents the distribution and extension of the disturbed mangrove cover in Mexico for the year 2020, obtained from an interdependent classification method, based on land use and vegetation maps of the coastal zone associated with the mangroves of Mexico. 2015. A total of 94 Sentinel-2 satellite images of the constellation of the European Space Agency (ESA) were used, covering the months of January to May 2020."

Citation: CONABIO (2021). Distribución de manglar perturbado de México en 2020, 1:50,000, Ed. 1. Comisión Nacional para el Conocimiento y Uso de la Biodiversidad - Sistema de Monitoreo de los Manglares de México (SMMM), Mexico City, Mexico.

Preprocessing

No preprocessing was needed for this dataset.

Seagrasses (Polygon layers)

SG_01 Global Distribution of Seagrasses

World Conservation Monitoring Center-United Nations Environment Programme
Spatial Domain: Global
Geometry: Polygon
Layer status: Updated layer from 2017 Blue Carbon Map
Data: https://data.unep-wcmc.org/datasets/7
Source metadata: https://data.unep-wcmc.org/pdfs/7/WCMC_013_014_Global_Distribution_of_Seagrasses.pdf?1617122071
Source file name: WCMC013014-Seagrasses-Py-v7.shp
File folder: WCMC_NorthAmerica_seagrasses
File name: WCMC_NorthAmerica_seagrasses_polygon.shp
Scale/Resolution: 1:12,000 - 1:80,000
Version: 7.0
Year of Origin: 2020
Year of Publication: 2020

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 UN Environment World Conservation Monitoring Centre in collaboration with many collaborators (e.g. Frederick Short of the University of New Hampshire), organisations (e.g. OSPAR), and projects (e.g. the European project Mediterranean Sensitive Habitats "Mediseh"), across the globe (full list available in accompanying metadata table within the dataset)."

Citation: UNEP-WCMC, Short, F.T. (2020). Global distribution of seagrasses (version 7.0). Seventh update to the data layer used in Green and Short (2003). Cambridge (UK): UN Environment World Conservation Monitoring Centre. http://data.unep-wcmc.org/datasets/7

Preprocessing

The original data set was acquired from the World Conservation Monitoring Centre (WCMC) that integrates two vector layers: polygons and points.

A "selection by attributes process" was performed to isolate all seagrasses polygons corresponding to Canada, the United States and Mexico territories. All polygons located in the USA territories over the Pacific Ocean as well as Puerto Rico were deselected. A final seagrass layer was exported from the remaining polygons selection.

SG_02 BC Howe Sound Eelgrass distribution

Howe Sound/Átl'ḵa7tsem Marine Reference Guide
Spatial Domain: Regional
Geometry: Polygon
Layer status: New spatial layer
Data: Dataset provided by Matt Christensen, University of British Columbia
(mattch85@gmail.com)

Source metadata: https://howesoundguide.ca/wp-content/uploads/2020/02/Eelgrass-survey-report_MRG_final.pdf
Source file name: Eelgrass_HowSound.gdb
File folder: BC_HoweSound_seagrasses
File name: BC_HoweSound_seagrasses.shp
Scale/Resolution: N/A
Version: N/A
Year of Origin: 2012 - 2018
Year of Publication: 2020

Description

"The Howe Sound/Atl'ka7tsem Marine Reference Guide ("the Guide") is a collaborative and community-led initiative whose goal is to build capacity to protect the human and natural values associated with Howe Sound/Atl'ka7tsem's marine environment in the face of growing anthropogenic pressures. Atl'ka7tsem is the Squamish Nation place name for this region, which sits within their traditional and unceded territory. The Guide is a project on Tides Canada's shared platform.

To achieve its objective, the Guide is creating decision-support tools that effectively arm local decision-makers and community groups with robust data and holistic information about the region's marine realm. One such tool is an online interactive map and database that will include hundreds of data layers about the Sound's marine ecology, human activities, and vulnerability to anthropogenic pressures (e.g. climate change). This map will visualize areas of multi-use and potential conflict, and provide valuable baseline data at a regional scale.

In July 2019, staff from the Guide co-presented with Moonstone Enterprises to the Town of Gibsons' mayor and council about the status of eelgrass restoration and monitoring in the Sound, and announced that the Guide would survey the Sound's mainland eelgrass in the fall of 2019. Given the interest of the Town of Gibsons ("the Town") in updating their foreshore eelgrass distribution maps (which had previously been surveyed in 2004 and 2013 by Dianne Sanford, sole proprietor of Moonstone Enterprises), councilors requested that the Guide survey the Town's recreational water lease using the same methodology. These data will support the Town's capacity to protect critical nearshore ecosystems in the face of growing pressures facing this region."

Citation: Beaty, Fiona & Sanford, Dianne (2019). Town of Gibsons and Howe Sound/Atl'ka7tsem Eelgrass Survey Report. Howe Sound/Atl'ka7tsem Marine Reference Guide & Moonstone Enterprises Interpretation and Consulting, Canada

Preprocessing

The original data is available in a geodatabase that contains different polygon layers with seagrass distribution and a layer that merges all of them. The "Eelgrass_HoweSound_Merged" was selected and exported to a new polygons spatial layer.

SG_03 British Columbia ShoreZone Observed Habitat Polygons

BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development

Spatial Domain: Regional
Geometry: Polygon
Layer status: New spatial layer
Data: https://catalogue.data.gov.bc.ca/dataset/shorezone-observed-habitat-polygons/resource/995afa79-05d4-4c68-8d30-a81e0bf2b67d#edc-pow
Source metadata: https://catalogue.data.gov.bc.ca/dataset/shorezone-observed-habitat-polygons/resource/787b45c7-4340-4c28-ba2c-051c78cfb5eb
Source file name: HAB_O_PY_S_polygon.shp
File folder: BC_ShoreZone_seagrasses
File name: BC_ShoreZone_seagrasses.shp
Scale/Resolution: 1:2,000 - 1:50,000
Version: N/A
Year of Origin: 2011
Year of Publication: 2018

Description

"The Observed Habitat Polygons show the various types of particular habitat that have been observed or calculated by biologists as well as an expectation of different species found in the habitats. Each bioarea has several observed habitats, and it is the combination of the bioarea and habitat observed number that identifies each unique observed habitat. This dataset was formally a depiction of the SHZN_HAB_OBS_POLYS_SVW warehouse layer."

Citation: BC FLNRORD (2018). British Columbia ShoreZone Observed Habitat Polygons, BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development – GeoBC, Victoria, BC, Canada.

Preprocessing

This is an updated layer from the BC_ShoreZone 2014 dataset used in the CEC 2015 Blue Carbon Map. The data was downloaded from the BC Geographic Warehouse Custom Download. By means of a selection by attributes, all polygons with SPECIES_NM equal to "Zostera marina" were exported to a final BC saltmarshes layer.

SG_04 East Canada Eelgrass Inventory

Fisheries and Oceans Canada (DFO)
Spatial Domain: Regional
Geometry: Polygon
Layer status: New spatial layer
Data: Data: Dataset provided by Matt Christensen, University of British Columbia (mattch85@gmail.com)
Source metadata: N/A
Source file name: Zostera_Zostere.shp
File folder: EastCanada_eelgrass_inventory
File name: EastCanada_eelgrass_inventory.shp
Scale/Resolution: N/A
Version: N/A
Year of Origin: 1987 - 2009
Year of Publication: 2009

Description

"The layer presents the information on the distribution of eelgrass (Zostera marina) beds in James Bay, Chaleur Bay, Estuary and Gulf of St. Lawrence according to a literature review of documents produced between 1987 and 2009."

Citation: N/A

Preprocessing

Based on feedback from different experts (Brigitte Leblon, University of New Brunswick; Javier Guijarro-Sabaniel, Fisheries and Oceans Canada; Melanie Leblanc, McGill University) in relation the high uncertainty in the seagrasses distribution in James Bay derived from previous mapping efforts; all polygons in the region were removed from this dataset.

