



# NORTH WEST COAST NEWS

The Mussell Wreck - Ainsdale Beach by Viv Pearson

**JULY 2014  
ISSUE 3**

## NORTH WEST REGIONAL MONITORING PROGRAMME NEWSLETTER

### Introduction

Welcome to the July issue of our biannual newsletter for the North West Regional Monitoring Programme. We hope to provide news on progress of the programme, spotlight specific issues and provide an outline programme of upcoming monitoring, reporting and events across the region.

### North West Regional monitoring programme update

In May, Sefton hosted a meeting of regional partners, items discussed include: finances, a monitoring programme update and what the future data requirements are. Where monitoring reveals a significant change, we need a mechanism to trigger reviews of the Shoreline Management Plan Policy. Another interesting development was an idea to link the regional monitoring programme more clearly to Shoreline Management Plans to underpin policy and inform strategy and also combine the CERMS meetings with the SMP action group.

### The data we collect

Collaborating to deliver a programme of monitoring ensures that good quality data is collected and securely stored, captured to national specifications and quality controlled. The programme aspires to make all data collected freely available through an open government licence, once checked, data is available to download from at [www.channelcoast.org](http://www.channelcoast.org)

### Data collection reports

As the CERMS coordinating body, Sefton have produced a set of data collection reports for each NW Local Authority which have been distributed recently to the respective authorities. The data reports are also being published on the Channel Coast website. Each report provides a catalogue of datasets available and sets the scope for future monitoring of the coastline. The success of downloadable data from the Channel Coast's online data catalogue was highlighted recently by a summary of their web statistics, Channel Coast calculate the value in economic terms to be in excess of £80m!

### Weathering the Storms in the North West

News and images of the winter storms from around the region features on page 2 – 4 plus an inside view on page 5 & 6 of how the Environment Agency report a flood event. On page 7 a summary of the post storm monitoring and on page 8, the latest on Ecological monitoring for the region, Blue Growth and the success so far of the Channel Coast's downloadable data.

### 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.channelcoast.org](http://www.channelcoast.org)
- North West and North Wales Coastal Group visit: [www.mycoastline.org](http://www.mycoastline.org)



### HIGHLIGHTS IN THIS ISSUE

- Storm damage across the region
- The Story of the Black Pearl
- EA focus on Flood events in the NW
- Focus on Ecological monitoring for the partnership
- Downloadable Data



## WIRRAL, MERSEYSIDE

On the 5<sup>th</sup> December 2013 a combination of wind, low atmospheric pressure and tide height caused widespread coastal flooding across much of the UK. Wirral experienced its worst flooding since the early nineties with the towns of New Brighton and West Kirby particularly affected.

At West Kirby, in the Dee Estuary, tide levels exceeded the crest of the sea wall with water flowing freely across the highway. This caused flooding to residential properties and damage to boundary walls. Properties fronting the foreshore experienced damage to boundary walls and erosion of gardens. Although there was minimal damage to coastal defences there was significant damage to council assets at South Parade. Promenade railings, benches, surfaces and shelters were all damaged along the entire length.



South Parade, West Kirby

Tidal and weather conditions also caused erosion of clay cliffs at Thurstaston, south of West Kirby. The programme commissioned a set of oblique aerial photography for the region captured on December 16th. If you would like a copy contact us. Oblique aerial photography is a useful way of quickly assessing erosion. The impact of the December storm on the cliff can be seen when 2014 post storm photography is compared with photography taken in 2012.



Thurstaston cliffs 2012



Thurstaston cliffs 2014



Meols Parade, Meols

At Meols, north Wirral, the seawall received superficial damage along the majority of its length, except for Sandhey Slipway where approximately 25 metres of sea wall coping was lost, the promenade surfacing was destroyed and the ground below the promenade was also washed out; however, this washout did not extend as far landward as the highway. Fortunately the integrity of the rest of the structure was not compromised. There were multiple locations along Meols Parade where promenade surfacing, steps and railings were damaged. At New Brighton flooding caused major disruption. The Fort Perch Rock car park was inundated with tidal waters from overtopping, the floodwaters reaching inland as far as Marine Promenade. **Photographs courtesy of Wirral Council.**

Marine Point, the new leisure and retail development at New Brighton, also suffered inundation with almost all the commercial properties experiencing flooding.

