

North West European Shelf forecast products: improvements and major achievements since the beginning of the Copernicus marine service.

The North West European Shelf provides ocean, wave, and biogeochemical forecast products for the shelf seas. All the components of the systems have been improved during the last five years, considering the user's feedbacks and requirements. The accuracy of the initial conditions of all the components have been improved, increasing the type of observations and variables assimilated in both the physical and the biogeochemical models. The resolution of the model has been increased, from 7 to 1.5 km, for resolving the mesoscale and improving the resolution of the coastline. The wave component, added in 2017, has been recently coupled with the ocean, improving the ocean momentum budget equation.

It is of paramount importance to be able to understand the impact of these evolutions on the quality of the products delivered to the users. New verification methods have been developed for addressing this issue and a new method based on spatial neighbourhood methods has been developed and applied to inter-compare the accuracy of forecasting products at different resolutions.

The focus of this study is on the evolution of the forecast products in the period 2015-2020, their impact on the product quality, and on the future challenges for further improvement of the Copernicus Marine products for the West-European Shelf Seas.

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