A new version of the Maritime Boundaries Geodatabase

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The United Nations (UN) Convention on the Law of the Sea (UNCLOS), which was signed in 1982 and came into force in 1994, defines a series of maritime zones (internal waters, archipelagic waters, territorial sea, contiguous zone, exclusive economic zone and continental shelf) and establishes the degree of rights and obligations of a country in each of those areas.

The Exclusive Economic Zone (EEZ) is the basic geo-unit to be considered with regards to a country's management of marine natural resources. This includes sectors such as mineral exploration and exploitation, energy, fisheries, biodiversity and species conservation, etc. Despite the strategic significance of EEZs, a standard georeferenced product with maritime boundaries was not available at the global level (Claus et. al, 2014), until it was developed and made available by the Flanders Marine Institute (VLIZ) in 2006 (Deckers and Vanden Berghe, 2006).

The product developed at VLIZ consisted of two GIS layers providing both the maritime boundaries (lines) and the EEZs (polygons). The layers were regularly updated with 8 consecutive versions published between 2006 and 2014. Version 9 was launched by the VLIZ-hosted portal Marineregions.org in October 2016 and implied major new developments and features. Straight and archipelagic baselines were included, together with remaining areas defined by UNCLOS: internal waters, archipelagic waters, territorial seas and contiguous zones.

To create the new Maritime Boundaries Geodatabase (Flanders Marine Institute, 2016), more than 22000 point data were collected and converted to lines to delineate baselines and treaties. The main source for these coordinates was the UN repository of all the claims from UNCLOS's signatories. When there are no treaties available for two territories a median line is calculated following the equidistance principle. This is achieved by drawing Thiessen polygons rooted on points along both the straight and normal baselines. The seaward outermost boundary for the EEZ, the contiguous zone and the territorial sea were drawn by calculating a buffer distance of 200, 24 and 12 nautical miles respectively, measured from the baselines.

The Maritime Boundaries is the most popular product available at Marineregions.org. In all its different versions, the product has been downloaded a total of 36674 times (as of end 2016), representing an average 64% of the total downloads. These boundaries and other derived products are used in many projects related to bio-geographic research and conservation, such as the World Register of Marine Species (WoRMS), The Sea Around Us, Global Fishing Watch or The Ocean Health Index.

References
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