

Observations for ocean climate: Using the Observing System Monitoring Center as an entry point in an end-to-end view of ocean observations

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NOAA's ability to provide the best possible climate services today and to continually improve them depends upon the growth and stewardship of a climate data record of the highest quality. The sensors and platforms that are deployed to make observations are merely the leading edge of an observations support framework that includes the transmission of data and metadata from sensors to data assembly and modeling centers; the feedback of quality control assessments; secure storage and retrieval at long-term archival centers; and finally linkages to other data sources (satellite observations, paleo-climate records, , data systems in other fields) and published literature. This is the end-to-end viewpoint that is needed to support the range of climate services that society is demanding: historical climate reanalyses; continually updated climate state estimates; seasonal, inter-annual and decadal forecasts; and research to improve our understanding of processes and thereby enhance the services. The Observing System Monitoring Center (OSMC) applies this perspective to the monitoring of ocean observations. Real-time monitoring tools are paramount, but are implemented in a manner that also supports comparative assessment of the entire time record of observations. The ocean observing system manager can identify not only problems in the current observing system, such as regions of ocean that are insufficiently sampled, instruments that are failing to report, and observing programs that are not meeting their targets for platform deployment; (s)he can also compare these assessments to past years and seasons, and evaluate trends over time. Results are available both in graphical form (maps and time series plots) and in tabular (statistical) form to support report-writing. Increasingly, delayed mode data sources, for example oceanographic cruises that measure surface CO₂ flux, are being integrated into OSMC framework. In this poster we provide both an overview of the current capabilities of the OSMC and a look at some of its near-future capabilities.