At the storms peak, the crest of the inshore waves were at the same level as the crest of Kings Parade sea wall causing green water to overtop. This, however, was exacerbated by waves reflecting vertically on impact with the sea wall and the resulting spray being blown inland by the prevailing 70mph winds.



Copyright Liverpool Echo  
Kings Parade, New Brighton



Copyright Liverpool Echo  
Fort Perch Rock Car Park, New Brighton



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New Brighton

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The extremely popular landmark on New Brighton Beach, the Driftwood Pirate ship created by a community art project and christened The Black Pearl became a victim of the stormy weather, as it was swept away on the 5th of December 2013.

## THE STORY OF THE BLACK PEARL



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Luckily 5 days later a large section of the pirate ship washed up on Crosby beach and was salvaged along with the wheel and the name plaque. Happily though the Black Pearl is able to overcome adversity by sustainably re-launching herself, as long as there is driftwood, adults and children enthralled by her magic she is rebuilt by the community. Follow the story on [Face book](#)

Right: one of the Black Pearls inhabitants, waiting for the opportune moment to abandon ship!



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# COPELAND, CUMBRIA



Seascale Seawall - Part of the concrete slab was ripped off during the storm on 3<sup>rd</sup> January. This is a Cumbria Highways structures and has been repaired. The surveyors are checking for movement in the bank behind the structure.



Damaged gabion baskets at Seascale. Rock armour has now been placed in front of these for protection.



Damage to concrete plinth and gabion baskets at Parton. Due to access problems it was only possible to undertake a mass concrete pour to stabilise the area.



Whitehaven harbour damaged by storm surge and caused £300k of damage. No property flooding. Impacts could have been worse but the surge was lower than forecast and wind direction changed.



Damage behind defence at Seamill. The most interesting work was undertaken at St Bees promenade, where a sink hole appeared. However, this appeared to have been caused by the stream and not the sea .

## SEFTON

Fortunately no properties in Sefton experienced flooding except Hightown Sailing Club's Club House and boat yard. Parts of the sea wall and visitor car park at Crosby were damaged and the boardwalk at Formby was partly washed away.



## LANCASHIRE



14 properties were flooded mainly in Blackpool, Fleetwood and Lytham. Flooding to several properties in Blackpool at North and Central pier from wave overtopping.

**A PERFECT STORM**



**5TH DECEMBER COASTAL FLOOD RISK – ENVIRONMENT AGENCY FLOOD WARNINGS & RESPONSE**

The early morning weather forecast on Wednesday 4<sup>th</sup> December 2013 indicated that a storm surge would coincide with the highest spring tide of the cycle at midday on Thursday 5<sup>th</sup> December. Astronomical tide levels were as follows:

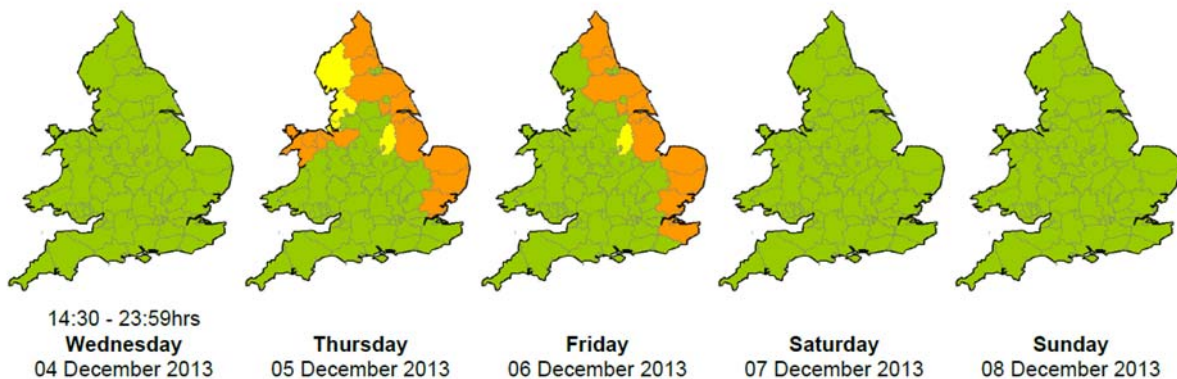
Location	Tide height (mAOD)	Time
Liverpool	4.97	12:24 05/12/2013
Fleetwood	5.01	12:29 05/12/2013
Heysham	5.33	12:33 05/12/2013

The forecast also suggested that the tides would be accompanied by strong westerly winds, with gusts of up to 80 mph. Coastal flood forecasts predicted that stretches of the North West Coastline would reach Flood Alert. Furthermore, it was forecast that some locations in the North West would reach Flood Warning levels and that flooding was expected. The high tide at midday on Thursday 5<sup>th</sup> December was the only high tide of concern for this flood incident.

