

Channel Coast News

Issue 34 - July 2009

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

Regional News

South East Coastal Group

All spring profile surveys have been completed and delivered to the website. The summer beach management surveys are well underway and scheduled to be completed by the end of August. Updated SANDS databases (including 2008 ortho-photography) will be delivered in late September.

Daniel Hallam has left the survey team; we wish him well in his new post and have appointed Alison Bear as his replacement.

SCOPAC

All spring surveys have been completed, as have most of the summer baseline surveys, with only Ryde and Lee-on-Solent remaining. Quality control of the "DORIS" swath bathymetry data, covering an extensive part of the Dorset coast and being undertaken in collaboration with the Maritime & Coastguard Agency and Dorset Wildlife Trust, is nearing completion. There has been a great deal of interest in the data which, once approved by the MCA, will be made freely available via the CCO website.

South Downs Coastal Group

All spring interim profile surveys are complete as are most of the summer BMP surveys, with only the MU8B (Worthing) frontage remaining. Autumn interim profile surveys will commence on 19 August, with the Pagham Harbour frontage.

The 2009 Annual Report will be accompanied by the Coastal Frontage Review highlighting volumetric changes across the entire 4d coastal sub-cell between 2003 and 2008.

Environment Agency (Southern Region)

All data from the 2008 ortho-photography survey has now been received and quality assured. Over 80% of this summer's flying area has been captured.

A review of the habitat mapping based on 2005 ortho-photography will be undertaken this year using the 2008 ortho-photography. Coastal BAP habitats will be identified, classified and digitised. The methodology will be the same as used previously, and is also that used by the Southwest Coastal Monitoring Programme.

Planning of the 09/10 lidar survey programme has now begun. This will be a small survey targeting inaccessible beaches, with flights between September 2009 and January 2010. Partners with requests for potential extra areas should discuss their requirements with their Area Representative by mid-August.

Channel Coastal Observatory

The results of the Phase I habitat mapping have been added to the website. Due to potential licencing problems with MasterMap, only maps of the habitat areas can be downloaded, as pdf files, together with a spreadsheet with habitat quantities, defined in 10km OS tiles. The mapping can be found at: http://www.channelcoast.org/data_management/habitats/

Further developments of the website include a new Photo Gallery and a dual map viewer, and will be described in more detail in the next issue. New wave buoys have been deployed in Bracklesham Bay and Rye Bay.

What's New?

The Annual Partners Meeting will be held on Wednesday 25 November 2009 at Field Place, Worthing.

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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Topographic surveying with ATV's

A recent development in topographic survey technique is the use of All Terrain Vehicles (ATV) for both baseline and interim surveys. The South Downs region has employed this method for beach surveys between Selsey Bill and Beachy Head since the start of Phase II of the monitoring programme.



Figure 1 RTK GPS equipment mounted on ATV

The equipment is mounted on the front of an ATV at a known height, then the ATV is driven along the contours of the beach until the seaward limit is reached (Figure 2). Data are collected at a sampling rate of 1 measurement per second. At 16kph, this equates to one data measurement point every 4.4m although this is the maximum practical speed on a shingle bank. On shallower gradients, wider point spacing is acceptable and a maximum speed of 32kph is used, which equates to a point spacing of 8.9m.

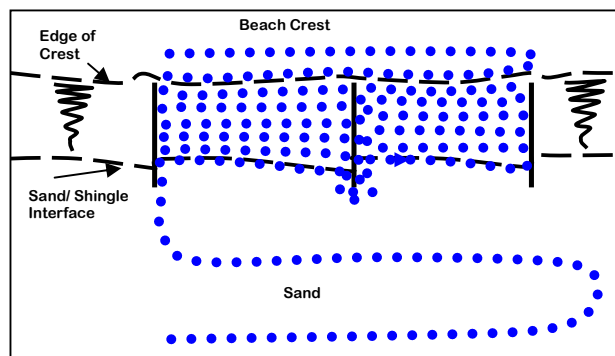


Figure 2 Plan view of survey track

This method means that the ATV is rarely level and, accordingly, some complex calculations are needed to produce the correct beach elevations. The software used for this is LSS Elite (www.dtmsoftware.com) which corrects for pole verticality, based on the known ATV wheelbase, width and pole height dimensions. When combined with the point numbers, the direction of travel and hence the degree of pitch (back and forth movement) and yaw (side to side movement) can be calculated (Figure 3). From this, the corrected XYZ data points are derived.



Figure 3 Pitch and yaw corrections

A detailed DTM can then be compiled, as shown in Figure 4, allowing calculations of the whole beach volume, and profiles to be generated to provide comparison with previous surveys.



Figure 4 DTM of beach survey at Elmer, overlain with aerial photography

Whilst there were some initial concerns about the accuracy of this method of survey, direct comparisons between profiles derived from ATV surveys and profiles staked out on foot have shown that the measured difference in cross-sectional area is typically less than +/- 0.4%. Considering the mobile nature of the coast, this difference is regarded as negligible. ATV-derived profiles have the advantage that up to 3 times more data points are included in the profile than are obtained with the stake-out method.

Experience on the shingle beaches between Selsey Bill and Beachy Head has shown that, in one low tide period, nearly 4km of open shingle beach, 120m wide, can be surveyed in detail using 2 ATV's plus 1 surveyor on foot to pick up inaccessible areas such as near groynes or seawalls. The method, therefore, offers considerable time and cost savings since to complete the same survey on foot to the same level of detail would take at least 3 times as long.

The method may not be suitable for all locations; good beach access for the ATV's is needed; narrow or very steep beaches may not be suitable, neither may beaches with long groynes which preclude access to seaward, nor sites with potential environmental restrictions, but the method has now been well proven on the Sussex beaches.