



# North West Regional Monitoring

DECEMBER  
ISSUE 9



Crosby beach near Mariners Road, Sefton

## NORTH WEST REGIONAL MONITORING PROGRAMME NEWSLETTER

### Introduction

Welcome to the December issue of our NW newsletter. As you may know this is a biannual newsletter for the North West Regional Monitoring Programme. We started with our first edition in July 2013 and here we are at our 9th edition of the Newsletter. We aim to provide news on the programme, spotlight specific projects that are underway and share key information by providing an outline of upcoming monitoring, reporting and events across the region.

### 2016–2021 CERMS Programme

As many of you will know the new CERMS programme is a little sleeker and CERMS partners have increased collaborative working in order to absorb the reduction in programme funding. The Project Steering group have been meeting more often, having quarterly meetings and increasing the linkages with the Shoreline Management Plan. The CERMS Project Team continue to assist the Channel Coast Observatory, who are the national lead coordinating body.

### Data Reports and Analysis

In addition to Sefton continuing to produce data collection reports for each NW Coastal Local Authority, Analysis Reports can now be produced following each biannual survey. The data reports were first

produced at the beginning of 2014 and updated in September 2015 and again in Spring 2016. The next data reports will probably be published again in Spring 2018. Feedback has been positive. Sefton are also planning to produce data analysis for the region at the beginning of 2018, after all the latest survey data has been checked and published.

### The data we collect and why?

Collaborating to deliver the monitoring programme, ensures good quality data is captured to national specifications, quality controlled and stored securely. The programme's purpose is to make all data collected freely available through an open government licence. The data we collect is vital to enable coastal managers to make effective decisions. A look at the first article illustrates the value for money being achieved by the programme as more and more data is being downloaded from the CCO website than ever before! See the latest download figures on page 2.

*Finally, Merry Christmas and a Happy New Year to you all!*

### Contacts

- If you would like to know more about the North West Programme please contact: [coastaldefence@sefton.gov.uk](mailto:coastaldefence@sefton.gov.uk)
- For the data web portal visit: [www.coastalmonitoring.org](http://www.coastalmonitoring.org)
- North West and North Wales Coastal Group visit: [www.mycoastline.org.uk](http://www.mycoastline.org.uk)



### HIGHLIGHTS IN THIS ISSUE

- CCO downloads update
- CH2M
- Coastal Conference 2018
- ARCoES Data
- WIREWALL
- Crosby AWAC deployment
- Winter images from Allerdale & Copeland