Following the Flood Guidance Statement issued on Wednesday 4<sup>th</sup> December 2013, Flood Advisory Service teleconferences were held throughout the region. These teleconferences provided all Category 1 and 2 responders with further information about the situation, including the latest forecast and potential impacts, so that plans could be put in place and preparations made for the response. The teleconferences were well attended by professional partners, including representatives from local authorities, emergency services, utility companies, the Environment Agency, Met Office and the NHS.

**Flood Guidance Statement 14:30hrs Wednesday 04 December 2013**

Our assessment of daily flood risk for England and Wales, working with flood forecasting teams in the Environment Agency and Natural Resources Wales, is below.



**Flood warnings and response**

Flood Alerts and Flood Warnings were issued on the afternoon of Wednesday 4<sup>th</sup> December for the high tides expected on 5<sup>th</sup> December. These warnings were issued early due to the high confidence in the forecast, allowing people as much time as possible to prepare.

**Protecting people and property**

Flood barriers on Glasson Dock and Lancaster Quay were closed and were monitored by Environment Agency staff. Hambleton was anticipated to be under the greatest threat and Environment Agency officers attended to provide support. Forecasts showed that the fluvial flood water would be held back by the high tide causing flood alert levels to be reached further inland. As a result, Flood Alerts were issued for the Lower River Lune and Conder Catchment.

The Flood Guidance Statement for Thursday 5<sup>th</sup> December still showed some areas of the region as an amber risk. Due to the ongoing incident, Flood Advisory Service teleconferences were held on the morning of Thursday 5<sup>th</sup> December, well attended by a wide range of partners.

At 12:00 on Thursday 5<sup>th</sup> December, Lancashire Constabulary organised and chaired a teleconference for the LRF partners. During the teleconference, partners provided updates on operational responses, including the latest forecasts and detail on Flood Alerts and Flood Warnings from the Environment Agency.



## Tidal Verification

It is important that information and data is captured during any flooding. Environment Agency officers were deployed to key locations along the coast, where they observed and recorded the conditions (including taking photographs and levels where possible), and logged details of flooded properties where necessary. The information gathered on levels reached at specific locations along the coast will be used to inform future updates and improvements to the flood warning service.

## High Tide

Between 11:45 and 13:30 the North West coastline experienced a combination of high tides, storm surge and strong westerly winds. Promenades and roads were closed, and more than 50 properties were reported to have flooded across the North West. Flood Advisory Teleconferences between LRF partners across the region were held after the tides had receded. By the evening of 5<sup>th</sup> December 2013, all Flood Warnings and Flood Alerts had been removed as no further flooding was forecast for the subsequent tides.

## Post flooding—Data and information gathering

Tide levels and associated return period analysis (still water only):

Location	Observed Tide Height (mAOD)	Return Period
Liverpool	6.21	40-50 year return period
Fleetwood*	6.15	10-20 year return period
Heysham	6.14	5-10 year return period
Workington	4.77	< 1 year return period event

\* Early joint probability analysis suggests a return period of 100-200 years when both waves and still water are considered

Following the 5<sup>th</sup> December 2013 incident, further survey data was gathered in the days after the flooding, where possible. Partners across the region worked together to collate and share data and information, including details of flooded properties, photographs of coastal damage and survey data. This all helped improve our understanding of the impacts of the tidal surge and supported briefings for media, politicians and the PM

## FLOOD WATERS IN CHESTER



This picture is at The Groves and shows the boathouse pub flooded.



Dee lock Chester (The old port)

## UNDERSTANDING FLOOD WARNINGS

( figures for Flood Warnings in the North West for December and January).



