Geophysical Research Abstracts
Vol. 15, EGU2013-4922, 2013
EGU General Assembly 2013

Rescue of historical UK sea level charts and ledgers

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The aim of this project is to increase the availability of long-term historical sea level time series by:

- Scanning handwritten ledgers of tidal measurements stretching back to 1853
- Digitising historic paper charts, plotted by tide gauge instruments that measured sea level at various sites around the UK coast.

The tide gauge at Sheerness was the first self-registering UK tide gauge to actually record data. The earliest tide gauge data we have in our archive comes from this gauge. The final outputs of the project are:

- ˜160 site years of digitised and quality-controlled chart data from 22 sites
- Scanned ledgers spanning 500 years from 14 sites.

These paper records are currently held in the archive of the British Oceanographic Data Centre (BODC) and this project will make them easily accessible to the wider community.

With the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) currently underway, recovering long-term climate records are becoming ever more important. There is global demand for making such data freely available. Long-term sea level records, as well as being used in climate studies (sea level rise), are also used in oceanography (ocean currents, tides, surges), geodesy (national datum), geophysics and geology (coastal land movements) and many other disciplines.

The resulting digitised data are undergoing quality control at BODC. The series are screened (looking for spikes, gaps, timing errors and datum shifts) and metadata assembled. Once completed, these records will be available from our historic sea level web page (www.bodc.ac.uk/data/online_delivery/historical_uk_tide_gauge_data). BODC has consulted with stakeholders (e.g. our university hosting partners and other educational establishments) to enable us to create online educational resources using the newly digitised and scanned data, for use in university courses and school projects. This will encourage greater use of the archives and aid understanding of the data.

The historical ledgers are being scanned and will be stored as image files. We are looking into the possibility of instigating a citizen science project to extract the numbers from the ledgers and collaborating with other international sea level data archaeology projects to exchange ideas and technology.

This work has been funded through the JISC Content programme 2011-13, Strand B: Mass Digitisation

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