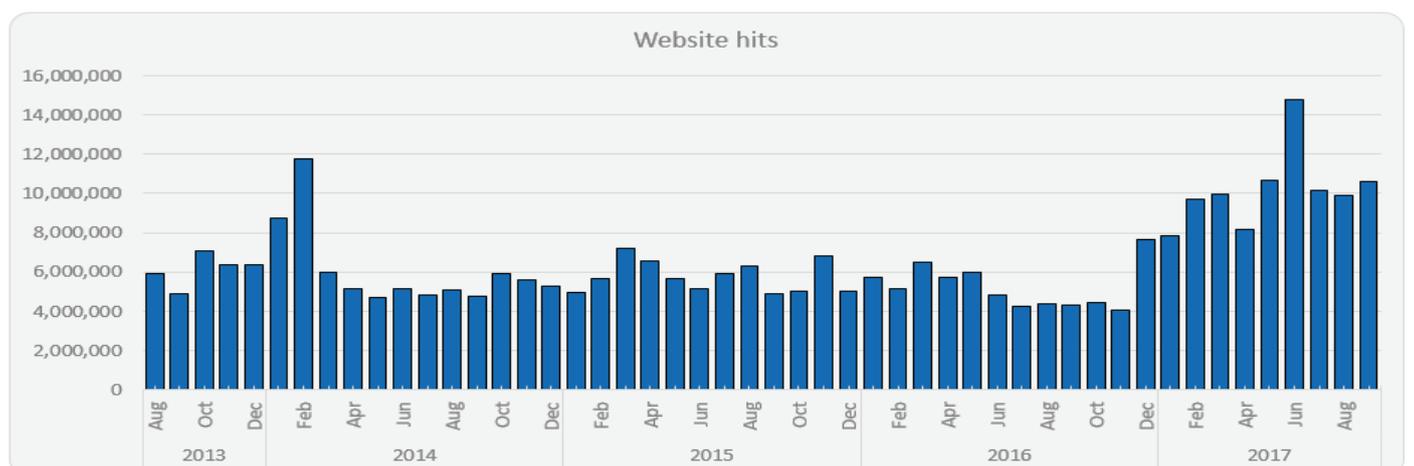
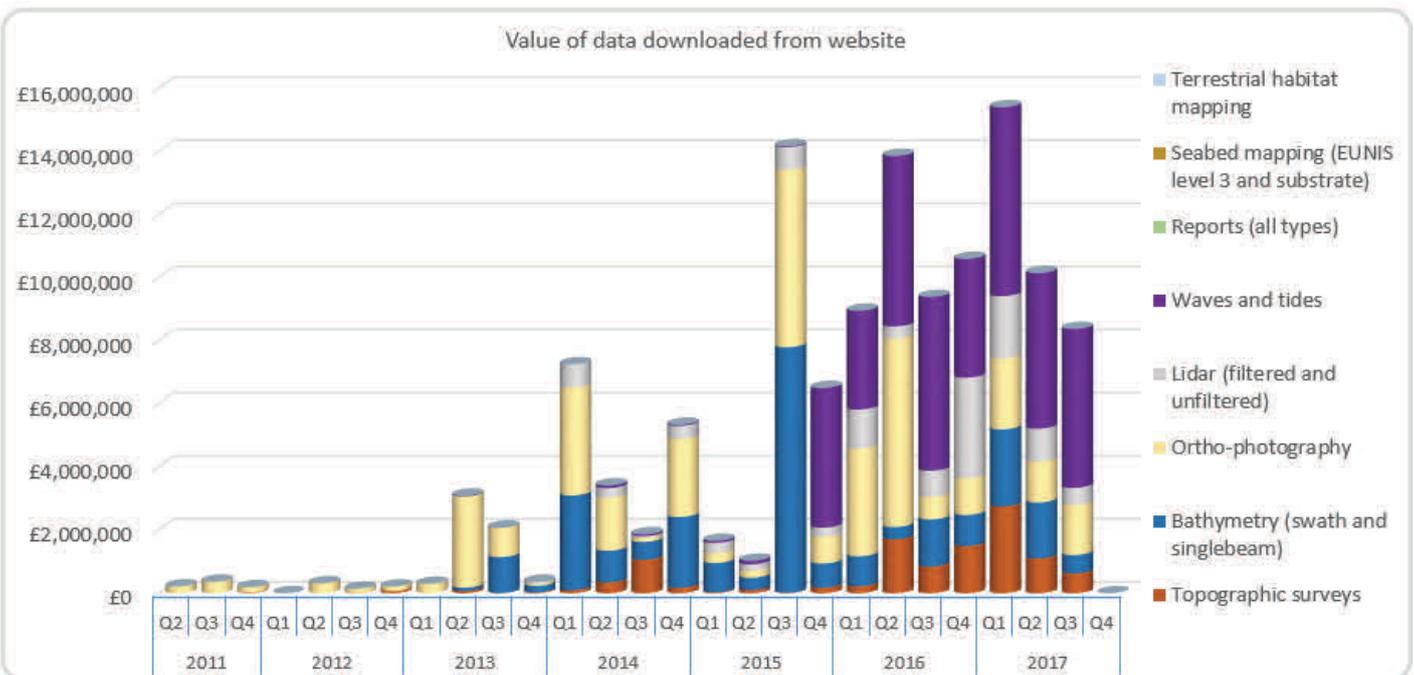
## CERMS PROGRAMME DOWNLOADS FOR NORTH WEST

**Latest web download figures from the web portal by data type** The appearance of the downloaded summary from the Channel Coast Observatory website has changed, it now shows more information, broken down by sectors, quarters and data type, it also gives an indication of the financial value of being able to access the downloads in this way. The monetary value assigned shows the saving if the data had to be collected by a number of different organisations. The range of data available is valuable, not just to coastal engineers, but to a much wider audience, including students and environmental organisations.

Since the last newsletter, we can see Q1 of 2017 achieved the highest ever combined download quantity and value and that since the end of 2015, wave and tide data has been the most downloaded datasets. Use of LiDAR is increasing and Vertical aerial photography (ortho-photography) continues to be well used. We can see a big increase in downloads since Q2v2015, with the last 9 quarters being the busiest we've seen, this may be due to data being easier to download from the Channel Coast and better communications between the partners and other organisations, it shows how useful CERMS data really is to a wide range of people and professions. Remember the National Coastal Monitoring Portal have changed their web address to: [www.coastalmonitoring.org](http://www.coastalmonitoring.org)

### The North West WINS 2017 Q3 biggest value of downloads from all the regions!

You might also be interested to see that hits to the website now average about 9 million per month, double that of previous years.

