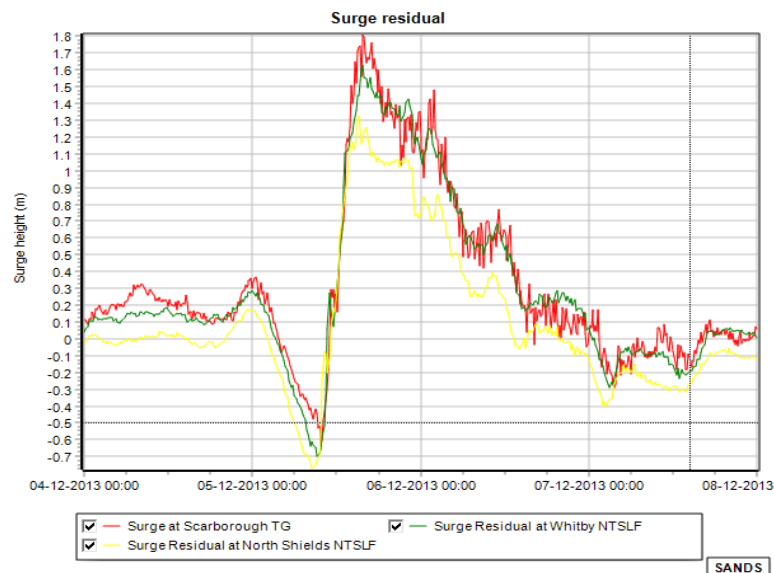
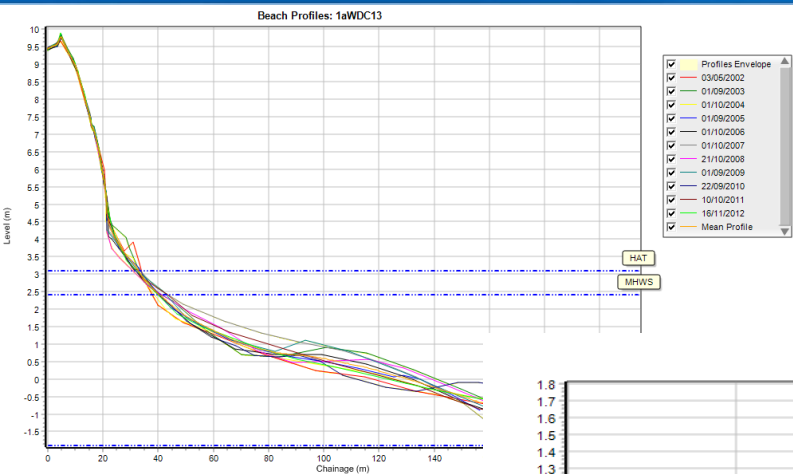


Cell 1 Regional Monitoring AGM

CH2MHILL®

The Strategic Coastal Monitoring Programme for Cell 1 and its Achievements



Andy Parsons
andy.parsons@ch2m.com

Strategic Coastal Monitoring Programme for Cell 1 Overview

- Introduction
- Background to programme
- Extent of data now available
- Reports on data analysis available
- How to access the data
- What to do with the data
- Benefits of the data and analysis
- What next for the programme?

Strategic Coastal Monitoring Programme for Cell 1

Who are involved in the present phase?



