Thursday, October 11
Poster Session 4
10:30–12:00

Poster 235

PRIMARY PRODUCTION FROM SATELLITE FOR DEFINING GOOD ECOLOGICAL STATUS IN NW EUROPEAN SEAS

Phytoplankton primary production (PP) is the base of the marine food web and is a critical component of the carbon cycle and a key driver for transferring carbon the food chain. Changes in phytoplankton PP are driven by a range of different environmental factors including light, nutrients and temperature. There is a growing consensus that phytoplankton production is an important indicator of Good Environmental Status, but there is currently no coordinated monitoring of PP in Europe and Globally. Over the past two decades there has been a concerted effort to develop accurate satellite models of PP to fill this data void which has been spear-headed by NASA's satellite PP model inter-comparison. In this paper, we use one of the most accurate satellite PP models to define baseline conditions of Good Ecological Status using 20 years of merged ocean colour satellite data from the Copernicus Marine Environment Monitoring Services (CMEMS) in North West European waters. The magnitude and shape of the PP climatology is used to define ecological classes that have dynamic temporal boundaries. The Celtic Sea, English Channel & Outer Hebrides have higher baseline thresholds and a different phenology to the Northern & southern North Sea. All regions exhibited a similar pattern in PP with a decline from 1998 to 2007, followed be a recovery from 2009 to 2014 and a further decline from 2014 to present. Within each ecological class, we assess the multi-decadal trends in PP in relation to changes in atmospheric and hydrodynamic conditions over the region.

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