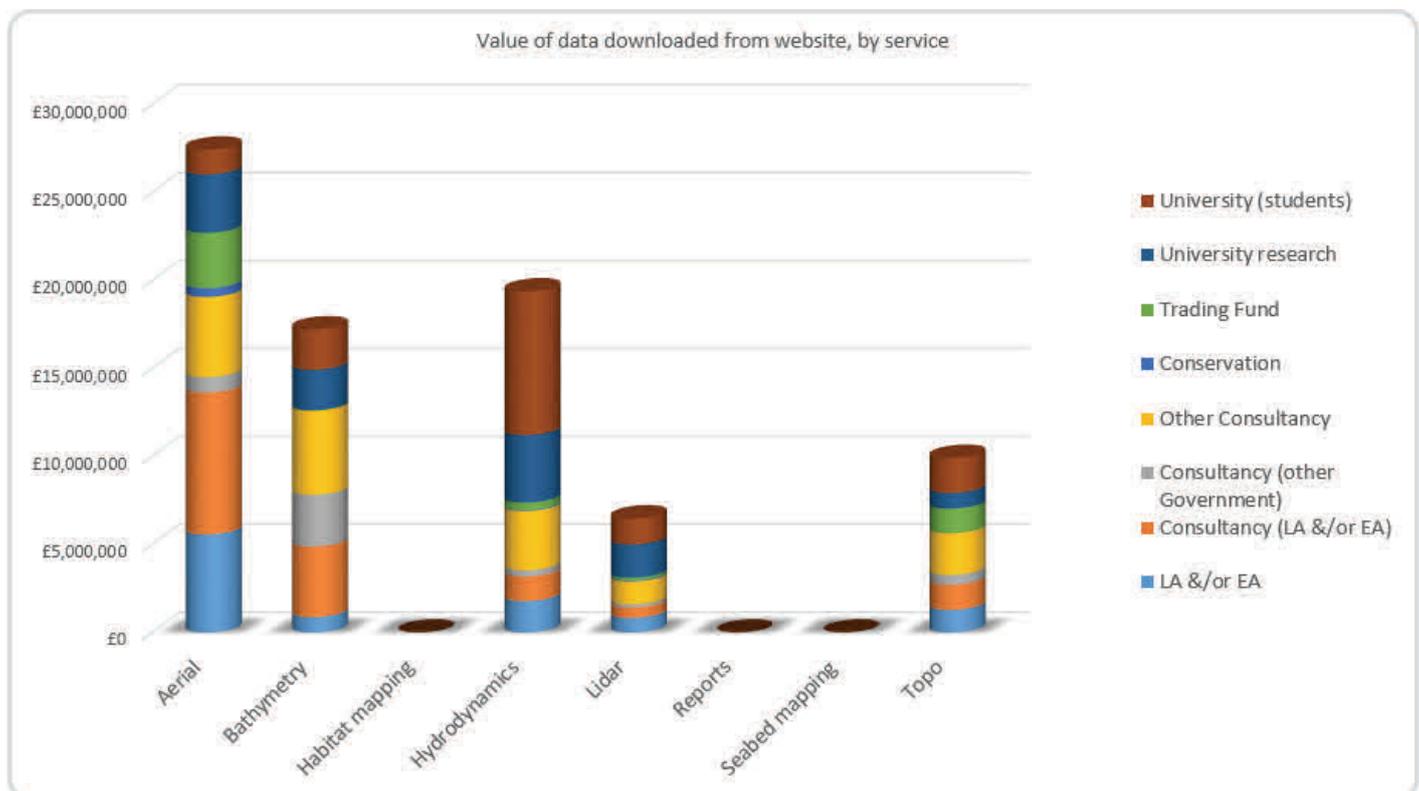


## CERMS PROGRAMME DOWNLOADS FOR NORTH WEST

**Latest web download** Local Government and Environment Agency consultancy as well as private consultancies have been the highest users of data since 2011. This data is vital for Local Authorities to conduct coastal monitoring as in these times of cuts and reduced budgets it is unlikely they would be able to commission data collection independently. University research and university students completing their dissertations are also high value users.

Schools and Conservation organisations are much lower value users however this is important as they probably have the least money available to spend on data collection needed for project research and education. So the graphs prove that CERMS data is being increasingly used and is of great value across a range of sectors, including helping environmental students qualify to become next years environmental professionals.

The graph showing the number of website hits certainly indicates the increase in 2017 of interest in the data. The low level of interest in the habitat mapping is slightly disappointing and perhaps interest in this could be generated by advertising it to Environmental and Conservation groups more.



