

EMODnet Unveils New Pan-European Shoreline-migration Map



The new EMODnet Geology shoreline-migration map has been released. It is based on field measurements and aerial photography, and covers time periods up to decades. This technique is particularly valuable for mapping cliffs, which are prevalent along European coastlines, particularly since state-of-the-art satellite

monitoring methods are not yet suitable for imaging erosion of non-sandy types of coastline.

Our coasts play a key role in Europe's economy, safety, coastal-zone environment and well-being. One of its key characteristics, the ever-changing land-sea interface, has been monitored in the field and from the air for more than a century, and with satellites since the 1970s. This shoreline is continuously shaped by wind, waves, tides and human influence. Shoreline change is strongly influenced by climate change. Coastal erosion in particular is exacerbated by global sea-level rise, which will put Europe's shorelines – and others around the world – at increasing risk in the coming years. Knowing how, and at what rate, our coasts are changing is a crucial step toward their sustainable management, supporting knowledge-based decision-making and thus underpinning the [EU Strategy on adaptation to climate](#). This information helps the EU move toward becoming a climate-resilient society.

Determining Large-scale Coastal Behaviour

The new EMODnet Geology shoreline-migration map, freely accessible from the [EMODnet Geology portal](#), allows policymakers, together with national and regional coastal managers, to determine large-scale coastal behaviour and to identify areas of rapid change. It is based on field measurements and aerial photography, and covers time periods up to decades.

"Effective planning for adaptation to climate change must be underpinned by high-quality data. The new EMODnet shoreline-migration map provides the most up-to-date and comprehensive information for coastal and marine industries, decision-making bodies and scientific research. Providing pan-European, regional and local data, it helps enable efficiencies in planning and decision-making processes for a sustainable future," stated Cherith Moses, Professor of Geomorphology at Edge Hill University, UK.

This important data product allows users to visualize pan-European coastal behaviour at different spatial scales. A built-in search and zoom functionality enables online users to distinguish areas of landward migration (erosion or submergence), stability and seaward migration (accretion or emergence). The underlying downloadable dataset offers additional information on measured or derived annual migration rates. The map is an update of the 2004 EUROSION map, now with additional spatial coverage. It should be seen as a companion product to the [EMODnet shoreline-migration map](#) based on satellite data, published in 2019.

□ Pan-European overview map of shoreline migration (red = landward; yellow = stable; green = seaward). This map is based on field data and aerial photography.

The map also provides the general public with a useful insight into one of Europe's most obvious climate-change effects: loss of land through coastal erosion. Most importantly, field and satellite data can now be compared on a pan-European scale, highlighting corresponding spatial patterns as well as prominent discrepancies that require further work to optimize and align the respective methodologies.

“This new EMODnet map adds real value for understanding cliffed coasts as well as muddy shorelines. While the holy grail for consistent and reliable shoreline-migration mapping has yet to be found, this is a great step in the right direction, complementing pan-European satellite-coverage data products”, commented Sytze van Heteren from the Geological Survey of the Netherlands.

<https://www.hydro-international.com/content/news/emodnet-unveils-new-pan-european-shoreline-migration-map>
