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Ecosystem Models as Support to Eutrophication Management in the North Atlantic Ocean (EMoSEM)

Geneviève Lacroix (1), Gilles Billen (2), Xavier Desmit (1), Josette Garnier (2), Nathalie Gypens (3), Christiane Lancelot (3), Hermann Lenhart (4), Hans Los (5), Marcos Mateus (6), Alain Ménesguen (7), Ramiro Neves (6), Tineke Troost (5), and Johan van der Molen (8)

(1) Management Unit of the North Sea Mathematical Models (MUMM), Royal Belgian Institute of Natural Sciences (RBINS), Brussels, Belgium, (2) UMR Sisyphe, UPMC/CNRS, Paris, France, (3) Ecologie des systèmes aquatiques (ESA), Université Libre de Bruxelles (ULB), Brussels, Belgium, (4) Research Group Scientific Computing, Universität Hamburg, Hamburg, Germany, (5) Deltares, Delft, The Netherlands, (6) MARETEC, Instituto Superior Técnico, Lisboa, Portugal, (7) Département Dynamiques de l'Environnement Côtier, IFREMER, Plouzané, France, (8) CEFAS, Lowestoft, United Kingdom

One of the leading challenges in marine science and governance is to improve scientific guidance of management measures to mitigate eutrophication nuisances in the EU seas. Existing approaches do not integrate the eutrophication process in space (continuum river-ocean) and in time (past, present and future status). A strong need remains for (i) knowledge/identification of all the processes that control eutrophication and its consequences, (ii) consistent and harmonized reference levels assigned to each eutrophication-related indicator, (iii) identification of the main rivers directly or indirectly responsible for eutrophication nuisances in specific areas, (iv) an integrated transboundary approach and (v) realistic and scientific-based nutrient reduction scenarios.
The SEAS-ERA project EMoSEM aims to develop and combine the state-of-the-art modelling tools describing the river-ocean continuum in the North-East Atlantic (NEA) continental seas. This will allow to link the eutrophication nuisances in specific marine regions to anthropogenic inputs, trace back their sources up to the watersheds, then test nutrient reduction options that might be implemented in these watersheds, and propose consistent indicators and reference levels to assess the Good Environmental Status (GES).
At the end, EMoSEM will deliver coupled river-coastal-sea mathematical models and will provide guidance to end-users (policy- and decision makers) for assessing and combating eutrophication problems in the NEA continental waters.