### Demonstrating value for money

At a National level there is a directive to continue to demonstrate the value for money the CERMS programme provides and to do this additional ways of measuring are needed. At a practical level this means demonstrating the links to EA programmes and how CERMS data is used in big investment programmes, for example how many large schemes couldn't go ahead without the use of CERMS data, emphasising the cost effectiveness. Quantifying the comprehensive value of our coastal data is recognised as a project in itself and the Steering Group have been looking at ways to incorporate this into the programme, e.g. as part of a PhD, also how CERMS data has been used should be incorporated into every project scheme report.

### Latest data received by the programme

The Winter beach profiles and some topographic survey data has been received by Sefton and is currently being checked and tweaked using SANDS database.



Andy Parsons and Paul Fish, CH2M

CH2M was awarded a contract by Sefton Council in May 2017 to support the Cell Eleven Regional Monitoring Strategy until 2020.

The project will be overseen by Andy Parsons, who was project manager for the second SMP for Cell 11 and led the Cell Eleven Tide and Sediment Studies (CETaSS). Andy will be supported by Paul Fish, a geomorphologist with widespread experience of coastal processes and monitoring. Paul will look after the day to day delivery of the project and is the point of contact for technical queries or for sharing information on local coastal behaviour and defence asset issues.

Our work follows on from the previous phase of the strategy and involves the analysis and interpretation of coastal processes monitoring data and inspection of coastal defence assets. We will be carrying out defence asset inspections for the Allerdale, Copeland and Wirral frontages every year.

Beach surveys are typically undertaken twice a year and wave monitoring is recorded continuously. For most of the coast, interpretation and reporting of these data sets will be done every other year, with interim updates provided if a significant storm event occurs.

The main coastal monitoring report will be produced as an easy-to-read document and will present the shoreline management approach for each section of coast as set out in the Shoreline Management Plan.

It will summarise the results of coastal monitoring completed to date, and then discuss the implications for future coastal management practices of the improved coastal understanding gained from monitoring. We will also be producing a technical appendix that presents more detailed analysis of monitoring data, including beach profiles and topographic surveys, wave monitoring, bathymetry, and aerial LiDAR and photographic surveys.

To help us understand the beach survey data, we are using SANDS (Asset Management System). This software allows us to compare beach levels over time alongside mapping, and aerial imagery to determine patterns and trends in behaviour. Topographic surveys undertaken for selected beaches will also be compared using ArcGIS, which allows us to create maps showing the net change in beach level between 6-monthly surveys, individual years and since the baseline survey. This approach allows us to determine whether the changes seen in the data are simply seasonal adjustments or are evidence of an underlying net trend.



The Allerdale coastline near Bowness-on-Solway

We are also using the recently developed iPad app, SANDS Mobile when collecting information on the condition of coastal defence assets. This app allows us to look at and update existing records of asset condition when we are on-site. We can also add georeferenced photographs and prepare summary condition reports using the app - this saves time with data collection and means we can quickly identify where defences are most in need of investment.



*An example of the data we look at, showing changes in beach level near Fleetwood between 2010 and 2016 – here some of the changes are due to beach management activities*

Article by Paul Fish, CH2M

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## **NORTH WEST REGIONAL COASTAL CONFERENCE**

Plans are being developed to hold a Coastal Monitoring Conference in summer 2018. The CERMS steering group has been discussing possible themes for presentations and workshops. Some ideas forming around the proceedings, are to open the conference by showcasing ten years of monitoring work and an overview of the new programme followed by specific presentations. The Coastal Group are keen to show the link between the SMP. Other ideas include; how monitoring informs decisions, adaptation, innovation and technology, education and raising awareness, heritage and history.

Specific topics could include the RapiDAR system deployed at Crosby, in Sefton. The use of gravel barriers, economic models and future sea level rise and waves and weather, perhaps featuring a speaker from the MET Office. The Environment Agency may be able to present on their State of the Nation report which consolidates national coastal information.

Site visits are also planned although a venue hasn't been chosen yet, the nominees so far are; the Wirral, Cumbria or Grange-over-Sands.

## A quick update from local research.....

The ARCoES project has now come to an end and 5 summary films are available on YouTube for anyone who's interested in the outputs. These include:

- Science in Society
- Supporting decision makers
- Impacting the Environment
- Storm chasing
- Applying computer models



The films can easily be accessed through the project website <https://www.liverpool.ac.uk/geography-and-planning/research/adaptation-and-resilience-of-coastal-energy-supply/> on the outputs tab.