CH2MHILL®
Halcrow

academy
geomatics

FUGRO

Channel Coastal Observatory

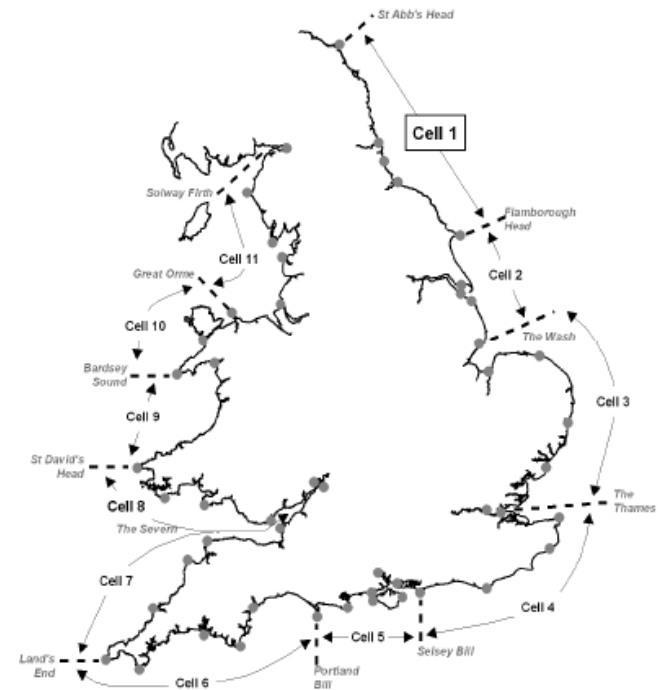
DISCOVERY SOFTWARE

Geomatics Group

Strategic Coastal Monitoring Programme for Cell 1

History of Cell 1 Strategic Monitoring Programme

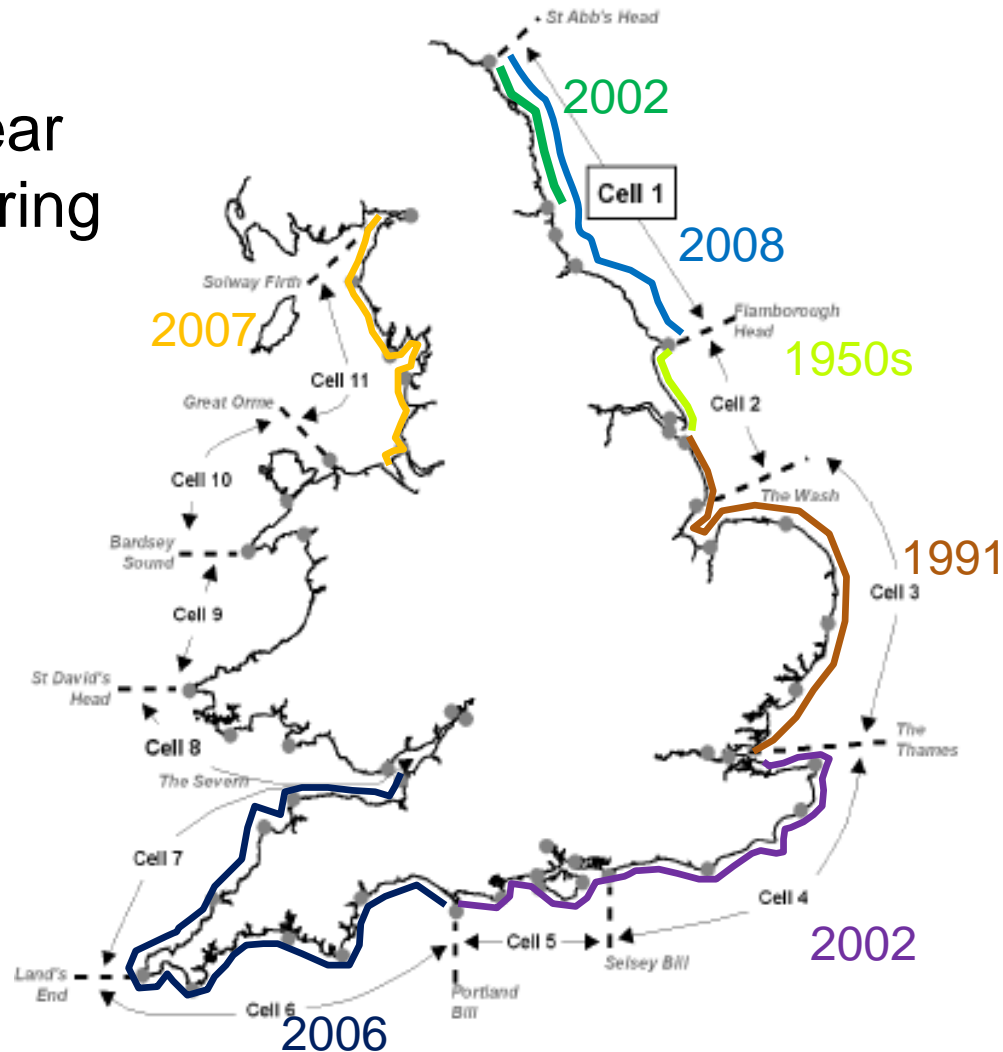
- Strategic monitoring between the Scottish Border and the River Tyne started in 2002
- Strategic monitoring extended to include the River Tyne to Flamborough Head September 2008
- Aim of programme - to provide better understanding on the coastal processes and the locations, rates and mechanisms of shoreline change at key locations between the Scottish Border and Flamborough Head.



