

# Channel Coast News

The newsletter for the Southeast Strategic Regional Coastal Monitoring Programme

## Regional News

### Worthing Coastal Survey Team (Beachy Head to Selsey Bill)

Since the last newsletter, the Worthing Coastal Survey Team have made some significant advances both technologically and in terms of productivity by utilising an ATV-mounted mobile laser scanner to collect topographic beach survey data for all accessible beaches between Selsey Bill & Rye Harbour.

This has required a complete re-write of all our processing procedures which includes the use of numerous, bespoke MatLab programmes written in-house. After some teething problems with the data deliverables, we purchased Terrascan software, which allows each point to be classified as ground, vegetation *etc.* and thus allowing delivery of this more extensive survey data within the expected timeframe.



### Canterbury City Council (Sheerness to Beachy Head)

Since the commencement of Phase III, all topographic surveying is now conducted by Local Authority survey teams, namely Canterbury CC, Shepway DC and Worthing BC. A full baseline survey was conducted in 2012, increasing the size of the dataset to 10 full years for most areas. This has been put to good use for recent beach replenishment schemes at Eastbourne and Deal, informing a number of recycling operations around the coast, and for reviewing the performance of several schemes conducted in the last decade. Canterbury CC are currently working in conjunction with the EA to produce regional sediment budgets for the southeast, based on the monitoring data. These will be used to inform Beach Management Plans that are scheduled for later in the year.

Autumn Profiles have been completed and delivered to the website. Spring profiles are currently being conducted and will be delivered at the end of March with the latest SANDS update.

### Environment Agency (Southeast)

The flying programme for 2012/13 is now underway; data has been captured along the frontages of Sheerness, Deal, Newhaven, Eastbourne, Lymington, Buckler's Hard, Swanage and Poole entrance. The remaining areas will be targeted during the forthcoming larger spring tide ranges in late February and March. The southeast coastline will be flown in its entirety during autumn/winter of 2013/14 and maps showing the planned lidar coverage for each year can be found at:

[www.channelcoast.org/southeast/survey\\_programme\\_schedule/](http://www.channelcoast.org/southeast/survey_programme_schedule/)

### Channel Coastal Observatory (Selsey Bill to Portland Bill)

Many baseline surveys are now conducted using a Leica laser scanner along with capturing coastal landslides, such as the recent slide in Totland Bay, where the seawall was pushed some 17m seaward. Our static laser scanner complements Worthing's mobile system in that the Programme now has an appropriate method of laser scanning a wide variety of beaches; for example the mobile system is particularly useful on wide expanses of beaches where ATV access is possible, such as Seaford, whereas the static system is better suited in more confined areas such as Highcliffe, or where ATV access is restricted. Given the reports of widespread landslides and cliffs falls in recent months, the Programme is starting to collate reports (and ideally, photographs), and devise a simple way to pass to the British Geological Survey. We have received an excellent response from Local Authority coastal engineers and anticipate having a web-based system up and running quite soon.



For the website, the most significant change recently has been the adoption of the Open Government Licence for the majority of data downloaded from the website. The system is in place for Phase III data and will be implemented for earlier data where possible, in due course.

### 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:

Sheerness to Beachy Head

[Strategic.Monitoring@Canterbury.gov.uk](mailto:Strategic.Monitoring@Canterbury.gov.uk)

Beachy Head to Selsey Bill

[Strategic.Monitoring@Adur-Worthing.gov.uk](mailto:Strategic.Monitoring@Adur-Worthing.gov.uk)

Selsey Bill to Portland Bill

[Travis.Mason@noc.soton.ac.uk](mailto:Travis.Mason@noc.soton.ac.uk)

Regional Co-ordinator: Andy Bradbury

[Andy.Bradbury@noc.soton.ac.uk](mailto:Andy.Bradbury@noc.soton.ac.uk)

or contact the regional data management centre:

Channel Coastal Observatory, National Oceanography Centre

European Way, Southampton, SO14 3ZH

Tel: 02380 598467 [cco@channelcoast.org](http://www.channelcoast.org)



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# Seabed Mapping

Thanks to collaboration with the Maritime and Coastguard Agency and the UK Hydrographic Office, the Regional Coastal Monitoring Programme has been able to upgrade from single-beam surveys to swath bathymetry for much of the southeast coastline. Furthermore, although the primary purpose is to survey the bathymetry of the sea bed, backscatter data collected at the same time can be combined with the bathymetry to produce detailed maps of other features, such as substrate type, and anthropogenic features, as well as for marine habitat mapping. The first area to be fully mapped was Canterbury City Council's swath bathymetry survey from Ramsgate to Dover Harbour, which included contributions from Kent Wildlife Trust and Dover Harbour Board.

There are several stages to the habitat mapping: a hillshade layer is generated from the bathymetry, which highlights areas of bedforms or rocky outcrops (Figs 1 & 2); a seabed slope layer is also derived, which helps distinguish areas of sharp change in gradient, such as pipeline trenches and wrecks, as well as bedrock outcrops and areas of relatively smooth, flat seabed.

These layers are integrated with backscatter and ground-truthing information, such as sediment samples, to produce a suite of marine habitat maps using the EUNIS system which, whilst not perfect, has the benefit of being widely adopted throughout Europe. The most detailed maps produced are EUNIS level III, which identifies 26 different habitats based on seabed type, hydrodynamic energy and light penetration (Fig 3 – see website for full legend).

The benefits to the Regional Coastal Monitoring Programme of both the swath bathymetry and the seabed and marine habitat mapping, in unprecedented detail, are legion particularly by indicating the type of seabed (rock, sand, mixed or coarse sediment, Fig 4), and by identifying areas where the thickness of the sediment layer is quite thin, as well as for detailed mapping of pipelines, etc.; it may also be possible to infer direction of sediment transport offshore.

Such seabed data and mapping results are also proving invaluable for revising marine geological maps, in collaboration with the British Geological Survey, the identification and designation of Marine Conservation Zones, and to inform the forthcoming Marine Plan for the southeast. These results are also feeding into the UK Marine Environmental Mapping Programme (Maremap).

For further information, contact:  
[Andrew.Colenutt@noc.soton.ac.uk](mailto:Andrew.Colenutt@noc.soton.ac.uk)

