EMODnet

European Marine Observation and Data Network

EMODnet Biology

EASME Identifier

Start date of the project: 19/04/2017

EMODnet Phase III

D4.2: Set of relevant baselayers from EMODnet projects for environmental modelling

Reporting period *(if applicable)*: 19/04/2017 – 19/04/2018

The European Marine Observation and Data Network (EMODnet) is financed by the European Union under Regulation (EU) No 508/2014 of the European Parliament and of the Council of 15 May 2014 on the European Maritime and Fisheries Fund.

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Document info

Title [ref]*	D4.2: Set of relevant baselayers from EMODnet projects for environmental modelling
WP title [ref]*	WP 4: Data product creation
Task [ref]*	
Authors [affiliation]	Peter Herman
Dissemination level	Public
Submission date	17/04/2018
Deliverable due date	19/04/2018

*[ref] refers to the corresponding abbreviated name of the Deliverable (or WP, or Task...), if appropriate

[1] The disclaimer is needed when the document is published

Contents

1 Overview of environmental layers useful for species distribution models

This list contains a number of environmental layers that can be useful for the construction of species distribution models, potentially enhancing the quality of gridded data products from EMODNET Biology. For most of these layers, a clear source within EMODNET has been identified, but coverage of the entire EU marine zone is not always available at present. However, for the areas where most biological data are available (North Sea, Baltic, North Atlantic, parts of the Mediterranean) the environmental layers are, in general, available. Coverage by environmental data is usually more extensive than coverage by biological data.

1.1 Bathymetry and derived variables

- basic layer: EMODNET Bathymetry global EU model at 250 m resolution

Derived from this by GIS calculations:

  - E-W aspect
  - N-S aspect
  - slope
  - concavity of the seafloor
  - plan curvature
  - profile curvature

1.2 Physics

- EMODNET Physics: climatologies and 3-D gridded data products on:
  - temperature
  - salinity
- COPERNICUS model outputs on:
  - currents + current-induced bottom shear stress
  - waves + wave-induced bottom shear stress
  - primary production from biogeochemical models
- EMODNET Physics + COPERNICUS remote sensing products on:
  - Sea Surface Temperature
  - fraction of time with cloud cover
  - Diffuse light attenuation coefficient
  - Photosynthetically available radiation
  - Concentration of suspended particulate matter
  - chlorophyll-a in surface waters
- Unclear: sources on stratification parameters, including intermittency, strength, duration of stratified season

1.3 Geology

- EMODNET Geology for gridded products on:
  - rocky versus soft sediment
  - subdivisions for rocky substrates (type of rock)
  - for soft sediments: data on sediment grain size distribution (Folk classification)
  - geological data that further characterize the sediment

1.4 Chemistry

- EMODNET Chemistry for gridded products on:
  - Chlorophyll a concentration
  - Dissolved oxygen concentration
  - Nitrate concentration
  - Phosphate concentration
  - Silicate concentration
- Unclear: information on:
  - pH
  - Dissolved Inorganic Carbon

1.5 Habitats

- EMODNET habitats for information on:
  - Biogenic structures: seagrass meadows, oyster reefs, saltmarshes,…
  - valuable and/or vulnerable habitats
  - exceptional features of importance to biodiversity