Strategic Coastal Monitoring Programme for Cell 1

Comparison with other regions in England

Commencement year
for strategic monitoring



Strategic Coastal Monitoring Programme for Cell 1

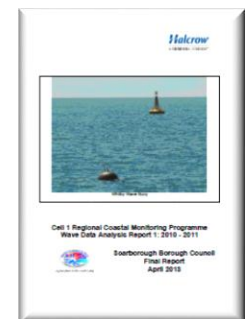
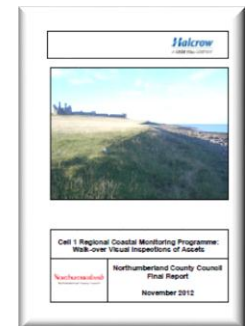
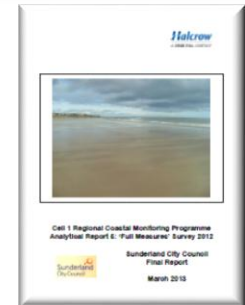
Details of data collected

- 'Full Measures' survey comprising beach profiles, topographic surveys and cliff top surveys in autumn of each year
- 'Partial Measures' survey comprising beach profiles, topographic surveys and cliff top surveys in spring of each year
- Regional wave monitoring –at Newbiggin, Whitby and Scarborough, alongside national programme site at Tyne Tees
- Regional tidal level monitoring at Scarborough and Whitby alongside national programme sites at Whitby and North Shields
- Aerial photography and LiDAR surveys (every 2 years)
- Walk-over surveys of coastal defences, cliffs, dunes and beaches (every 2 years)
- Bathymetric and sea bed characterisations surveys (Baseline profiles in Autumn 2009, further surveys planned for 2014)

