

# Channel Coast News

Issue 30 - July 2007

The newsletter for the Southeast Strategic Regional Coastal Monitoring Programme [www.channelcoast.org](http://www.channelcoast.org)

## Regional News

### South East Coastal Group

All contracts for topographic beach surveying have now been let:

- All Hallows, Isle of Grain to Minnis Bay - Canterbury CC in-house survey team
- Minnis Bay to Folkestone Warren - J C White Geomatics
- Folkestone Warren to Camber Sands - Shepway DC in-house survey team
- Rye Harbour Channel to Hastings - Longdin & Browning Ltd.
- Bulverhythe to Eastbourne - Longdin & Browning Ltd.

Repeat baseline survey data is being delivered for validation. Frontage managers will be notified when sections of data have been accepted. With the realignment of the Beachy Head to South Foreland SMP, the SANDS databases are undergoing a significant change. Once completed, new databases will be issued. Over the last two months, two of the data analysts have moved on to pastures new. Recruitment of replacements is underway and it is anticipated that the team will be back to full strength by October.

### SCOPAC

Non-rectified photography from 2006 is now available and will be loaded to the website shortly. If any Partners would prefer to receive the digital non-rectified images for their area on CD/DVD, please contact their CCO coastal surveyor or the SCOPAC area representative.

### South Downs Coastal Group

Worthing Borough Council's in-house survey team have completed BMP surveys for MU's 5 (Elmer), 6 (Clymping) and 8B (Worthing). Trials have also been conducted using quad bikes to collect data. Early indications are that this methodology can produce comparable results to staking out profiles whilst collecting significantly more data. The 2007 Annual Report for the SDCG frontage is expected to be published by mid-August.

### Environment Agency (Southern Region)

The 2006/7 non-rectified images are with CCO for upload onto the website. This summer's flights got off to a promising start with 40% of the coastline having been flown by 12 June. However, poor weather since has prevented further flights. The complete baseline LiDAR survey will be flown in winter 07/08 as originally planned, but delivery of the data will be staged over 2007/8 and 2008/9.

Habitat maps have now been delivered. An internal project is being set up to extract parts of the data into individual layers *e.g.* coastal BAP habitats, with the aim of loading them to the website. In the meantime, if anyone requires access to the data, please contact Hannah Gribben.

### Channel Coastal Observatory

The website's Data Catalogue and Map Viewer has been extended to include data from the Southwest monitoring programme. Uploading of new data has now resumed, following restructuring of the website's database.

Photo: EMU Ltd, June 2007



Although the weather was less than ideal at times, the summer service round for the Waverider buoys has been completed. The buoy in Weymouth Bay was found to have an unusual amount of marine growth (kelp).

## What's New?

The 2007 Annual Partners Meeting will be held at Field Place, Worthing, on Friday 19 October.

## Contacts

If you have any queries about the Strategic Regional Coastal Monitoring Programme, or would like a personal copy of this newsletter by email, please contact your area representative:

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# Regional Coastal Monitoring Programme Tide Gauges

## Introduction

Three new tide gauge stations have been established, at Deal Pier, Sandown Pier and Swanage Pier, to supplement the longer term gauges at Lymington and Herne Bay. The locations of new gauges were designed to nest inside the UK National Tide Gauge Network ([www.pol.ac.uk/ntslf](http://www.pol.ac.uk/ntslf)), particularly where the tidal regime cannot easily be inferred from the nearest tide gauge.

## Instruments

Instrument accuracy, long-term reliability, low maintenance and no instrument (electronic) drift are the main requirements to fulfil international standards in the collection of tidal data. For the new sites, two instrument types were selected: where mains power is available, a WaveRadar REX, manufactured by Rosemount, is used. The instrument is a downward-looking microwave radar, operating at 4Hz (configurable between 2 and 10Hz), and was developed from the Rosemount TankRadar which is used in the petro-chemical industry and mounted on tanker ships. Last year, an early version of the TankRadar (<1976) was returned to the manufacturer; the radar worked



fine, but the ship had been scrapped! They are widely used all over the world, particularly on oil rigs, but our deployment on Deal Pier was the first time a REX has been operated as a wave/tide gauge on the mainland.