SG_05 New Brunswick Eelgrass Distribution

Melanie Leblanc (McGill University)
Spatial Domain: Regional
Geometry: Polygon
Layer status: New spatial layer
Data: Dataset provided by Melanie Leblanc (leblanc.melanie.louise@gmail.com)
Source metadata: https://www.tandfonline.com/doi/full/10.1080/07038992.2021.1893672
Source file name: ID56_EelgrassTabusintac_NewBrunswick.shp
File folder: Tabusintac_NB_eelgrass_distribution
File name: Tabusintac_NB_eelgrass_distribution.shp
Scale/Resolution: 30 m
Version: N/A
Year of Origin: 2017
Year of Publication: 2021

Description

"This layer comprises results obtained by Mélanie-Louise Leblanc PhD research. "Connections Between Eelgrass, Geese, and Cree Harvest and Culture in Eastern James Bay". Methodology: produced from Landsat 8 + ground truth data - the extent of eelgrass meadows in the estuary.

Citation: Leblanc, Melanie-Louise, Armand LaRocque, Brigitte Leblon, Al Hanson & Murray M. Humphries (2021). Using Landsat Time-Series to Monitor and Inform Seagrass Dynamics: A Case Study in the Tabusintac Estuary, New Brunswick, Canada, Canadian Journal of Remote Sensing, DOI: 10.1080/07038992.2021.1893672

Preprocessing

Classes corresponding to seagrass habitats were extracted from the field "CLASS NAME": Class1 "LOW", Class2 "MED", Class3 "DENSE".

SG_06 St. Lawrence wetlands classification (seagrass)

Environment and Climate Change Canada (guy.letourneau@canada.ca)

Spatial Domain: Regional
Geometry: Polygon
Layer status: Same as 2017 Blue Carbon Map
Data: Dataset provided by Guy Letourneau (guy.letourneau@canada.ca) – (available on ouvert.canada.ca/en during 2021)
Source metadata: To come as soon as data are published on ouvert.canada.ca/en
Source file name: Map_13.tif, Map_14.tif
File folder: StLawrence_seagrasses
File name: StLawrence_seagrasses.shp
Scale/Resolution: 7 m
Version: 1.0
Year of Origin: 1991
Year of Publication: 1996

Description

"The Saint-Lawrence Wetlands Mapping Project is a multi-year project that mapped portions of shores of the St-Lawrence River. The 64 land use categories, including wetland classes were mapped using remote-sensed imagery from 1990/1991, 1996/97, 2000, and 2002. The data and associated reports are published by Environment Canada's Saint-Lawrence Centre."

Citation: Létourneau, G and M. Jean (1996). Cartographie des marais, marécages et herbiers aquatiques le long du Saint-Laurent par télédétection aéroportée. Environnement Canada - Région du Québec, Conservation de l'environnement, Centre Saint-Laurent. Rapport scientifique et technique ST-61, 114 pages. ISBN 0-662-81544-0 (French only)

Preprocessing

The layers used to generate the St. Lawrence seagrasses distribution were delivered by Environment and Climate Change Canada. The files were delivered in raster format, containing pixels of eelgrass distribution in 1991. Eelgrass data is only available in the area between Isle Verte and Trois Pistole. Based on feedback from Guy Letourneau (Environment and Climate Change Canada), data from "Map_13.tif" must be impose over "Map_14.tif".

1. A mosaic to new raster process was performed to generate a single raster file for the region of interest.
2. Conversion from raster to vector polygons preserving pixel edges shape.
3. Values corresponding to "Fucus and Eelgrass == 14" and "Eelgrass == 15" were selected and exported to a new spatial layer.
4. A new attribute field describing the year of origin of the data was added to the attribute table and filled with "1991".

A new attribute field describe the class name was added to the attribute table and filled with "14 == Fucus and Eelgrass" and "15 == Eelgrass"

SG_07 Alaska and the Aleutians seagrass distribution

United States Geological Survey and Fish and Wildlife Service
Spatial Domain: Regional

Geometry: Polygon
Layer status: Same as 2017 Blue Carbon Map
Data: Dataset provided by Frederick T. Short (fredtshort@gmail.com)
Source metadata: N/A
Source file name: Togiak_All_PhotoMos_ZM.shp, AKpen_NunivakIsl_All_Landsat_ZM.shp,
Togiak_All_SatIK2QB2_ZM.shp
File folder: Alaska_seagrass_distribution
File name: Alaska_seagrass_distribution.shp
Scale/Resolution: N/A
Version: N/A
Year of Origin: 2002 - 2008
Year of Publication: 2012

Description

"The creation of this dataset was a collaborative effort between the U.S. Geological Survey and the U.S. Fish and Wildlife Service. The dataset serves as baseline information for the spatial extent and distribution of eelgrass (Zostera marina) in waters adjacent to the Togiak National Wildlife Refuge enabling a monitoring program for this important coastal habitat.

These data were derived from satellite imagery (Ikonos-2 and Quickbird-2) acquired in June/August 2002 – 2008. After conversion of the raw data from digital number to at sensor radiance and atmospheric correction using dark pixel subtraction, the imagery was classified into the land cover categories of eelgrass, bare substrate, and water. The eelgrass distribution data was then extracted from the raster grid and converted to vector data.

The spatial data was obtained as unpublished shape files for parts of the Alaskan coastline. From David Ward, United States Geological Survey, Anchorage, Alaska."

Citation: Dataset provided by Frederick T. Short (fredtshort@gmail.com), from David Ward, United States Geological Survey, Anchorage, Alaska

Preprocessing

Three input layers were merged into a new polygon spatial layer.

SG_08 Washington coast seagrass distribution

Washington State Department of Natural Resources Submerged Vegetation Monitoring Program
Spatial Domain: Regional
Geometry: Polygon
Layer status: Updated layer from 2017 Blue Carbon Map
Data: https://fortress.wa.gov/dnr/adminsa/gisdata/datadownload/SVMP_distribution.zip
Source metadata: https://fortress.wa.gov/dnr/adminsa/gisdata/datadownload/SVMP_distribution.zip
Source file name: SVMP_distribution.gdb
File folder: Washington_coast_seagrasses
File name: Washington_coast_seagrasses.shp
Scale/Resolution: 1:50,000 - 1:625,000
Version: N/A

Year of Origin: 2000 - 2019
Year of Publication: 2020

Description

"The Submerged Vegetation Monitoring Program (SVMP) has conducted annual monitoring of the status and trends of native seagrass in greater Puget Sound since 2000. The native seagrasses monitored include the dominant eelgrass (Zostera marina) as well as the less abundant surfgrass (Phyllospadix scouleri and P. serrulatus). This geoDataset is the central component of the 2000-2019 Puget Sound eelgrass monitoring dataset. This dataset is produced by the Submerged Vegetation Monitoring Program (SVMP) within the Washington Department of Natural Resources.

Polygons represent general area where eelgrass has been recorded over the 2000-2017 monitoring period at each site sampled. The polygon for each site is based on the individual polygons used for surveying each year."

Citation: WA-DNR, (2020). Submerged Vegetation Monitoring Program 2000-2019 Database, Washington Department of Natural Resources, Aquatic Resources Division, Olympia, WA, USA.

Preprocessing

All polygons classified as different than "no_grass" class in the "generalized_eelgrass_poly" layer withing the source geodatabase were selected and exported to a new polygons spatial layer.

SG_09 Washington ShoreZone seagrass distribution

Washington State Department of Natural Resources
Spatial Domain: Regional
Geometry: Polygon
Layer status: Same as 2017 Blue Carbon Map
Data: https://geo.wa.gov/datasets/wadnr::shorezone-inventory-seagrass?geometry=-129.287%2C46.339%2C-117.641%2C48.929
Source metadata: https://geo.wa.gov/datasets/wadnr::shorezone-inventory-seagrass?geometry=-129.287%2C46.339%2C-117.641%2C48.929
Source file name: eelpoly.shp
File folder: Washington_ShoreZone_seagrass_distribution
File name: Washington_ShoreZone_seagrass_distribution.shp
Scale/Resolution: 1:24,000
Version: N/A
Year of Origin: 2001
Year of Publication: 2006

Description

"The Washington State ShoreZone Inventory is a statewide inventory of shoreline habitat. The ShoreZone Inventory describes the physical and biological characteristics of intertidal and shallow subtidal areas. It can be used to better understand and manage Washington's coastal ecosystem. It was completed by the Nearshore Habitat Program in the Washington State Department of Natural Resources (DNR), Aquatic Resources Division (AQR)."

