



## The current status and future developments of the UK Met Office operational coupled ocean-atmosphere numerical weather prediction system

The Met Office operational short-range global coupled numerical weather prediction (NWP) system, which produces both deterministic and ensemble forecasts, has been fully coupled to an interactive ocean and sea-ice model since 2022. Here we present a brief description of the current status of this system, which includes weakly coupled data assimilation. Updates to the physical NEMO ocean and sea ice model in the coupled system are currently being trialled for operational implementation. A brief description of the ocean component of this model along with updates to the ocean data assimilation configuration will be presented, showing results validating the ocean performance of this updated coupled system, in comparison to the current system. Finally, a discussion of longer-term future coupled system developments will be presented which includes developments towards a go-anywhere global ocean forecasting capability and a full ocean ensemble initialisation.

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