Figure 1 WaveRadar REX on Swanage Pier

Where mains power is not readily available, such as on a detached dolphin, a step gauge is used. The units are made by Etrometa in the Netherlands and widely deployed by Rijkswaaterstaat in the North Sea but, again, the step gauge at Herne Bay was the first of its type to be deployed in the UK. The gauge has very low power consumption and the batteries are contained within the sections. These need replacing every 10 years. The gauge has proved to be very reliable and low maintenance and hence an Etrometa gauge was chosen to replace the 10 year old pressure transducer at Lymington.

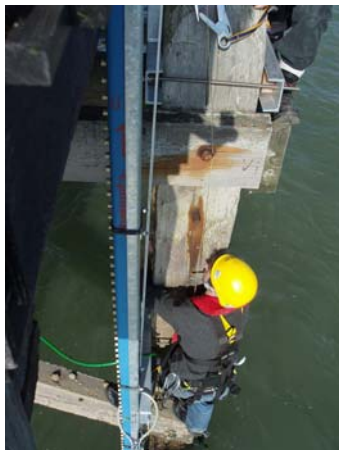


Figure 2 Installation of Etrometa step gauge on the Royal Lymington Yacht Club Starting Platform

Since both the radar and the step gauge measure the water elevation continuously, wave conditions can be derived in addition to the tidal elevation.

## Predictions and Surges

In order to understand the propagation of tidal surges, it is important to measure the meteorological conditions and, therefore, all tide gauge sites are fitted with a meteorological station, measuring wind strength and direction, air pressure and air temperature.

Once the gauge has been operational for 1 month, some 26 harmonic constituents can be obtained from the time series, and tidal predictions can be produced. Ideally however, a full year of measurements is needed to obtain 57 constituents to produce the most accurate predictions. Harmonic analysis and predictions are produced using TASK2000 software, kindly provided by the Permanent Service for Mean Sea Level (Proudman Oceanographic Laboratory).

Real-time measurements are sent to the website every 10 minutes, where they are displayed together with the predicted tides. This gives a clear visual indication of the extent of any tidal surge. A positive surge (measured tide higher than predicted) is of most importance for coastal management, whilst a negative surge (measured tide lower than predicted) is important for navigation.

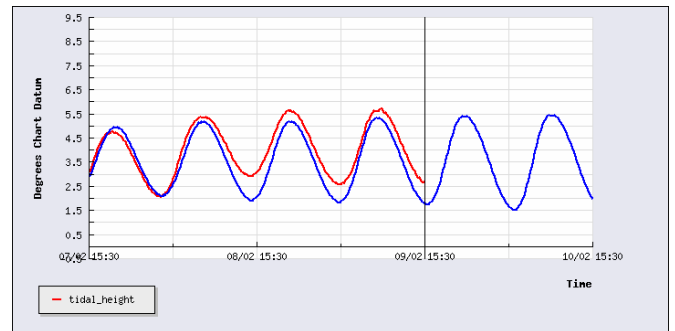


Figure 3 Positive surge at Deal Pier, lasting > 12 hours

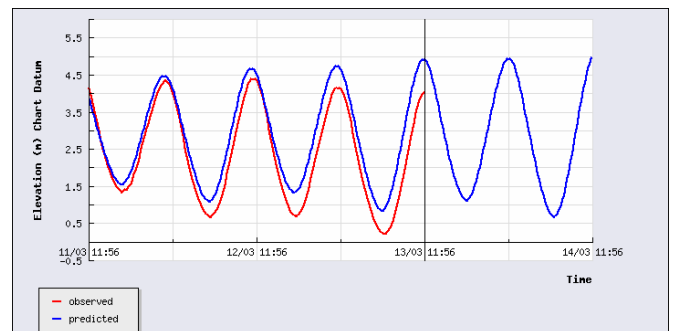


Figure 4 Negative surge at Deal Pier

Measured tidal data are also supplied to the UK Hydrographic Office, for harmonic analysis and predictions for Admiralty Tide Tables.