Citation: N/A

Preprocessing

The polygons different than "absent" in the layer eelpoly.shp was exported to a new polygons spatial layer from the source geodatabase.

SG_10 Density of Eelgrass in the USA Northeast Atlantic

Northeast Ocean Data
Spatial Domain: Regional
Geometry: Polygon
Layer status: New spatial layer
Data: https://www.northeastoceandata.org/data-download/
Source metadata: https://www.northeastoceandata.org/files/metadata/Themes/Restoration/EelgrassBeds.pdf
Source file name: ID65_Habitat.gdb
File folder: NortheastAtlantic_eelgrass_density
File name: NortheastAtlantic_eelgrass_density.shp
Scale/Resolution: 1:5,000 - 1:3,000,000
Version: N/A
Year of Origin: 2014
Year of Publication: 2014

Description

"The purpose of mapping the distribution of eelgrass (Submerged Aquatic Vegetation - SAV) is to determine areas where eelgrass is present throughout coastal New England waters in order to support coastal and ocean planning. For the dataset "Wetlands" represents the extent and approximate location of coastal wetlands in the northeastern United States. The data presented was exclusively derived from the National Wetlands Inventory (NWI). The classification system used by the NWI was assessed by wetland specialists and classes were selected to specifically represent coastal wetlands. Coastal wetlands were defined as vegetated wetlands in saline or brackish waters that were not permanently flooded, or not in open water. The NWI classes that applied to this definition included: A) Estuarine intertidal emergent, B) Estuarine intertidal scrub-shrub, C) Estuarine intertidal forested, D) Estuarine intertidal unconsolidated shore with organic soil types that were irregularly flooded."

Citation: Longley, K. (2014). Eelgrass Beds, Northeast United States, SeaPlan, Boston, MA, USA.

Preprocessing

No preprocessing was needed for this dataset.

SG_11 San Francisco Bay seagrass distribution

Frederick T. Short (University of New Hampshire)
Spatial Domain: Regional
Geometry: Polygon
Layer status: Same as 2017 Blue Carbon Map

Data: Dataset provided by Frederick T. Short (fredtshort@gmail.com)
Source metadata: https://www.dropbox.com/s/9jp9bzg19ta902u/2009_sfbay_eelgrass_metadata.htm?dl=0
Source file name: US-CA-SFBay_FShort_Eelgrass_p.shp
File folder: SFbay_seagrass_distribution
File name: SFbay_seagrass_distribution.shp
Scale/Resolution: N/A
Version: N/A
Year of Origin: 2009
Year of Publication: 2009

Description

"San Francisco baywide eelgrass layer with density attributes developed from data collected in October and November of 2009. Data were developed for the California Department of Transportation and the National Marine Fisheries Service", "Use Constrains: These data are considered to be draft-final and are subject to further revision by the authors. Data are for planning and regional management purposes only. Data have a higher degree of error expectation than would be anticipated from a survey of a smaller survey area. and shall not be used for project specific applications, nor shall they replace site specific investigations or data."

Citation: Draft San Francisco Bay Eelgrass Atlas (October - November 2009). Prepared for California Department of Transportation and National Marine Fisheries Service.

Preprocessing

No preprocessing was needed for this dataset.

SG_12 Texas Christmas Bay seagrass distribution

Texas Parks and Wildlife, Coastal Fisheries Division
Spatial Domain: Regional
Geometry: Polygon
Layer status: New spatial layer
Data: https://tpwd.maps.arcgis.com/apps/webappviewer/index.html?id=af7ff35381144b97b38fe553f2e7b562
Source metadata:
https://tpwd.maps.arcgis.com/apps/webappviewer/index.html?id=af7ff35381144b97b38fe553f2e7b562
Source file name: TPWD_ChristmasBay_WestBay_Seagrass.shp
File folder: TX_ChristmasBay_seagrasses
File name: TX_ChristmasBay_seagrasses.shp
Scale/Resolution: N/A
Version: N/A
Year of Origin: 2016
Year of Publication: 2018

Description

"Areas in West Galveston Bay and Christmas Bay where seagrass is present. Aerial photo interpretation and groundtruthing by Texas Parks and Wildlife Department Coastal Fisheries Division Habitat Assessment Team. The area was ground truthed for the presence of seagrass in

March 2015. Polygons of areas where seagrass is present were digitized in April 2015 through photointerpretation. The underlying imagery used was flown on January 16, 2015."

Citation: N/A

Preprocessing
No preprocessing was needed for this dataset.

SG_13 Seagrass distribution, Veracruz reef system

Mendoza-Martínez et al. 2019. Almacenes de carbono en biomasa de pastos marinos de una laguna arrecifal y su relación con variables ambientales. Serie Síntesis Nacionales. Programa Mexicano del Carbono en colaboración con el Centro Nayarita de Innovación y Transferencia de Tecnología, Universidad Autónoma de Nayarit, Consejo de Ciencia y Tecnología del Estado de Nayarit y Stanford University – México Economía Limpia.

Spatial Domain: Regional
Geometry: Polygon
Layer status: New spatial layer
Data: Dataset provided by Juan Mendoza (juan.mendoza@cinvestav.mx)
Source metadata: http://pmcarbono.org/pmc/publicaciones/count.php?file=EACCIM_Sintesis_Nacional_2019
Source file name: ID41_seagrassCabezo_2017.shp
File folder: VeracruzReef_seagrasses
File name: VeracruzReef_seagrasses.shp
Scale/Resolution: 2 m
Version: N/A
Year of Origin: 2017
Year of Publication: 2020

Description
"The seagrass distribution was carried out with field and satellite information (wordview-2) using spectral algorithms (maximum likelihood) and manual editing. The accuracy of the map was 77%."

Citation: Mendoza-Martínez J. E; Herrera-Silveira J.A. Morales-Ojeda S.M; Ramírez-Ramírez J. 2019. Almacenes de carbono en biomasa de pastos marinos de una laguna arrecifal y su relación con variables ambientales. en: Paz, F., A. Velázquez y M. Rojo (Editores). 2019. Estado Actual del Conocimiento del Ciclo del Carbono y sus Interacciones en México: Síntesis a 2019. Serie Síntesis Nacionales. Programa Mexicano del Carbono en colaboración con el Centro Nayarita de Innovación y Transferencia de Tecnología, Universidad Autónoma de Nayarit, Consejo de Ciencia y Tecnología del Estado de Nayarit y Stanford University-México Economía Limpia 2050-USAID. Texcoco, Estado de México, México. 544 p.

Preprocessing
Classes corresponding to seagrass habitats were extracted from the field "CLASE": Class 2 "low cover of seagrasses <30%"; Class 3 "medium cover of seagrasses 20-70%"; Class 4 "high cover of seagrass >70%".

A new field "Coverage" was created to describe the percentage of seagrass coverages indicated by each value in the field "CLASE".

SG_14 Seagrass distribution, Veracruz reef system 2

Herrera-Silveira, et al. 2018. Evaluación y monitoreo de los pastos marinos en el contexto del proyecto de ampliación del Puerto de Veracruz-Fase I, Programa Mexicano del Carbono-CINVESTAV-IPN Unidad Mérida.
Spatial Domain: Regional
Geometry: Polygon
Layer status: New spatial layer
Data: Dataset provided by Sara Morales (sara.morales@cinvestav.mx)
Source metadata: N/A
Source file name: ID64_PastosmarinosPNSAVsystemPMClabProdCinvestav.gdb
File folder: VeracruzReef2_seagrasses
File name: VeracruzReef2_seagrasses.shp
Scale/Resolution: 2 meters
Version: 1
Year of Origin: 2017
Year of Publication: 2017

Description

"A classification of the reef bottom was carried out on a WordView2 image with 2m resolution. The classification method was Maximum Likelihood by means of supervised classification and feedback with field data. The global accuracy of the seagrass maps of 9 reef lagoons was 92%."

