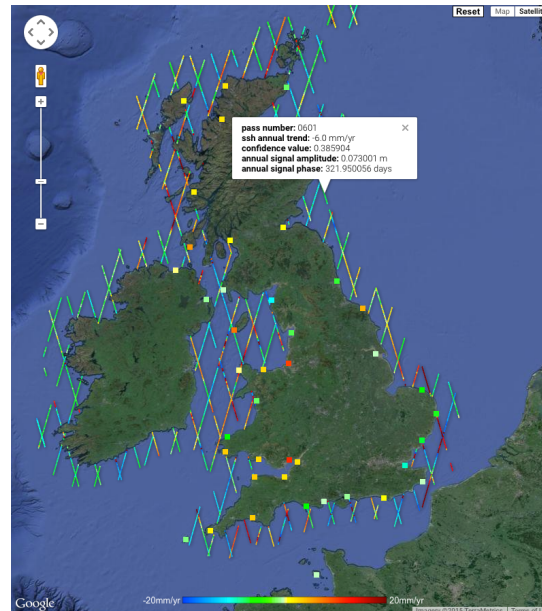


# UK Sea Level Space Watch



## What is Sea Level Space Watch, and who is it for?

UK Sea Level SpaceWatch is a service designed to support agencies responsible for the management and planning of national flood defences and for the preservation of coastal habitats threatened by sea level change. Initial development has been funded by the UK Space Agency under the Space for Smarter Government Programme.

Using data from satellite altimeters in combination with tide gauge data, Sea Level SpaceWatch provides, through an easy to use web-interface, the latest figures on observed sea level around the UK, supported by careful analyses of these data in terms of long-term trends, regional variability and confidence intervals showing the lower and upper limit for the current mean sea levels. The service complements and supplements the sea level change scenario information available from UK Climate Projections<sup>1</sup>, offering planners the opportunity to verify the regional variability of sea level around the UK at multiple time scales and observe the presence of any significant inter-annual changes.

Coastal flooding is the 2nd highest priority on the National Risk Assessment and the costs of managing and mitigating this risk are very high. The EA has estimated the replacement value of EA maintained Flood Risk Managements assets is £24bn, and the present value of the cost of managing flood and erosion risks over the next 100 years is £25bn (for projects where benefits outweigh

<sup>1</sup> <http://ukclimateprojections.metoffice.gov.uk>

costs). There is also a responsibility on National Agencies to preserve sensitive designated habitats (Natura 2000) from the impacts of sea level rise:

Strategic planning for managing future coastal flood risk is generally based on one or more of the level rise scenarios provided by UK Climate Projections, but the uncertainties in the extent of future changes are large. Sea Level SpaceWatch will help to provide increased confidence in planning by providing measured data and analyses of sea level trends and regional variability which will augment the information available on increasing coastal flood risk provided by modelled emission scenarios.

### **What will Sea Level Space Watch Offer?**

Sea Level SpaceWatch will offer the three following service levels:

#### *Web-service – Open to all:*

- An easy to use web service presentation of sea level trend information in UK coastal seas, derived from analyses of satellite altimeter and tide gauge data.
- Download access to the processed satellite altimeter data, and to derived metrics on long-term trends and variability.

#### *Detailed Site Specific Analyses - Accessible to Sea Level SpaceWatch Funding Partners:*

A location specific analysis of information on trends in sea-level at an agreed limited number of sites and may typically include:

- Trends, associated uncertainties and statistics from tide gauge data
- Comparisons with surrounding altimetry data points
- Trends and associated uncertainties from GPS records (where there is a receiver at site) or from a model.

#### *Further on Request Site Specific Analyses*

- Further analyses can be provided at requested sites on request, at an agreed additional cost per site, provided there are sufficient data at that location to support the analysis.

The satellite and tide gauge data processing will be updated on an annual basis to include the latest year's data, and the analyses updated as necessary according to any changes that are found in the derived long-term trend information.

### **How will the Service be funded?**

The cost of the service will be shared by a panel of users, each of whom will also be invited to identify key sites of interest where they require detailed analyses. It is envisaged that the funding partners would form a User Board which would meet annually with the project team to review the service, identify any issues, and consider possible developments. We are now inviting expressions of interest from potential users.

### **How can I find out more?**

A Sea Level SpaceWatch workshop will be held at the National Oceanography Centre, Southampton, on Tuesday 22<sup>nd</sup> March, at which the service will be presented and potential users invited to raise questions. All interested parties are warmly invited to attend, and to register interest by email to [d.cotton@satoc.eu](mailto:d.cotton@satoc.eu)

Visit our Demonstration Service at <http://www.satoc.eu/projects/sealevelsw/test.html>

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