JRC Dataset

EMIS - Mediterranean Sea 50 years mean spatial eutrophication map, as captured by the TRIX indicator

Description:

Mediterranean Sea 50 years mean spatial eutrophication map, as captured by the TRIX indicator. (c.f.:Alternative assessments of large scale Eutrophication using ecosystem simulations: hind-casting and scenario modelling - STIPS Adolf, MACIAS MOY Diego, GARCIA GORRIZ Elisa, MILADINOVA-MARINOVA Svetla. EUR 27904. Luxembourg (Luxembourg), Publications Office of the European Union. JRC101277. doi:10.2788/156650 (http://publications.jrc.ec.europa.eu/repository/handle/JRC101277))

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Stips, Adolf(2016): EMIS - Mediterranean Sea 50 years mean spatial eutrophication map, as captured by the TRIX indicator. European Commission, Joint Research Centre (JRC) [Dataset] PID: http://data.europa.eu/89h/93d07f10-7757-485f-bb8e-3160536b97f8

Keywords:

HEAT, Habitats and biotopes, MSFD, TRIX, coastal environment, eutrophication, marine environment

Related resources:

Data access

EMIS Marine Maps - WMS

Web Map Service (WMS) - GetMap

https://marinemaps.jrc.ec.europa.eu/geoserver/wms?version=1.3.0&request;=getmap&format;=image/png&width;=900 &height;=368&lay

EMIS Marine Maps - WMS

Web Map Service (WMS) - GetCapabilities

https://marinemaps.jrc.ec.europa.eu/geoserver/ows/?service=WMS&version;=1.1.0&request;=GetCapabilities

EMIS Marine Maps Platform (SDI)

The dataset is available for download as GeoTIFF, png, KML,...

https://marinemaps.jrc.ec.europa.eu/layers/geonode:trix_medsea_grid

Other resources

EMIS Marine Maps - GIS viewer

EMIS Marine Maps: The Spatial Data Infrastructure (SDI) for EMIS is proposed as a marine maps platform to support the assessment and the monitoring of the environmental state and marine biodiversity of the European regional seas.

https://marinemaps.jrc.ec.europa.eu

Additional information:

Last Modified: 2016-04-13

Issue date: 2016-04-13

Landing page: http://emis.jrc.ec.europa.eu/

Temporal coverage: From: 1960-01-01 – To: 2010-12-31

Language: English

Data theme(s): Environment

EuroVoc domain(s): 52 ENVIRONMENT

EuroVoc concept(s): biotope

Geographic information:

Lineage: The Marine Strategy Framework Directive (MSFD) aims to achieve Good Environmental Status (GES) of the EU's marine waters by 2020, and to protect the marine resources upon which economic and social activities depend. The progress achieved in marine modelling gives the possibility of more realistic simulations of many aspects of the marine environment. Therefore, now the use of marine modelling can support the assessment process of the marine environment as foreseen in the MSFD by defining baselines, addressing data gaps and allowing for scenario simulations. We are here focusing on demonstrating the usefulness of ecosystem model data for assessing eutrophication aspects, as covered by MSFD descriptor D5. The assessments are based on calculating indicators, namely first the long established trophic indicator TRIX and for comparison the more recent HEAT indicator (as applied by HELCOM). We show that the use of ecosystem model data allows identifying sensitive areas and assessing long term trends in the development of eutrophication in 2 major European water bodies. Specifically strong spatial gradients from the open sea to the coast are detected in many variables and indicators. The available high resolution of the simulations allows the identification of such spatial gradients. The investigation of long term trends point to slightly increasing eutrophication problems in the Mediterranean Sea and the Baltic Sea. This increasing eutrophication trend seems to be caused by increasing nitrate concentrations in the Mediterranean Sea. However, in the Baltic Sea the increase in TRIX and HEAT indicators seems to be due to increasing phosphate concentrations. We performed scenario simulations for investigating the impact from changing climate variability and from reducing nutrient inputs in the Mediterranean Sea. Reduced climate variability (by using climatological atmospheric forcing) would lead to increasing eutrophication problems in many coastal regions and especially in the Aegean Sea. The proposed nutrient reduction scenario achieves surprisingly minor overall improvements, which are clearly identifiable only in the Adriatic Sea and the Aegean Sea, regions actually suffering from the most pronounced nutrient inputs. Finally possible methodological improvements and a way forward are discussed. We conclude that further nutrient reductions in the Mediterranean Sea and in the Baltic Sea will be necessary to reduce the eutrophication impact on marine and coastal ecosystems. However, it seems illusionary to aim at fully restoring past ecosystems, rather ecosystem management should develop iterative adaptation strategies to deal with shifting baselines and to maintain ecosystem services at a sustainable level. EUR 27904. Luxembourg (Luxembourg), Publications Office of the European Union. JRC101277. doi:10.2788/156650 (http://publications.jrc.ec.europa.eu/repository/handle/JRC101277).

Geographic bounding box: 47° N, 38° E, 29° S, -6° W

Coordinate Reference System: ETRS89