Citation: Herrera-Silveira, J.A., Mendoza-Martínez. J.E., Morales-Ojeda S.M., Iturria-Dawn R., Ramírez-Ramírez J., Osorio-Moreno, I., García T. A., Ramírez, S., Pech, E. & Palafox B. (2018). Evaluación y monitoreo de los pastos marinos en el contexto del proyecto de ampliación del Puerto de Veracruz-Fase I. API-GI-CS-62601-066-17. Programa Mexicano del Carbono-CINVESTAV-IPN Unidad Mérida.

Preprocessing

Nine features contained in the geodatabase that describe seagrass distribution were merged and exported to a new spatial layer.

SG_15 Distribution of seagrasses in eastern Yucatan

National Commission for the Knowledge and Use of Biodiversity (CONABIO)
Spatial Domain: Regional
Geometry: Polygon
Layer status: New spatial layer
Data: http://geoportal.conabio.gob.mx/metadatos/doc/html/mcalgas20gw.html
Source metadata: http://geoportal.conabio.gob.mx/metadatos/doc/html/mcalgas20gw.html
Source file name: mcalgas20gw.shp
File folder: EastYucatan_seagrasses
File name: EastYucatan_seagrasses.shp

Scale/Resolution: 1:20,000
Version: 1
Year of Origin: 2018 - 2019
Year of Publication: 2020

Description

"Polygons representing the distribution of the seagrasses of the species Thalassia testudinum (Tt) Syringodium filiforme (Sf), Halodule wrightii (Hw), mixed vegetation of seagrass (MxPP), Macroalgae (Ma) and mixed vegetation of grasses marine and macroalgae in the eastern coastal area of the state of Yucatan, derived through the records obtained during the year 2018 to 2019 with a Hydroacoustic Echosounder and two Sentinel 2A satellite images from the year 2018."

Citation: Pérez-Espinosa, I., Gallegos-Martínez, M., Cruz-López, M. I., Ressl, R., Valderrama-Landeros, L. H., Herrera-Moro Chao, I, (23/06/2020). Distribución espacial de los pastos marinos y las macroalgas en la zona costera Este del estado de Yucatán, escala: 1:20000, edición: 1. Universidad Autónoma Metropolitana Unidad Iztapalapa. Mexico City, Mexico.

Preprocessing

Classes corresponding to seagrass habitats were extracted from the field "Classes": class 1 "Halodule wrightii"; Class2 "Mix of Thalassia testudinum and macroalgae", Class3 "Mix of seagrasses", Class4 "Mix of seagrasses and macroalgae", Class5 "Syringodium filiforme", Class6 "Thalassia testudinum". Polygons selection was exported to a new spatial layer.

SG_16 Seagrass distribution, Dzilam, Yucatan

Mendoza-Martínez et al. 2018. Almacenes de Carbono en Biomasa de Pastos Marinos Costeros Tropicales de Regiones Cársticas. Serie Síntesis Nacionales. Programa Mexicano del Carbono en colaboración con el Instituto Tecnológico de Sonora.
Spatial Domain: Regional
Geometry: Polygon
Layer status: New spatial layer
Data: Dataset provided by Juan Mendoza (juan.mendoza@cinvestav.mx)
Source metadata: http://pmcarbono.org/pmc/publicaciones/count.php?file=Sintesis_Nacional_2018
Source file name: ID40_BottomSeafloor_seagrassDzilam2015.shp
File folder: DzilamYuc_seagrasses
File name: DzilamYuc_seagrasses.shp
Scale/Resolution: 6 m
Version: N/A
Year of Origin: 2017
Year of Publication: 2018

Description

"The distribution of seagrass was carried out with acoustic information (side scan sonar) and feedback with field information (wordview-2) through principal component analysis of 29 acoustic properties calculated by sonar over training areas of 33 pixels by 17 pixels. (6 m ± 0.5). The accuracy of the map was 89%."

Citation: Mendoza-Martínez J. E; Herrera-Silveira J.A; Liceaga-Correa M. A. Almacenes de Carbono en Biomasa de Pastos Marinos Costeros Tropicales de Regiones Cársticas. En: Paz, F., A. Velázquez y M. Rojo (Ed). 2018, Estado Actual del Conocimiento del Ciclo del Carbono y sus Interacciones en México: Síntesis a 2018. Serie Síntesis Nacionales. Programa Mexicano del Carbono en colaboración con el Instituto Tecnológico de Sonora. Texcoco, Estado de México, México. 686 p.

Preprocessing

As reported by the source, the file contains two grid codes describing "Sand == 1" and "Seagrass == 2". Al polygons corresponding to grid code 2 were selected and exported to a new spatial layer.

SG_17 Aquatic submerged vegetation, Yucatan

National Commission for the Knowledge and Use of Biodiversity (CONABIO)

Spatial Domain: Regional
Geometry: Polygon
Layer status: New spatial layer
Data:
http://www.conabio.gob.mx/informacion/metadata/gis/vas_yucgw.xml?_httpcache=yes&_xsl=/db/metadata/xsl/fgdc_html.xsl&_indent=no
Source metadata:
http://www.conabio.gob.mx/informacion/metadata/gis/vas_yucgw.xml?_httpcache=yes&_xsl=/db/metadata/xsl/fgdc_html.xsl&_indent=no
Source file name: vas_yucuw.shp
File folder: Yucatan_seagrasses
File name: Yucatan_seagrasses.shp
Scale/Resolution: 1:450,000
Version: 1
Year of Origin: 2010 - 2012
Year of Publication: 2018

Description

"Derived from field work in 290 sampling sites on the seabed of the Central-West Region of the State of Yucatán, the submerged aquatic vegetation and the type of associated substrate were identified. The disposition and spatial arrangement of the benthic community defined seven types of habitat along the coastline. Using remote sensing techniques, the map of the 7 submerged habitats of the region was constructed: Bare substrate, Sand with seagrasses, Seagrass meadows, Seagrasses with macroalgae, Macroalgae on sand, Laja with macroalgae and Forest of macroalgae."

Citation: Palafox Juárez E. B., Liceaga Correa M. A. (2013). Vegetación acuática sumergida de la Región Centro - Poniente del estado de Yucatán, escala: 1:450,000. edición: 1. Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional - Unidad Mérida. Mérida, Yucatán.

Preprocessing

Classes corresponding to seagrass habitats were extracted from the field "Habitat": class 1 "seagrass with sand"; Class2 "seagrass with macroalgae", Class3 "seagrass beds".

SG_18 Chelem seagrass distribution
Laboratorio Producción Primaria, CINVESTAV-Unidad Mérida
Spatial Domain: Regional
Geometry: Polygon
Layer status: New spatial layer
Data: Dataset provided by Javier Ramírez (javier.ramirez@cinvestav.mx)
Source metadata: N/A
Source file name: ID71_ChelemLagoonSeagrass2019.shp
File folder: Chelem_seagrasses
File name: Chelem_seagrasses.shp
Scale/Resolution: 10 m
Version: N/A
Year of Origin: 2019
Year of Publication: 2019

Description

"A classification of the seabed was carried out on an atmospherically corrected Sentinel 2A image from the year 2018, water column was corrected as well. The classification method was Maximum Likelihood, supervised classification using information collected in the field and spectral signatures. Overall map accuracy: 85%."

Citation: N/A

Preprocessing
No preprocessing was needed for this dataset.