Strategic Coastal Monitoring Programme for Cell 1

Details of reports produced

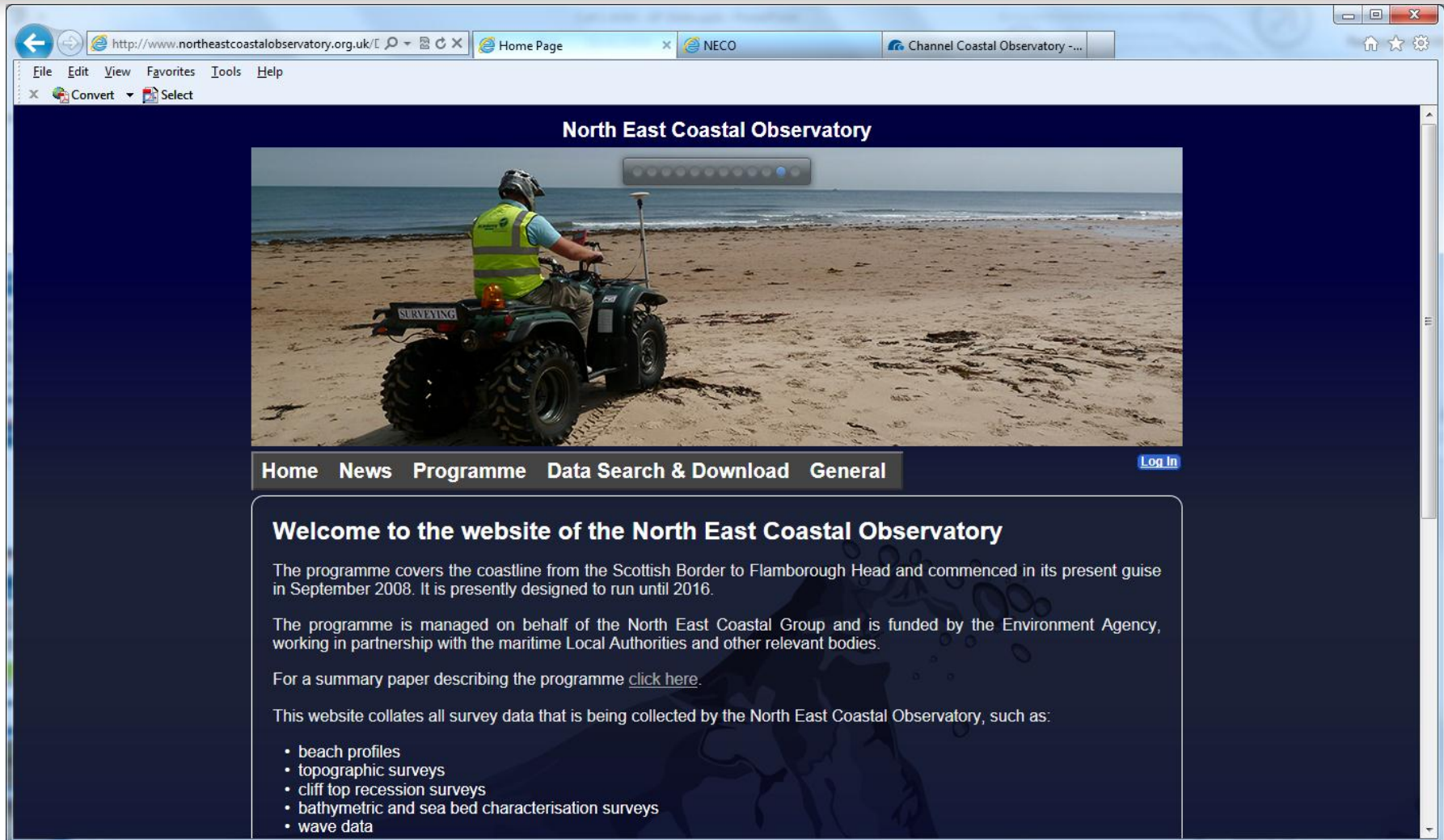
- Analytical Reports annually (winter) for each Local Authority area provide analysis of Full Measures data
- Update Reports annually (spring) provides analysis of Partial Measures data for each Local Authority area
- Coastal Inspection Report for each Local Authority area every 2 years
- Regional report on aerial photography (2010, 2013)
- Aerial survey archaeological assessment 2012/13
- Regional report on tide and wave monitoring (annually, spring since 2013)
- Regional bathymetric and sea bed characterisations Report (Autumn 2009)
- Overview report 2011 and planned for 2015/16



Strategic Coastal Monitoring Programme for Cell 1

Dissemination of data via website:

