



MARITIME FORUM

Map of the Week – EMODnet Bathymetry world base layer

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The map of the week shows the new EMODnet Bathymetry world base layer.

You may have noticed that the European Atlas of the Seas received a big revamp last week. Among [many other new features](#) [2], this release brought a new background map to the Atlas: the EMODnet Bathymetry world base layer. Bathymetry refers to the depth of the ocean which reveals a fascinating seafloor topography of magnificent mountain ranges, trenches, volcanoes and canyons, hidden below the waves. Bathymetry is the foundation for much of ocean science and policy. For example, it is the basis of nautical charts which ensure safe ship navigation and it is vital information for understanding ocean circulation, environmental change and future climate predictions.

Up to this day, only 20% of the ocean's bathymetry has been accurately mapped^[1]. For much of human history, the only way to collect depth information, was through depth soundings, in which a weighted rope or cable was lowered down to the seabed from a ship. As this laborious process only allowed to get a depth measurement in a single location, you can imagine it was not straightforward to create an accurate map of the ocean floor. Since the 1930s, acoustic depth soundings, by which depth is derived from the time it takes for a soundwave to be reflected from the seabed back to a ship, caused a true revolution and allowed for the first time to map the ocean floor in high resolution. However, since this method is expensive and can only map a small region of the vast ocean at a time, many gaps remain. While satellite radar measurements, which allow estimating ocean depth from small undulations of the sea surface caused by the gravitational attraction of underlying topography, have been able to fill these gaps, this method only allows for a low-resolution map of the world ocean.

The [International Hydrographic Organization](#) [3] (IHO) and the [Intergovernmental Oceanographic Commission](#) [4]'s (IOC) [General Bathymetric Chart of the Oceans \(GEBCO\)](#) project [5], has combined available acoustic soundings and satellite-derived gravity data to produce a publicly available world ocean bathymetric map. The [2020 version of this chart](#) [6] has a

resolution of 1/4 arc minute (circa 460 m at the equator). The EU's [European Marine Observation and Data Network \(EMODnet\) project](#) [7], harmonized all available acoustic bathymetric surveys to produce a bathymetric map with a higher resolution of 1/16 arc minute (circa 115 m at the equator) covering the European marine regions. This product is also openly available from the [EMODnet Bathymetry portal](#) [8]. Recently, EMODnet Bathymetry harmonized its European map with the global GEBCO chart to produce the [highest resolved bathymetric world map](#) [9], the EMODnet Bathymetry world base layer. To celebrate this achievement, we are featuring this new background map as our map of the week.

But the work is not done and the bathymetry in many regions remains uncertain. The [Nippon Foundation-GEBCO Seabed 2030 Project](#) [10], in [cooperation with EMODnet Bathymetry](#) [11], has set the ambitious goal to map 100% of the ocean floor by 2030!

[Access the map](#) [12]

The data in this map are provided by [EMODnet Bathymetry](#) [13].

[1] https://seabed2030.gebco.net/about_us/ [14]

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[1] <https://webgate.ec.europa.eu/maritimeforum/en/history/5131>

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[3] <https://iho.int/>

[4] <http://ioc-unesco.org/>

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[6] <https://download.gebco.net/>

[7] <https://www.emodnet.eu/en>

[8] <https://portal.emodnet-bathymetry.eu/?menu=19>

[9]

<https://www.emodnet.eu/en/emodnet-bathymetry-now-offers-highest-resolved-bathymetric-worldwide-layout>

[10] <https://seabed2030.gebco.net/>

[11]

<https://www.emodnet-bathymetry.eu/news/news-details/memorandum-of-understanding-signed-between-seabed-2030-initiative-and-emodnet-bathymetry/61>

[12]

https://ec.europa.eu/maritimeaffairs/atlas/maritime_atlas/#lang=EN;p=w;bkgd=1;theme=;c=2183340.4815350845,3824180.022722984;z=3;e=t

[13] <https://www.emodnet-bathymetry.eu/>

[14] https://seabed2030.gebco.net/about_us/