### FLOOD ALERT

**Flooding is possible.  
Be prepared.**

144 Flood Alerts



### FLOOD WARNING

**Flooding is expected.  
Immediate action required.**

82 Flood Warnings



### SEVERE FLOOD WARNING

**Severe flooding.  
Danger to life.**

0 Severe Flood Warnings

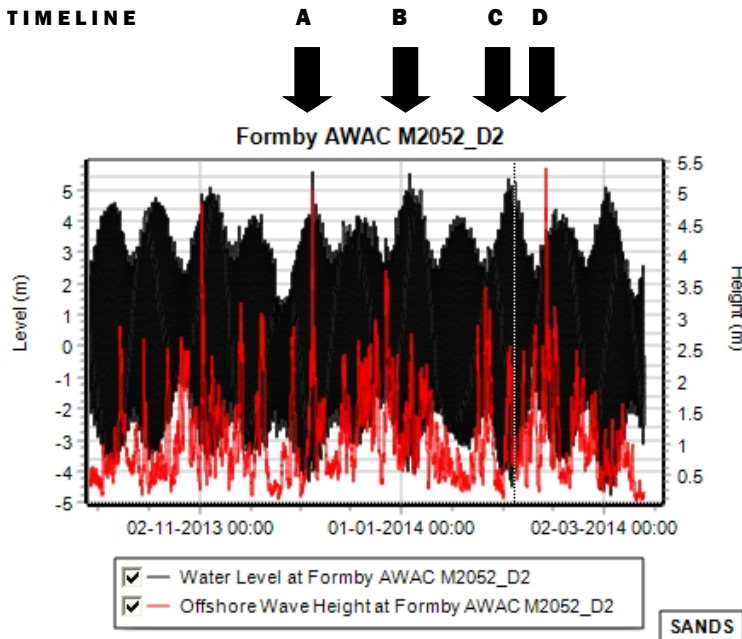


In response to the winter storms a number of surveys were commissioned to understand their impact. A coast wide oblique aerial survey took place on 16th December 2013. Left is a “before” image dated 16/03/2012 and underneath, one of the new obliques from 16/12/2013 which clearly shows large areas of erosion at Formby National Trust.

Comparing the area between the yellow and red arrow shows the largest area of erosion, the dune frontage has been cut right back to just under the long sand blowout and the dunes are now much steeper.

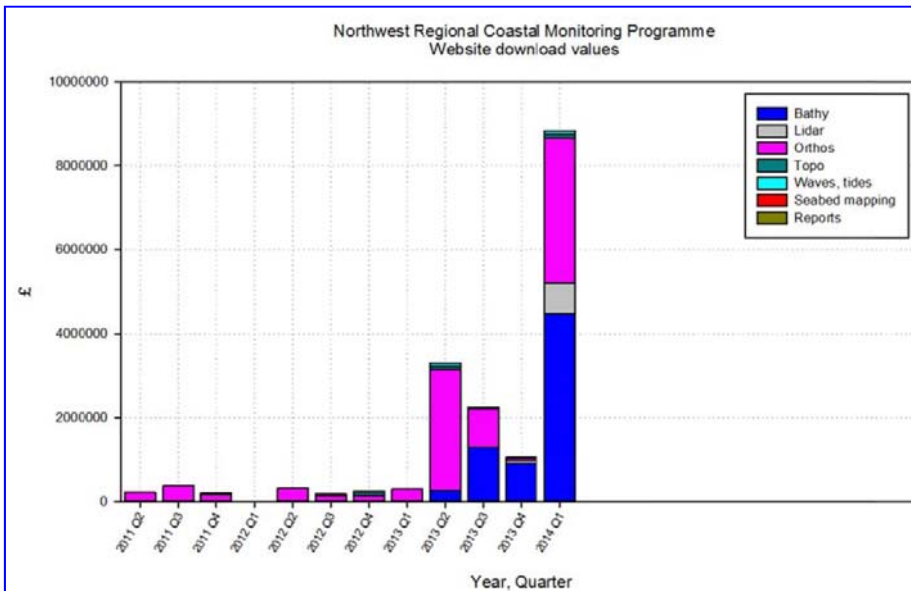
Post storm beach profile surveys were undertaken at Sefton, Wirral, Copeland and Wyre. The AWACS deployed at Formby and Blackpool captured the event.

The graph from the AWAC data shows the water level mOD (black band) and the wave height m (red line). The event on the 5<sup>th</sup> December can be clearly seen where the water level exceeded 5.5m and coincided with waves over 5m. This combination of high water and large waves is the reason for the widespread flooding and damage. The event on the 3<sup>rd</sup> January had similar water level but no significant waves associated and as such the impacts were much less. The third event on the 1<sup>st</sup> February had a lower water level again of 5.29m and small waves. The highest waves (5.39m) in the period occurred on the 12<sup>th</sup> February but coincided with a lower water level and as such didn't have any significant impacts.



