

The Scottish Coastal Observatory

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Long term time series are extremely valuable in understanding how the marine ecosystem in coastal waters functions and to describe long term environmental change. Scientists in Marine Scotland Science (MSS), along with a group of volunteer samplers, have been monitoring the physics, chemistry and biology at a number of sites in Scotland's coastal waters since 1997. This monitoring programme is called the Scottish Coastal Observatory (SCObs).

A report providing a basic description of the seasonality and variability of the main parameters, including temperature, salinity, nutrients, carbonate chemistry, chlorophyll 'a', phytoplankton, algal toxins and zooplankton, examined between 1997 and 2013, has been published (<https://data.marine.gov.scot/dataset/scottish-coastal-observatory-1997-2013-parts-1-3>). A dataset of monthly means has also been published (doi: [10.7489/1761-1](https://doi.org/10.7489/1761-1)) and in the summer 2018 the entire SCObs dataset will be published at a higher temporal resolution. These data are being used to fulfil the monitoring requirements of the Marine Strategy Framework Directive, the Water Framework Directive, and are freely available to the public. Analytical quality is ensured by accreditation under the data quality standard ISO 17025 or Joint Code of Practice. While the data quality of each SCObs parameter is assessed separately, they are also assessed as a whole before a quality flag assigned to each data point. The flagging system uses the SeaDataNet QC flag scale, which evaluates the data, but no changes are made to the original data values. The process taken to assign these quality flags, by combined oceanographic, chemistry and plankton expert criteria, will be discussed.

The dataset reveals regional differences in Scotland's coastal environment and ecosystem, with temperature, salinity and plankton community differences observed between sites. A high degree of interannual variability has also been observed in the time series.

The SCObs dataset will contribute to the Interreg Atlantic Area MyCOAST project, which aims to harmonise coastal monitoring programmes across the European Atlantic Area and apply common coastal risk management tools.