While ARCoES comes to an end BLUEcoast is getting ready for its first deployment in Morecambe Bay. This project aims to inform coastal management by reducing uncertainties in the prediction of medium-term (years) and long-term (decadal and longer) regional sediment budgets, morphological change and how the coast recovers after sequences of storms. The project website is now live at <http://www.bluecoastuk.org/>

## WireWall – a new approach to coastal wave hazard monitoring

The design of a new coastal flood defence and the setting of tolerable hazard thresholds requires site-specific information of wave overtopping during storms of varying severity. By converting an existing wave measurement technology into an overtopping monitoring system "WireWall", field observations of wave-by-wave overtopping velocity and volumes will be made at our case study site Crosby. The new system will collect observations that will provide site-specific data to:

- perform calibration of overtopping tools, e.g., the industry-standard empirical rules within EurOtop;
- perform validation of flood forecasting systems and overtopping models; and,
- develop site-specific safety tolerances to inform flood risk response plans.



Figure 1: Crosby on the 5<sup>th</sup> December 2013

Recent advances in technology mean existing wave height sensors can now measure at the high frequencies (a few 100 Hz) required to obtain overtopping data, making this the ideal time to initiate a step-change in coastal hazard monitoring capabilities. At Crosby, the 900 m seawall will reach the end of its design life in the next 5 years. Deployments at this site will provide the Sefton Council with the site-specific data and calibrated overtopping tools that they need to design a new, cost-effective seawall. The deployment of WireWall at Crosby will be the first step towards the development of an overtopping monitoring system that could ultimately be integrated into new coastal schemes as part of the UK's regional shoreline

Articles by Dr Jenny Brown

National Oceanography Centre, Joseph Proudman Building, Liverpool.



**National  
Oceanography Centre**

NATURAL ENVIRONMENT RESEARCH COUNCIL

## Crosby AWAC deployment.....and crabs

As a child we would make our annual pilgrimage to Devon for the family holiday and every year we would end up at Looe, sitting on the quay side with a bit of string, a bait bag and a bucket praying that we would catch some crabs and wondering how my fellow crab catchers along the quay all seemed to have a lot more than me.

Was my technique incorrect – did I need more patience in leaving the line there longer, or less patience and whip it out sooner? Was it location, location, location – to close to the wall or too far? Were they using different bait? Should I use smoked or unsmoked bacon, fish, or were they cannibals and preferred crab sticks.

These memories have been brought back to me in recent years as I have made my family suffer the same humiliation but finally I seem to have the answer, it was not the wrong bait, or technique, it was that I was using the wrong equipment as Fugro will testify. Who knew AWACs would make good crab catchers? During the last service of the Crosby AWAC, Fugro removed 18 crabs from the battery pot, which is some feat considering the battery takes up most of the canister with a little freeboard at the top to protect the wires. In all honesty I never knew there were crabs on Crosby beach as I always thought it is a rather unsheltered bit of beach with nowhere for a crab to hide from the seagulls.

Overall the Crosby deployment is still going well, the data recorded has proven to be useful in assisting the calibration of the Rapidar data and is continuing to record what we hope will be useful data and as Hall Road has been chosen as the test site for NOCs Wirewall system, the AWAC may stay there a little longer.



Article by Andrew Martin



## WINTER IMAGES FROM ALLERDALE AND COPELAND

Thanks to David Bechelli who has sent in some pictures of the Cumbrian coast showing stormy conditions and flooding. From left to right we have,

**Top row;** Seascale Shore November 2009, waves at Seascale Shore November 2009, and Workington Harbour November 2009

**Second row;** Flood damage at Workington Harbour November 2009; Storm water at Workington January 2014; Storm surge at Workington January 2014.

**Third row;** Flooding in Workington in January 2014



Provisional dates for the next CERMS meetings to pencil in your calendar are:

**Thursday 24<sup>th</sup> May 2018**

**Tuesday 21<sup>st</sup> August 2018**

**Thursday 22<sup>nd</sup> November 2018**

If you have any coastal news or projects or anything CERMS you would like to be in the newsletter, please send it through. We are always looking for news and articles from around the NW so please send your stories or information about the latest scheme, staff or projects. I'd like to wish everyone a Very Merry Christmas and best of luck in 2018. Please send your newsletter articles to [Paul.Wisse@sefton.gov.uk](mailto:Paul.Wisse@sefton.gov.uk) in future.

**A BIG THANKS** to everyone who contributed to this newsletter, or has contributed to previous ones, it's all been very much appreciated. The next NW CERMS Newsletter will be published in June 2018...

PRODUCED BY SEFTON COUNCIL

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