SG_19 Aquatic submerged vegetation, Campeche
National Commission for the Knowledge and Use of Biodiversity (CONABIO)
Spatial Domain: Regional
Geometry: Polygon
Layer status: New spatial layer
Data: http://geoportal.conabio.gob.mx/metadatos/doc/html/vaspetenesgw.html
Source metadata: http://geoportal.conabio.gob.mx/metadatos/doc/html/vaspetenesgw.html
Source file name: vaspetenesuw.shp
File folder: Campeche_seagrasses
File name: Campeche_seagrasses.shp
Scale/Resolution: 1:350,000
Version: 1
Year of Origin: 2011 - 2017
Year of Publication: 2020

Description

"Polygonal layer representing the distribution of marine grasses and submerged aquatic vegetation in the Petenes Biosphere Reserve, Campeche, derived from the records obtained from 2011 to 2017 with a Hydroacoustic Echosounder and one Sentinel 2A satellite image of the year 2017."

Citation: Pérez-Espinosa, I., Gallegos-Martínez, M. E., Ressl, R., Valderrama-Landeros, L. H., G. Hernández-Cárdenas (2019). Distribución espacial de los pastos marinos y la vegetación acuática sumergida en los Petenes, Campeche, escala: 1:350000. edición: 1. Universidad Autónoma Metropolitana Unidad Iztapalapa. Mexico City, Mexico.

Preprocessing

Classes corresponding to seagrass habitats were extracted from the field "Habitat": Class 1 "Mix of Thalassia testudinum and macroalgae"; Class 2 "Mix of seagrasses", Class 3 "Mis of seagrasses and macroalgae".

SG_20 Laguna de Términos seagrasses distribution

INECC-PNUD México. 2017. Estudio para la identificación, caracterización y evaluación del balance entre las emisiones de GEIs y las zonas de captura y almacenamiento de carbono en zonas de ecosistemas costero/marinos del Pacífico, Golfo de México y la Península de Yucatán (Carbono azul). Programa Mexicano del Carbono, A.C. México.
Spatial Domain: Regional
Geometry: Polygon
Layer status: New spatial layer
Data: Dataset provided by Sara Morales (sara.morales@cinvestav.mx)
Source metadata: http://cambioclimatico.gob.mx:8080/xmlui/handle/publicaciones/253?show=full
Source file name: ID59_LagunaTerminosPastosmarinosPNUD.shp
File folder: LagTerminos_seagrasses
File name: LagTerminos_seagrasses.shp
Scale/Resolution: 30 meters
Version: 1
Year of Origin: 2017
Year of Publication: 2017

Description

"The general objective of this study was to evaluate and quantify the carbon capture and storage capacity of coastal wetlands in Mexico (Blue Carbon), and to provide a first approximation of the GHG capture and emission potential in different regions. The work, entrusted to the Mexican Carbon Program, A.C, was carried out through four studies that were prepared independently but interconnected, which were developed by various teams coordinated by Dr. Jorge Herrera Silveira from CINVESTAV-IPN, Mérida.

A classification of the lagoon bottom was performed on a 30m resolution Landsat8 and Landsat7 image. The classification method was that of Maximum likelihood by supervised classification. Final map accuracy was 74.5%."

Citation: Instituto Nacional de Ecología y Cambio Climático, INECC-PNUD-México (2017). Estudio para la identificación, caracterización y evaluación del balance entre las emisiones de GEIs y las zonas de captura y almacenamiento de carbono en zonas de ecosistemas costero/marinos del Pacífico, Golfo de México y la Península de Yucatán (Carbono azul). Proyecto 85488 "Sexta Comunicación Nacional de México ante la Convención Marco de las Naciones Unidas sobre el Cambio Climático", Programa Mexicano del Carbono, A.C., 415 pp., México.

Preprocessing
Classes corresponding to seagrass habitats were extracted from the field "CLASE", this field is linked to seagrasses species and percentage of seagrass coverage in the attribute table.

SG_21 Los Petenes, Campeche, seagrasses distribution

INECC-PNUD México. 2017. Estudio para la identificación, caracterización y evaluación del balance entre las emisiones de GEIs y las zonas de captura y almacenamiento de carbono en zonas de ecosistemas costero/marinos del Pacífico, Golfo de México y la Península de Yucatán (Carbono azul). Programa Mexicano del Carbono, A.C. México.

Spatial Domain: Regional
Geometry: Polygon
Layer status: New spatial layer
Data: Dataset provided by Sara Morales (sara.morales@cinvestav.mx)
Source metadata: http://cambioclimatico.gob.mx:8080/xmlui/handle/publicaciones/253?show=full
Source file name: ID61_PetenesPastosmarinosPNUD.shp
File folder: LosPetenes_seagrasses
File name: LosPetenes_seagrasses.shp
Scale/Resolution: 30 meters
Version: 1
Year of Origin: 2017
Year of Publication: 2017

Description
"The general objective of this study was to evaluate and quantify the carbon capture and storage capacity of coastal wetlands in Mexico (Blue Carbon), and to provide a first approximation of the GHG capture and emission potential in different regions. The work, entrusted to the Mexican Carbon Program, A.C, was carried out through four studies that were prepared independently but interconnected, which were developed by various teams coordinated by Dr. Jorge Herrera Silveira from CINVESTAV-IPN, Mérida.

A classification of the lagoon bottom was performed on a 30m resolution Landsat8 and Landsat7 image. The classification method was that of Maximum likelihood by supervised classification. Final map accuracy, 73%."

Citation: Instituto Nacional de Ecología y Cambio Climático, INECC-PNUD-México (2017). Estudio para la identificación, caracterización y evaluación del balance entre las emisiones de GEIs y las zonas de captura y almacenamiento de carbono en zonas de ecosistemas costero/marinos del Pacífico, Golfo de México y la Península de Yucatán (Carbono azul). Proyecto 85488 "Sexta

Comunicación Nacional de México ante la Convención Marco de las Naciones Unidas sobre el Cambio Climático", Programa Mexicano del Carbono, A.C., 415 pp., México.

Preprocessing
Classes corresponding to seagrass habitats were extracted from the field "CLASE", this filed is linked to seagrasses species and percentage of seagrass coverage in the attribute table.

SG_22 Bahía Ascensión, QRoo, seagrasses distribution

INECC-PNUD México. 2017. Estudio para la identificación, caracterización y evaluación del balance entre las emisiones de GEIs y las zonas de captura y almacenamiento de carbono en zonas de ecosistemas costero/marinos del Pacífico, Golfo de México y la Península de Yucatán (Carbono azul). Programa Mexicano del Carbono, A.C. México.
Spatial Domain: Regional
Geometry: Polygon
Layer status: New spatial layer
Data: Dataset provided by Sara Morales (sara.morales@cinvestav.mx)
Source metadata: http://cambioclimatico.gob.mx:8080/xmlui/handle/publicaciones/253?show=full
Source file name: ID63_AscensionPastosmarinosPNUD.shp
File folder: BahiaAscensionQRoo_seagrasses
File name: BahiaAscensionQRoo_seagrasses.shp
Scale/Resolution: 30 meters
Version: 1
Year of Origin: 2017
Year of Publication: 2017

Description
"The general objective of this study was to evaluate and quantify the carbon capture and storage capacity of coastal wetlands in Mexico (Blue Carbon), and to provide a first approximation of the GHG capture and emission potential in different regions. The work, entrusted to the Mexican Carbon Program, A.C, was carried out through four studies that were prepared independently but interconnected, which were developed by various teams coordinated by Dr. Jorge Herrera Silveira from CINVESTAV-IPN, Mérida.

A classification of the lagoon bottom was performed on a 30m resolution Landsat8 and Landsat7 image. The classification method was that of Maximum likelihood by supervised classification. Final map accuracy, 45.8%."

Citation: Instituto Nacional de Ecología y Cambio Climático, INECC-PNUD-México (2017). Estudio para la identificación, caracterización y evaluación del balance entre las emisiones de GEIs y las zonas de captura y almacenamiento de carbono en zonas de ecosistemas costero/marinos del Pacífico, Golfo de México y la Península de Yucatán (Carbono azul). Proyecto 85488 "Sexta Comunicación Nacional de México ante la Convención Marco de las Naciones Unidas sobre el Cambio Climático", Programa Mexicano del Carbono, A.C., 415 pp., México.

