

An integrated approach for ocean health information service in regional sea scale

Jun She, Danish Meteorological Institute, js@dmi.dk

Abstract

A healthy ocean is essential for human wellbeing. Marine pollution, overfishing, climate change and use of oceans have become major threats to the ocean. EuroGOOS members provide monitoring service of the oceans and seas. It is a challenge on how to provide information service for ocean health. A healthy ocean sustainably delivers a range of benefits to people now and in the future. Goals are to obtain the maximum flows of ecological, social, and economic benefits, which can be defined for different categories of activities such as food provision, carbon storage, natural products, tourism and recreation, artisanal fishery opportunities, coastal protection, coastal livelihood & economies, biodiversity, clean waters and sense of place. Ocean health status can be assessed for each goal, by using a four dimensional index, i.e., present STATUS, TREND, PRESSURES and RESILIENCE (Halpern et al., 2012). When make such assessment, data from all parameter spectra, from physical, biogeochemical, high trophic level, socioeconomic variables, will be needed. In the Baltic Sea, national assessment of good environment status has been implemented as part of Marine Strategy Framework Directive (MSFD) and Water Framework Directive (WFD). However this has not been effectively connected to human wellbeing and climate change. In this paper, potential of using existing marine data service for the ocean health in the Baltic Sea is investigated and gaps are identified. By integrating different data component based on existing monitoring and modelling activities, some of the existing gaps can be filled. Operational ecology in interim scale, including end-to-end modelling and monitoring-modelling integration, is an efficient tool for the ocean health assessment.