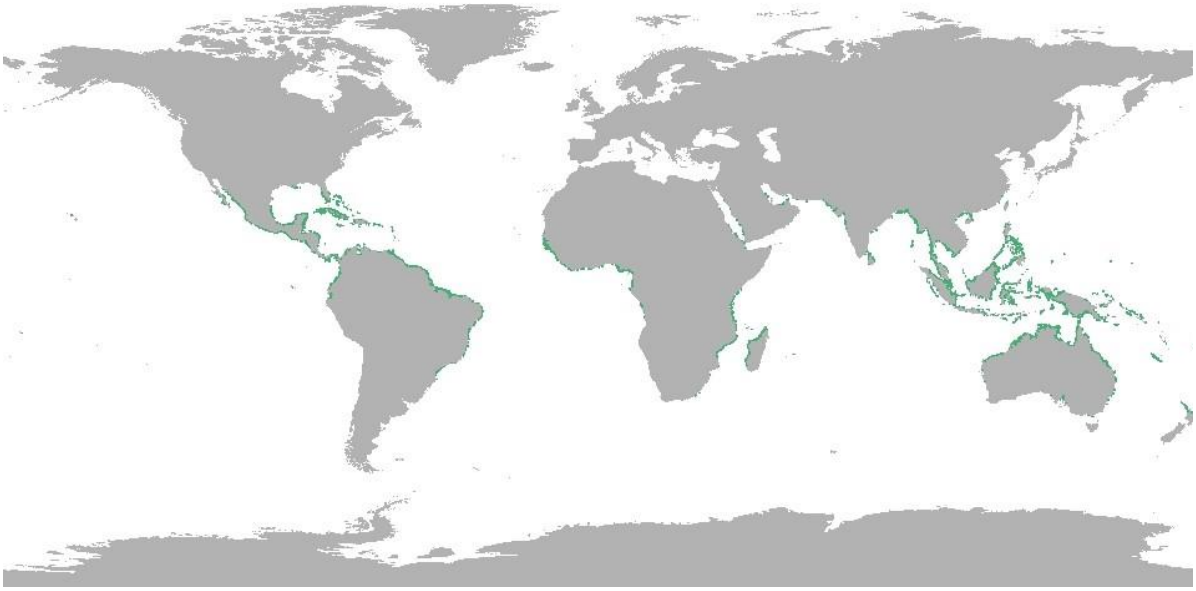
A global biophysical typology of mangroves



Description:	The typology classifies the mangroves of the world based on their geomorphic and sedimentary setting. The typology also divides the global mangrove extent into 4,318 macroscale units. The dataset contains five layers. One each for the 1996, 2007, 2010 and 2016 Global Mangrove Watch mangrove extents and a composite layer that combines those four timesteps (i.e., the maximal extent).
Citation:	Worthington, T.A., zu Ermgassen, P.S.E., Friess, D.A., Krauss, K.W., Lovelock, C.E., Thorley, J., Tingey, R., Woodroffe, C.D., Bunting, P., Cormier, N., Lagomasino, D., Lucas, R., Murray, N.J., Sutherland, W.J., Spalding, M., 2020. A global biophysical typology of mangroves and its relevance for ecosystem structure and deforestation. Sci. Rep. 10, 14652. https://doi.org/10.1038/s41598-020-71194-5
Temporal range:	1996 - 2016
Geographic Range:	Global
Supplementary information:	The methods used to create this dataset are described in detail in the main document and supplemental information of Worthington et al. (2020)
Purpose of creation:	The dataset provides a framework for considering geomorphic and sedimentary setting when quantifying mangrove ecosystem services or restoration potential.

Creation methodology:	Geomorphic features within the mangrove regions of the world were identified using a high-resolution coastline. These features were assigned to the classes deltas, estuaries, lagoons and bays, using a combination of existing information, a random forest model driven by the shape of the geomorphic feature and expert knowledge. Patches from the 1996, 2007, 2010 and 2016 Global Mangrove Watch mangrove extents were then associated to the geomorphic features. Mangrove patches were classified as deltaic, estuarine, lagoonal or open coast (associated with bays, or no coastal embayment), termed typological units. Mangrove patches were also assigned to a sedimentary setting using a model combining inorganic suspended particulate matter concentration and tidal amplitude. All deltaic and estuarine units were classed as terrigenous (i.e. dominated by minerogenic sedimentation from terrestrial sources). Whereas, lagoonal or open coast patches could be classed as terrigenous or carbonate (i.e. dominated by calcareous sedimentation).
Version:	v2.2
Data lineage:	The typology was derived from the 1996, 2007, 2010 and 2016 Global Mangrove Watch extent layer (https://data.unep-wcmc.org/datasets/45)
Category:	Biogenic habitat
Keywords:	coastal, mangrove, geomorphic, typology, sedimentary
Similar datasets:	GMW-001
Limitations:	The dataset inherits errors of extent and change from the Global Mangrove Watch mangrove datasets. The dataset is also limited in that composite settings do not fit within the current typology; and classification of geomorphic features at the boundaries between types is challenging.
Maintenance frequency:	Data are updated in intervals that are uneven in duration, and will be updated in line with the Global Mangrove Watch extent dataset (https://data.unep-wcmc.org/datasets/45)
Main access/use constraint:	Creative Commons Attribution 4.0 Unported (CC BY 4.0). See https://creativecommons.org/licenses/by/4.0/ for details. Free to (1) copy and redistribute the material in any medium or format, (2) remix, transform, and build upon the material for any purpose, even commercially. You must give appropriate credit, provide a link to the license, and indicate if changes were made. You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use. You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits.
Other access/use constraints:	None
Organisation type:	party that created the resource

Contact Organisation:	The Nature Conservancy		
City:	Cambridge		
E-mail:	taw52@cam.ac.uk		
Data format(s):	Vector (polygon); .shp	Dataset size (uncompressed):	1.66 GB
Webpage and/or download:	https://data.unep-wcmc.org/datasets/48		
Other webpage:			
Web map service:	https://arcg.is/10j9yW		
Factsheet:	https://www.biodiversitya-z.org/content/mangrove--2		
Resolution, scale:	0.8 arc seconds	Reference system:	WGS 1984
West bounding:	-175.3	East bounding:	179.9
South bounding:	38.8	North bounding:	33.8
Metadata standard:	ISO 19115	Date of metadata:	06/11/2020