Preprocessing

Classes corresponding to seagrass habitats were extracted from the field "CLASE": Class1 "TT", Class2 "HW", Class3 "HW-TT", Class 4 and 5 "Algas and TT".

SG_23 Nichupte Lagoon seagrass distribution

Herrera-Silveira et al. 2020. Evaluación y monitoreo de los pastos marinos como parte del servicio: Evaluación de carbono azul del Área de Protección de Flora y Fauna Manglares de Nichupté y Sistema Lagunar Nichupté-Bojórquez. Programa Mexicano del Carbono-CINVESTAV-IPN Unidad Mérida.
Spatial Domain: Regional
Geometry: Polygon
Layer status: New spatial layer
Data: Dataset provided by Juan Mendoza (juan.mendoza@cinvestav.mx)
Source metadata: N/A
Source file name: ID69_NichupteLagoonSeagrass2019.shp
File folder: Nichupte_seagrasses
File name: Nichupte_seagrasses.shp
Scale/Resolution: 10 m
Version: N/A
Year of Origin: 2019
Year of Publication: 2019

Description
"A classification of the lagoon bottom was carried out on a sentinel image 2A of the year 2018. The image was atmospherically corrected, water column was corrected as well. The classification method Maximum likelihood, supervised classification. Final map accuracy, 92%."

Citation: Herrera-Silveira, J.A., Mendoza-Martínez, J.E., Camal-Sosa, J.P., Robles-Toral, P. J. (2020). Evaluación y monitoreo de los pastos marinos como parte del servicio: Evaluación de carbono azul del Área de Protección de Flora y Fauna Manglares de Nichupté y Sistema Lagunar Nichupté-Bojórquez. Programa Mexicano del Carbono-CINVESTAV-IPN Unidad Mérida.

Preprocessing
No preprocessing was needed for this dataset.

SG_24 Yalahau-Holbox seagrass distribution

Herrera Silveira, et al. 2018. Almacenes de carbono en manglar y pastos marinos del área de protección de flora y fauna reserva de Yum Balam. Informe Técnico Final. PMC-CINVESTAV-CEMDA
Spatial Domain: Regional
Geometry: Polygon
Layer status: New spatial layer
Data: Dataset provided by Juan Mendoza (juan.mendoza@cinvestav.mx)
Source metadata: https://www.cemda.org.mx/wp-content/uploads/2018/09/Almacenes-de-Carbono-Azul-Yum-Balam-2018.pdf

Source file name: ID70_YalahauHolboxSeagrass2017.shp
File folder: Yalahau-Holbox_seagrasses
File name: Yalahau-Holbox_seagrasses.shp
Scale/Resolution: 10 m
Version: N/A
Year of Origin: 2017
Year of Publication: 2017

Description

"A classification of the lagoon and marine bottom was carried out on a Sentinel2A image of the year 2017 atmospherically corrected, water column was corrected as well. The classification method was Maximum likelihood, supervised classification. The overall map accuracy, 78%."

Citation: Herrera- Silveira, J. A., Mendoza-Martínez, J. E., Pérez-Martínez, O., Solís-Gamboa, S., García-Trasviña, A., Pech,E., Caamal, J., Rosette, M. (2018). Almacenes de carbono en manglar y pastos marinos del área de protección de flora y fauna reserva de Yum Balam. Informe Técnico Final, PMC-CINVESTAV-CEMDA

Preprocessing

No preprocessing was needed for this dataset.

SG_25 Catoche-Xcalak seagrasses distribution

National Commission for the Knowledge and Use of Biodiversity (CONABIO)
Spatial Domain: Regional
Geometry: Polygon
Layer status: Same as 2017 Blue Carbon Map
Data: http://geoportal.conabio.gob.mx/metadatos/doc/html/habitatv2gw.html
Source metadata: http://geoportal.conabio.gob.mx/metadatos/doc/html/habitatv2gw.html
Source file name: habitatv2gw.shp
File folder: Catoche_Xcalak_seagrasses
File name: Catoche_Xcalak_seagrasses.shp
Scale/Resolution: 1:8,000
Version: 2
Year of Origin: 2017
Year of Publication: 2018

Description

"The map represents the spatial distribution and extension of the benthic habitats of the marine ecosystems of the Mexican Caribbean, covering the shallow waters of the Mesoamerican reef system between Cabo Catoche and Xcalak. The resulting map was generated from the union of the benthic coverage maps and the underwater relief, 50 classes were defined in an area of 1001.3 km2 with an average maximum depth of 18 m."

Citation: Cerdeira-Estrada, S., M.I. Martínez-Clorio, L.O. Rosique-De La Cruz, M. Kolb, A.M. Gonzales-Posada, A. Uribe-Martínez, R. Martell-Dubois, M.I. Cruz-López, R. Ressl (2018). Hábitats Bentónicos de los Ecosistemas Marinos del Caribe Mexicano: Cabo Catoche - Xcalak. 2018,

escala: 1:8000. edición: 2. Comisión Nacional para el Conocimiento y Uso de la Biodiversidad. Mexico.

Preprocessing

All polygons classified as sea grasses ("Comunidad de Pastos Marinos") within Name of coverage ("Nom_Cob") field where selected and exported to a new spatial polygons layer.

SG_26 Isla de Todos los Santos seagrass distribution

Botánica Marina del Instituto de Investigaciones Oceanológicas, UABC
Spatial Domain: Regional
Geometry: Polygon
Layer status: New spatial layer
Data: Dataset provided by José Miguel Sandoval Gil (jmsandovalgil@gmail.com)
Source metadata: http://cimarron.uabc.mx/info_proy.html?clave=403/636/E
Source file name: ID73_Pradera ITS_Feb2020.shp
File folder: TodosSantos_seagrasses
File name: TodosSantos_seagrasses.shp
Scale/Resolution: N/A
Version: N/A
Year of Origin: 2020
Year of Publication: 2020

Description

"Distribution of a perennial meadow of Phyllospadix sp. surrounding the Natural Protected Area of Isla de Todos los Santos, Baja California."

Citation: N/A

Preprocessing

No preprocessing was needed for this dataset.

Seagrasses (Point layers)

SG_27 Global Distribution of Seagrasses

World Conservation Monitoring Center-United Nations Environment Programme
Spatial Domain: Global
Geometry: Point
Layer status: Updated layer from 2017 Blue Carbon Map
Data: https://data.unep-wcmc.org/datasets/7
Source metadata: https://data.unep-wcmc.org/pdfs/7/WCMC_013_014_Global_Distribution_of_Seagrasses.pdf?1617122071
Source file name: WCMC013014-Seagrasses-Py-v7.shp
File folder: WCMC_NorthAmerica_seagrasses
File name: WCMC_NorthAmerica_seagrasses_point.shp
Scale/Resolution: point layer

Version: 7.0
Year of Origin: 2018
Year of Publication: 2020

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 UN Environment World Conservation Monitoring Centre in collaboration with many collaborators (e.g., Frederick Short of the University of New Hampshire), organisations (e.g. OSPAR), and projects (e.g. the European project Mediterranean Sensitive Habitats "Mediseh"), across the globe (full list available in accompanying metadata table within the dataset)."

Citation: UNEP-WCMC, Short FT (2020). Global distribution of seagrasses (version 7.0). Seventh update to the data layer used in Green and Short (2003), Cambridge (UK): UN Environment World Conservation Monitoring Centre.

Preprocessing

The original data set was acquired from the World Conservation Monitoring Centre (WCMC) that integrates two vector layers: polygons and points.

A "selection by attributes process" was performed to isolate all seagrasses point-information corresponding to Canada, the United States and Mexico territories. All points located in the USA territories in the Pacific Ocean as well as Puerto Rico were deselected. A final seagrass layer was exported from the remaining points selection.

