

OC_CCI - A 20-year merged global ocean colour time-series

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Ocean Colour CCI generates ocean colour products specifically designed for climate studies. The project is part of the European Space Agency's (ESA's) CCI programme (Climate Change Initiative <http://www.esa-cci.org/>) to quantify Essential Climate Variables (ECVs), key environmental variables that are economically and technically feasible to measure, and are useful for monitoring various components of the Earth system.

The Ocean Colour CCI project targets to produce a long-term multi-sensor time-series of satellite ocean-colour data with specific information on errors and uncertainties. It is the only marine ECV targeting the biological field.

Ocean colour is influenced by many factors, the optical properties of water and both suspended and dissolved components. However, it is largely determined by phytoplankton abundance, which can be indexed as chlorophyll concentration, and is a key factor in the ocean carbon cycle and hence important in all discussions dealing with pathways of carbon in the Earth System. Also, since phytoplankton are at the base of the pelagic food web, they are fundamental to understanding how the marine ecosystem responds to climate variability and climate change. Nevertheless, the role of phytoplankton and ocean colour in climate studies is still not fully understood, not least because other factors such as sediment load often complicate the picture.

At the end of Phase 2, the project's activity had resulted in a 20-year merged ocean colour time-series of a quality that could reliably be used in climate change research: The OC-CCI dataset v3.1 was released summer 2017 and can be accessed via <http://www.esa-oceancolour-cci.org>