- A      DEC 2013**
- B      JAN 2014**
- C      FEB 1ST**
- D      FEB 12TH**

The graph has been produced from Sefton's SANDS database using monitoring data collected by the Regional Monitoring Programme.



**NORTH WEST REGIONAL  
DOWNLOADS FROM  
CHANNEL COAST**

At the latest Task group meeting we also reported on the success of the Channel Coast Observatory's Data Catalogue. The regional downloads from the CCO website are monitored quarterly and assigned a nominal value based on the procurement costs for the type of data. Each time data is downloaded from the catalogue the data type and the sector downloading it is recorded. So far for the first quarter of 2014 the “value” of the data downloaded is in excess of £80 m .

## SUMMER 2014—MONITORING UPDATES

This summer we will repeat the coast wide bathymetric survey, ideally we would like to collect full multibeam (swath) data, however due to the shallow gradients of the foreshore and sub-tidal ranges across large areas of the North West coast the cost has proved prohibitive. The approach we have taken is to collect profile extensions, each alternative dataset will be swath with the intervening survey being single-beam. This approach is the most cost effective method to collect comparable datasets. This years survey will be single-beam.

We are also hoping to repeat the North West sediment sampling survey that took place in 2009/10. We are currently exploring the opportunity of the bathymetric survey vessel also collecting sub-tidal samples whilst they are surveying. We are hoping to employ Survey Operations to collect the bulk of the inter-tidal samples whilst surveying the beach profiles.

### PROCURING ECOLOGICAL MAPPING ACROSS THE PARTNERSHIP

Through the regional monitoring programme we have recently tendered Environment Systems Ltd, based in Aberystwyth to map priority Biodiversity Action Plan and phase 1 habitat extents for the North West Region to inform the programme and statutory bodies of coastal habitat change.

The objective of the piece of work is to:

- Establish baseline datasets for the North West where they are missing or inadequate
- Identify and quantify regional coastal change
- Assess losses and gains for the Regional Habitat Creation Programme
- Identify strategic consideration of coastal flood and erosion risks
- Assist development of Biodiversity Action Plans
- Provide contextual information to support Appropriate Assessments for Shoreline Management Plans, Flood and Coastal Defence Strategies and Flood and Coastal Defence schemes
- Need support of partners over coming months.

## BLUE GROWTH OPPORTUNITIES FROM COAST PROTECTION AND ADAPTATION

On 2 July the Irish Sea Maritime Forum held their 3<sup>rd</sup> Annual Conference in Liverpool as part of the International Festival of Business. The theme this year was Blue Growth. A busy agenda covered a wide range of issues including the blue growth opportunities arising from Coastal Protection and Adaptation, which formed the focus of one of the 7 themed afternoon workshops, the others being *Blue Energy*, *Blue Biotechnology*, *Marine and Coastal Recreation and Tourism*, *Commercial Shipping*, *Fisheries and Aquaculture* and *Monitoring and Surveillance*.

77 delegates from all around the Irish Sea took part in the event and the Coastal Protection and Adaptation workshop proved popular enough to run twice to ensure those that wanted to could participate. The results from the workshops will be worked up into a report highlighting the key transnational opportunities which could form the basis for collaborative action around the Irish Sea. The report will be available in draft form in the Autumn, for wider consultation, and the Irish Sea Maritime Forum plans to hold a further workshop to progress the ideas in early Spring 2015. For more information see [www.irishseamaritimeforum.org](http://www.irishseamaritimeforum.org) or email [info@irishseamaritimeforum.org](mailto:info@irishseamaritimeforum.org)



## CHANGE OF NAME AT EA

For anyone who might have missed this announcement, since April, the Environment Agency in the North West have re-branded their regional names. The North West Region was previously split into North and South Areas. The North Area is now '**Cumbria and Lancashire Area**' and South Area is '**Greater Manchester, Merseyside and Cheshire Area**'. They will cover the same geography as before but are now more recognisable to all customers and communities.

We are now

### Cumbria & Lancashire Area

From 1 April 2014 North West North Area has a new name. Covering the same geography, we will continue to work with our partners and customers to help protect and improve the environment.



We have moved to...



## PRODUCED BY SEFTON COUNCIL

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