SG_28 Canada Eelgrass Locations

Environment and Climate Change Canada
Spatial Domain: Canada
Geometry: Point
Layer status: New spatial layer
Data: https://www.canada.ca/en/environment-climate-change/services/environmental-indicators/eelgrass-canada.html
Source metadata: https://www.canada.ca/en/environment-climate-change/services/environmental-indicators/eelgrass-canada.html
Source file name: eelgrass-sites-in-canada.csv
File folder: Canada_eelgrass_locations
File name: Canada_eelgrass_locations.shp
Scale/Resolution: point layer
Version: N/A
Year of Origin: 1969 - 2019
Year of Publication: 2020

Description

"There is no national monitoring program for eelgrass. Scientists, managers and local communities collect data in different ways for different purposes. The presence of eelgrass can be detected using satellite images and aerial photos, however, for the information compiled to date most of the observations were obtained from field studies.

All Canadian eelgrass sites reported by data holders or found in the scientific literature were included in this indicator. When more than one series of observations existed for the same site, the most recent assessments were used. Site observations may be single observations or include information on multiple observations over time. Eelgrass sites are studied using different methods for different purposes. The indicator reflects the state of knowledge as of March 2020."

Citation: Environment and Climate Change Canada (2020). Canadian Environmental Sustainability Indicators: Eelgrass in Canada.

Preprocessing
No preprocessing was needed for this dataset.

SG_29 Canada Eelgrass Locations 2
Compiled by Matt Christensen (University of British Columbia)
Spatial Domain: Canada
Geometry: Point
Layer status: New spatial layer
Data: Dataset provided by Matt Christensen, University of British Columbia
(mattch85@gmail.com)
Source metadata: N/A
Source file name: ZMarina_2020_05_12.csv
File folder: Canada_eelgrass_locations_2
File name: Canada_eelgrass_locations_2.shp
Scale/Resolution: point layer
Version: N/A
Year of Origin: 1882 - 2013
Year of Publication: 2020

Description
"Dataset containing georeferenced eelgrass samples held by different herbarium collections across Canada."

Citation: Data provided by Matt Christensen (University of British Columbia)

Preprocessing
Data from the input dataset were converted to a point spatial layer based on the coordinates reported for each record. Records not reporting species name were omitted and the rest of the records were exported to a new point spatial layer.

SG_30 BC Howe Sound Eelgrass locations
Howe Sound/Átl'ḵa7tsem Marine Reference Guide
Spatial Domain: Regional
Geometry: Point
Layer status: New spatial layer

Data: Dataset provided by Matt Christensen, University of British Columbia (mattch85@gmail.com)
Source metadata: https://howesoundguide.ca/wp-content/uploads/2020/02/Eelgrass-survey-report_MRG_final.pdf
Source file name: Eelgrass_HowSound.gdb
File folder: BC_HoweSound_seagrass_locations
File name: BC_HoweSound_seagrass_locations.shp
Scale/Resolution: N/A
Version: N/A
Year of Origin: 2019
Year of Publication: 2020

Description

"The Howe Sound/Atl'ka7tsem Marine Reference Guide ("the Guide") is a collaborative and community-led initiative whose goal is to build capacity to protect the human and natural values associated with Howe Sound/Atl'ka7tsem's marine environment in the face of growing anthropogenic pressures. Atl'ka7tsem is the Squamish Nation place name for this region, which sits within their traditional and unceded territory. The Guide is a project on Tides Canada's shared platform.

To achieve its objective, the Guide is creating decision-support tools that effectively arm local decision-makers and community groups with robust data and holistic information about the region's marine realm. One such tool is an online interactive map and database that will include hundreds of data layers about the Sound's marine ecology, human activities, and vulnerability to anthropogenic pressures (e.g. climate change). This map will visualize areas of multi-use and potential conflict, and provide valuable baseline data at a regional scale.

In July 2019, staff from the Guide co-presented with Moonstone Enterprises to the Town of Gibsons' mayor and council about the status of eelgrass restoration and monitoring in the Sound, and announced that the Guide would survey the Sound's mainland eelgrass in the fall of 2019. Given the interest of the Town of Gibsons ("the Town") in updating their foreshore eelgrass distribution maps (which had previously been surveyed in 2004 and 2013 by Dianne Sanford, sole proprietor of Moonstone Enterprises), councilors requested that the Guide survey the Town's recreational water lease using the same methodology. These data will support the Town's capacity to protect critical nearshore ecosystems in the face of growing pressures facing this region."

Citation: Beaty, F., Sanford, D. (2019). Town of Gibsons and Howe Sound / Atl'ka7tsem Eelgrass Survey Report.

Preprocessing

The original data is available in a geodatabase that contains different polygon layers and a point layer with locations of presence of seagrasses. The layer with seagrass distribution and a layer that merges all of them. The layer "Eelgrass_HoweSound_Fieldwork2019_coordinates_WM" was selected and exported to a new points spatial layer.

SG_31 New Brunswick seagrass locations

Frederick T. Short (University of New Hampshire)
Spatial Domain: Regional
Geometry: Point
Layer status: Same as 2017 Blue Carbon Map
Data: Dataset provided by Frederick T. Short (fredtshort@gmail.com)
Source metadata: http://publications.gc.ca/collections/collection_2018/eccc/cw69-5/CW69-5-267-eng.pdf
Source file name: NBZosteraLocations.shp
File folder: NewBrunswick_seagrass_locations
File name: NewBrunswick_seagrass_locations.shp
Scale/Resolution: N/A
Version: N/A
Year of Origin: 1980 - 1985
Year of Publication: 1996

Description

"New Brunswick seagrass locations based on a published report by Hanson, A.R. Distribution of Eelgrass in the Maritime Provinces provided by Dr. Fred T. Short."

Citation: Hanson, A. and Calkins, L. 1996. Wetlands of the Maritime Provinces: Revised Documentation for the Wetlands Inventory. CWS Technical Report No. 267. Canadian Wildlife Service - Environment Canada. Sackville, New Brunswick, Canada. 67 pp."

Preprocessing

No preprocessing was needed for this dataset.

SG_32 Prince Edward Island seagrass locations

Frederick T. Short (University of New Hampshire)
Spatial Domain: Regional
Geometry: Point
Layer status: Same as 2017 Blue Carbon Map
Data: Dataset provided by Frederick T. Short (fredtshort@gmail.com)
Source metadata: http://publications.gc.ca/collections/collection_2018/eccc/cw69-5/CW69-5-267-eng.pdf
Source file name: CAN-PEI-FShort-Zostera_pt.shp
File folder: PEI_seagrass_locations
File name: PEI_seagrass_locations.shp
Scale/Resolution: N/A
Version: N/A
Year of Origin: 1974
Year of Publication: 1996

Description

"Prince Edward Island seagrass locations based on a published report by Hanson, A.R. Distribution of Eelgrass in the Maritime Provinces provided by Dr. Fred T. Short."

Citation: Hanson, A. and Calkins, L. 1996. Wetlands of the Maritime Provinces: Revised Documentation for the Wetlands Inventory. CWS Technical Report No. 267. Canadian Wildlife Service - Environment Canada. Sackville, New Brunswick, Canada. 67 pp.

Preprocessing

No preprocessing was needed for this dataset.

SG_33 Nova Scotia seagrass locations

Frederick T. Short (University of New Hampshire)
Spatial Domain: Regional
Geometry: Point
Layer status: Same as 2017 Blue Carbon Map
Data: Dataset provided by Frederick T. Short (fredtshort@gmail.com)
Source metadata: http://publications.gc.ca/collections/collection_2018/eccc/cw69-5/CW69-5-267-eng.pdf
Source file name: NS_Zostera.shp
File folder: NovaScotia_seagrass_locations
File name: NovaScotia_seagrass_locations.shp
Scale/Resolution: N/A
Version: N/A
Year of Origin: 1974 - 1978
Year of Publication: 1996

Description

"Nova Scotia seagrass locations based on a published report by Hanson, A.R. Distribution of Eelgrass in the Maritime Provinces provided by Dr. Fred T. Short."

Citation: Hanson, A. and Calkins, L. (1996). Wetlands of the Maritime Provinces: Revised Documentation for the Wetlands Inventory. CWS Technical Report No. 267. Canadian Wildlife Service - Environment Canada. Sackville, New Brunswick, Canada. 67 pp.

Preprocessing

No preprocessing was needed for this dataset.

