

Channel Coast News

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The newsletter for the Southeast Strategic Regional Coastal Monitoring Programme www.channelcoast.org

Regional News

South East Coastal Group

All autumn profile surveys have been completed and delivered to the website. Post-storm surveys were carried out at a number of sites affected by recent adverse conditions. SANDS updates are currently being rolled out across the project area. Spring profile surveys are scheduled to be completed in February/March. Christina Bell has left the survey team and we wish her well in her new career. Interviews will be held shortly to appoint a replacement.

SCOPAC

The "DORIS" multibeam data is due for final approval by the UKHO on 3 February, after which it will be loaded to the website. Contracts for multibeam bathymetry surveys for the Isle of Wight and Christchurch Bay have been awarded to Fathoms Ltd, who plan to start surveying in early March. These surveys (together with the remaining SE Regional Monitoring bathymetry surveys) will be carried out in conjunction with the Maritime & Coastguard's Agency's Civil Hydrography Programme. With the exception of Lee-on-Solent (due early March) all autumn/winter topographic surveys have been completed.

South Downs Coastal Group

All autumn 2009 surveys have been processed and sent to CCO. The spring 2010 interim profile surveys are due to commence 15 Feb 2010, at Seaford. The Seaford BMP report has been published. The Pagham and Shoreham Harbour BMP reports are with CCO for review, and should be published by early March 2010.

The Continually-operating GPS Reference stations have been re-configured; the station at Centenary House, Worthing has been re-located to Chichester DC's offices and a new station installed at Newhaven Fort. The Newhaven fort station is now operational and sending daily RINEX files to the Real-time pages of the www.channelcoast.org website. The Chichester station should be online by mid-February 2010. These stations will provide GPS corrections for all beach survey works from Lee-On-Solent in the west through to Bexhill in the east. The 2010 bathymetry survey contract has been awarded to Fathoms Ltd, who will undertake the survey using swath bathymetry (multibeam). The survey, from Selsey Bill to Newhaven, is likely to begin in May.

Environment Agency (Southern Region)

This year's review of the habitat mapping undertaken in 2006/07 is progressing well and the final report is due by the end of March. Coastal BAP habitats have been identified, classified and digitised from the 2008 ortho-photos. Lidar flights for this year have been completed and the majority of the data received. Quality checking has begun. It is hoped that this will include the use of IVS3D's Fledermaus software at the CCO. This will not only speed up the process but 3D visualisation of the data will enable more rigorous quality checks to be undertaken.

Channel Coastal Observatory

There have been a number of new features added to the website. The front page has been modified to provide individual sections for regional monitoring programmes in East Anglia, East Riding of Yorkshire and the northeast and northwest. Swath (multibeam) bathymetry can now be visualised. The first area to be added is Mount's Bay, Cornwall, and users can get a good idea of the resolution of the multibeam data by visualising the data together with the 2007 ortho-photography. All gridded data can now be downloaded as SD files, which can be used in the Fledermaus free-viewer.

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2009 Annual Partners Meeting

The 2009 Annual Partners Meeting was held on 25 November at Field Place, Worthing, organised by Worthing Borough Council and chaired by Bryan Curtis. Andy Bradbury reported on current programme progress and outlined plans for the delivery of Phase III. He highlighted feedback from the annual reports, which has been encouraging and noted that the whole of the southeast is now covered by lidar. He described recent data usage from the website as "phenomenal", with site users currently numbering over 18 million annually. From the Data Catalogue, topographic data has been of most interest, comprising 54% of all downloads.

Training continues to be an important part of the programme and workshops can be arranged for partners in areas such as GIS, MatLab, wave forecasting, SANDS *etc.* Augmenting this, the Southern Coastal Group plans to run workshops for frontline coastal engineers and managers, with a focus on sharing practical information, such as groyne maintenance techniques.

Chris Moulton demonstrated recent updates to the website, including changes to the front pages to give other regions their own section, real-time wave spectral data, a photo gallery and a dual map feature to allow for comparison of data. The real-time data pages are now WAP enabled. The reports section can now be accessed without using the data catalogue and includes links to metadata and the add-to-basket feature. He concluded with information about Fledermaus software, which is likely to be used intensively by the programme, especially for multibeam and lidar data.

Dan Amos, Lois Hand and James Bovington discussed their in-house topographic survey programme, with a series of case studies to illustrate improvements in methodology and a possible future analysis method. Surveys are carried out using ATVs in conjunction with surveyors on foot. They recommended that the timing of In/Out surveys should be closely linked to recycling operations.

The morning session was completed by Pete Tinsley and Dr Justin Dix, who discussed the methodology, processing and importance of the "DORIS" project. It was set up by a consortium including Dorset Wildlife Trust (with funding from Viridor Credits), New Forest District Council and the Maritime and Coastguard Agency, who combined their bathymetric resources to commission a navigation-standard, multibeam survey of 800km² of coastline from Swanage to Portland Bill. The data (bathymetry and backscatter) were analysed by the University of Southampton, along with ground-truthing data from Seasearch, to provide a detailed habitat classification map, which will be of vital importance for the forthcoming SAC proposal for the area.

The afternoon session began with an overview by Andy Jeffrey of how regional monitoring data was used for the Isle of Grain to South Foreland SMP2 Habitats Regulation Assessment (HRA). The example used, Graveney marshes, forms one of 5 managed realignment sites. A GIS-based approach was applied, combining 2007 lidar, DEFRA sea level rise rates and local SMP2 managed realignment policy, which resulted in two habitat designations; standing and grazing marsh. As the MR policy would likely adversely affect site integrity, the HRA was taken to stage 4 of assessment. Following consultation, the least damaging option (in this case, MR with controlled extent) was chosen. However, as this option still resulted in an adverse affect, the HRA progressed to the Imperative Reasons of Overriding Public Interest (IROPI) stage where it is necessary to demonstrate that any adverse effect is necessary for a number of reasons, and that compensatory habitat for any lost designated habitat will be obtained.

Mark Lang, using the example of Pagham Harbour, demonstrated the Integrated Habitat System approach to habitat mapping, which used Aerial Photography Interpretation to map habitats and change, with validation provided by ground-truthing surveys. The primary limitation of the approach lies in differentiating between "real" changes in habitat type and distribution over time and "false" changes incurred by errors in habitat designation in the original API.

Trevor Burton discussed the potential application of InSAR satellite data for coastal monitoring. InSAR, which involves the interferometric processing of the phase component of satellite SAR images of the earth's surface to quantify surface displacements occurring between image acquisition, is capable of remotely-detecting millimetres to metres of deformation spanning months, years and even decades. The current database is sourced from European Space Agency satellites, collected between 1992 and 2002. Although measurement points correspond to typically man-made features on the ground, natural features such as rocky outcrops can be used, and it is suggested that artificial scatterers can be used in coastal areas to monitor land movement, while structures such as revetments can be measured as they are. Possible applications include coastal stability and flood defence work.

The afternoon session concluded with a presentation by Dave Picksley on landslide monitoring, using examples from the southeast, and illustrating monitoring techniques ranging from simple offset measurements to lidar and laser scanning. Examples of each technique were discussed along with their relative merits, limitations and different methods of presenting the collated data. The presentation finished with an example of how the Fledermaus 3D software can help with both handling the large data sets and in displaying the results in a clear manner for the user.