SG_34 National Greenhouse Gasses Inventory

Environmental Protection Agency
Spatial Domain: United States
Geometry: Point
Layer status: New spatial layer
Data: https://github.com/Smithsonian/Coastal-Wetland-NGGI-Data-Public
Source metadata: https://github.com/Smithsonian/Coastal-Wetland-NGGI-Data-Public/raw/master/5-Report/Report%20on%202017%20NGGI%20Update.pdf
Source file name: Coastal Carbon NGGI Data.xlsx
File folder: NGGI_united_states_seagrass
File name: NGGI_united_states_seagrass.shp
Scale/Resolution: point layer

Version: 1
Year of Origin: 2016
Year of Publication: 2017

Description

"The EPA develops an annual Inventory of U.S. Greenhouse Gas Emissions and Sinks that tracks total U.S. emissions and removals by sector, source-sink category, and greenhouse gas. The inventory process follows IPCC Guidance and UNFCCC reporting requirements. In an effort to incorporate the IPCC Wetlands Guidance into the U.S. GHG Inventory, NOAA funded a baseline assessment of U. S. coastal carbon resources, that was incorporated into the 2016 submission of the U.S. National GHG inventory (NGGI). The goal this project was to anticipate the need for improved data management for future revisions of the NGGI, and specifically to convert the spreadsheet data used for the 2016 NGGI to a format that is more sustainable for data entry, flexible for data analysis, and less error prone.

The points sampled in this dataset also describe ecosystem types such as Mangroves, Seagrasses and Saltmarshes."

Citation: EPA (2017) U.S. Greenhouse Gasses Inventory

Preprocessing

The coastal carbon dataset was converted from an excel spreadsheet to a point shapefile based on Latitude and Latitude values per each record, the references coordinate system assigned was WGS84. Seagrass records were selected by "select by attributes" tool. A few points possibly incorrectly georeferenced over the ocean and further inland were deleted manually to keep only the records along the coast of the United States.

SG_35 Pacific Northwest seagrass locations

Prentice, C., et al. 2020. A synthesis of blue carbon stocks, sources, and accumulation rates in eelgrass (Zostera marina) meadows in the Northeast Pacific. Global Biogeochemical Cycles, 34(2)
Spatial Domain: Regional
Geometry: Points
Layer status: New spatial layer
Data: https://agupubs.onlinelibrary.wiley.com/doi/abs/10.1029/2019GB006345
Source metadata: https://agupubs.onlinelibrary.wiley.com/doi/abs/10.1029/2019GB006345
Source file name: ID43_Asynthesis_samples_blue_carbon_stocks_bibliographic.shp
File folder: Pacific_Northwest_seagrass_locations
File name: Pacific_Northwest_seagrass_locations.shp
Scale/Resolution: N/A
Version: N/A
Year of Origin: 2015 – 2019
Year of Publication: 2020

Description

"Information about the sequestration rates and sources of carbon to local sediments remains sparse. Estimates of sediment OC stocks and sequestration rates from 139 cores collected from

temperate seagrass (Zostera marina) meadows in Alaska, British Columbia, Washington, and Oregon."

Citation: Prentice, C., Poppe, K. L., Lutz, M., Murray, E., Stephens, T. A., Spooner, A., & Short, F. T. (2020). A synthesis of blue carbon stocks, sources, and accumulation rates in eelgrass (Zostera marina) meadows in the Northeast Pacific. Global Biogeochemical Cycles, 34(2).

Preprocessing
Seagrass sample location were elected and georeferenced into a point spatial layer.

SG_36 North Pacific coast seagrass locations

Kauffman, J. Boone, et al. "Total ecosystem carbon stocks at the marine-terrestrial interface: Blue carbon of the Pacific Northwest Coast, United States." Global Change Biology 26.10 (2020): 5679-5692.
Spatial Domain: Regional
Geometry: Points
Layer status: New spatial layer
Data: Dataset provided by Craig Cornu (cecornu@gmail.com)
Source metadata: https://onlinelibrary.wiley.com/doi/10.1111/gcb.15248
Source file name: ID67_pointFor_Boone_Kauffman_paperresearch.shp
File folder: North_Pacific_coast_seagrass
File name: North_Pacific_coast_seagrass.shp
Scale/Resolution: Point data
Version: N/A
Year of Origin: 2020
Year of Publication: 2020

Description
"Dataset derived from Kauffman, J. Boone, et al. Total ecosystem carbon stocks at the marine-terrestrial interface: Blue carbon of the Pacific Northwest Coast, United States. Global Change Biology 26.10 (2020): 5679-5692."

Citation: Kauffman, J. et al. (2020). Blue carbon of the Pacific Northwest Coast, United States. Global Change Biology 26, 10, 5679-5692.

Preprocessing
The original dataset was georeferenced and converted into spatial points by the Mexican Carbon Program. This dataset provides a set of points that describe locations of seagrasses and saltmarshes in the North Pacific coast of the United States. Seagrass points where selected and exported to a new spatial layer.

SG_37 Washington coast seagrass locations

Washington State Department of Natural Resources Submerged Vegetation Monitoring Program
Spatial Domain: Regional
Geometry: Point

Layer status: New spatial layer
Data: https://fortress.wa.gov/dnr/adminsa/gisdata/datadownload/SVMP_distribution.zip
Source metadata: https://fortress.wa.gov/dnr/adminsa/gisdata/datadownload/SVMP_distribution.zip
Source file name: SVMP_distribution.gdb
File folder: Washington_coast_seagrass_locations
File name: Washington_coast_seagrasses_locations.shp
Scale/Resolution: N/A
Version: N/A
Year of Origin: 2000 – 2019
Year of Publication: 2020

Description

"The Submerged Vegetation Monitoring Program (SVMP) has conducted annual monitoring of the status and trends of native seagrass in greater Puget Sound since 2000. The native seagrasses monitored include the dominant eelgrass (Zostera marina) as well as the less abundant surfgrass (Phyllospadix scouleri and P. serrulatus). This geoDataset is the central component of the 2000-2019 Puget Sound eelgrass monitoring dataset. This dataset is produced by the Submerged Vegetation Monitoring Program (SVMP) within the Washington Department of Natural Resources.

The site_pt layer includes a point for every site in the sampling frames (flats and fringe) in use since 2001, the fringe orphans, and the sites outside the SVMP study area in south Puget Sound. In addition, there are points for three sites from the site_poly_special layer that do not coincide with the SVMP sampling frames (outf455, outf457, outf458). These three additional sites have been sampled but the surrounding SVMP sites have not been sampled. Points were not included for sites outside the SVMP frames where the surrounding SVMP sites have been sampled."

Citation: WA-DNR, (2020). Submerged Vegetation Monitoring Program 2000-2019 Database, Washington Department of Natural Resources, Aquatic Resources Division, Olympia, WA, USA.

Preprocessing

All points classified as different than "no_grass" or "no_data" class in the "site_pt" layer within the source geoDataset were selected and exported to a new points spatial layer.

SG_38 Pastos marinos en la Península de Yucatán

National Commission for the Knowledge and Use of Biodiversity (CONABIO) - UAM-I
Spatial Domain: Regional
Geometry: Point
Layer status: New spatial layer
Data: Provided by Iliana Pérez Espinosa (CONABIO)
Source metadata: N/A
Source file name: EspeciesPY.shp
File folder: Mex_conabio_seagrass
File name: Mex_conabio_seagrass.shp
Scale/Resolution: N/A
Version: N/A

Year of Origin: 2013 – 2018
Year of Publication: 2021

Description

"Geographic coordinates of sea grasses visual observations at various locations in the states of Campeche, Yucatán and Quintana Roo."

Citation: Pérez-Espinosa, I & Gallegos-Martínez, M., (2021). Pastos marinos en la Península de Yucatán. National Commission for the Knowledge and Use of Biodiversity (CONABIO) - UAM-I

Preprocessing

All class names reported as species abbreviations were described as complete species name in a new field. According to information reported by the author of this dataset, the "Year of origin" attribute was defined on a new attribute field.