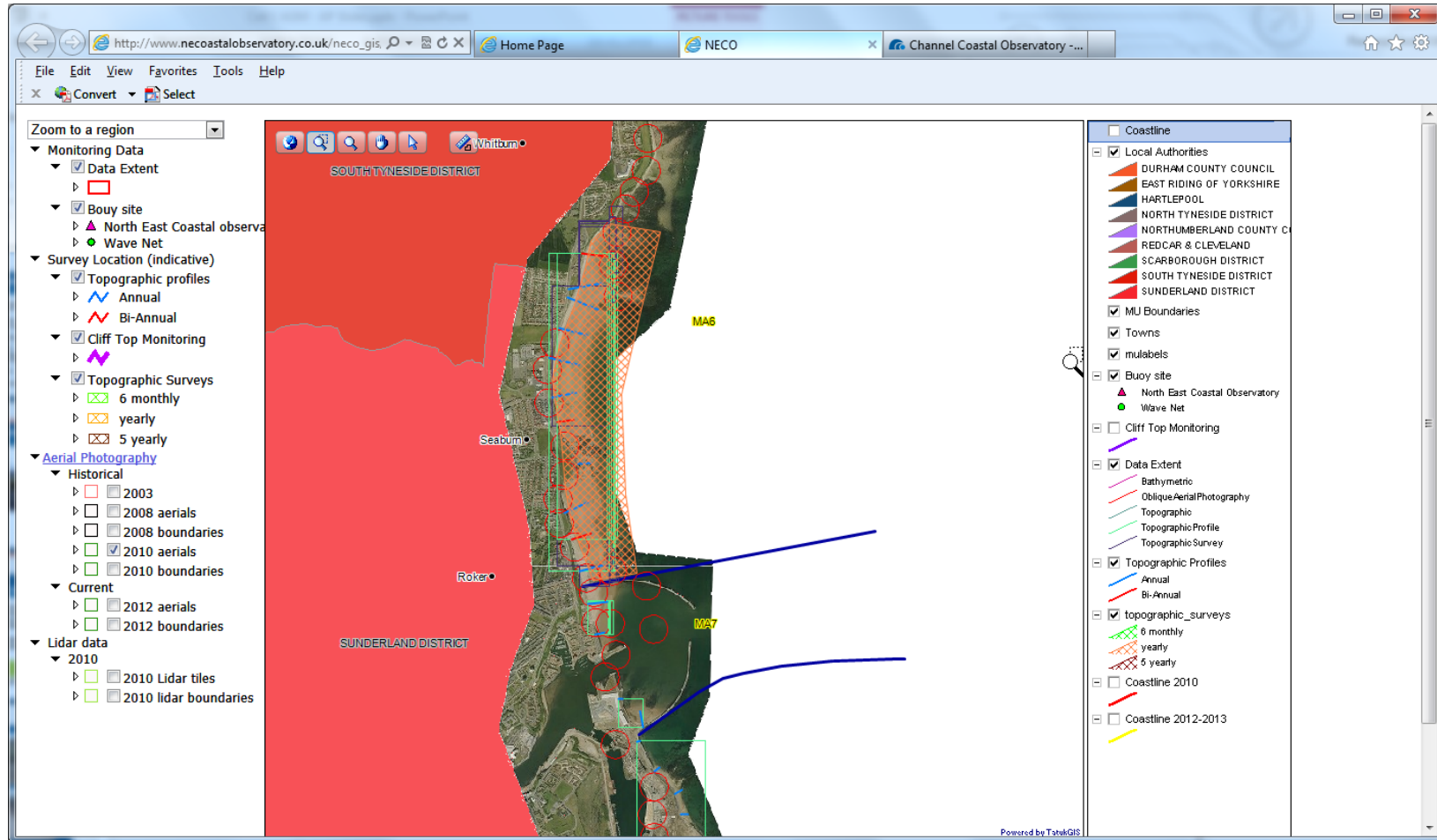
www.northeastcoastalobservatory.org.uk



Strategic Coastal Monitoring Programme for Cell 1

Dissemination of data on website:

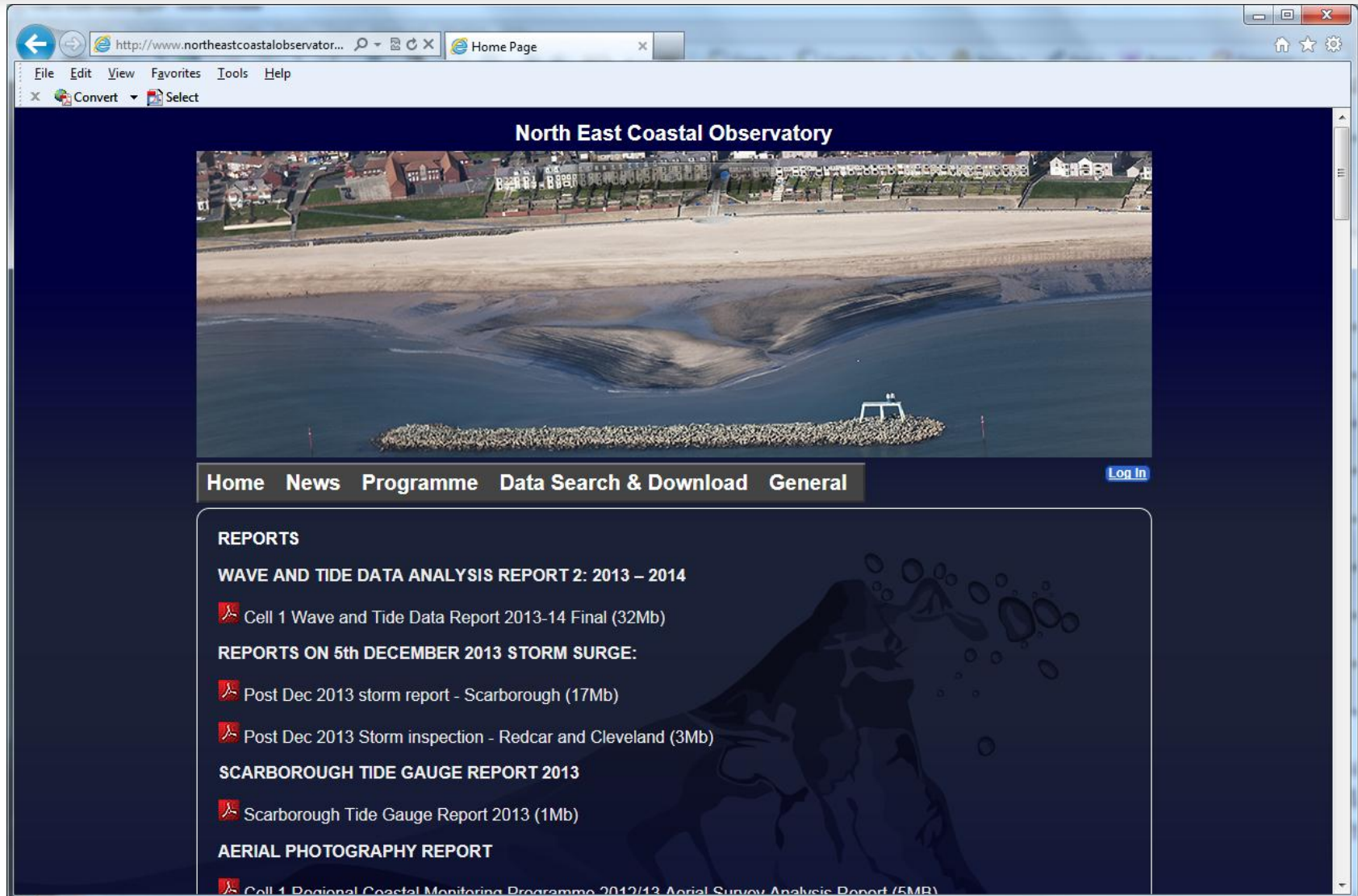
www.northeastcoastalobservatory.org.uk



Strategic Coastal Monitoring Programme for Cell 1

Dissemination of data – reports on website:

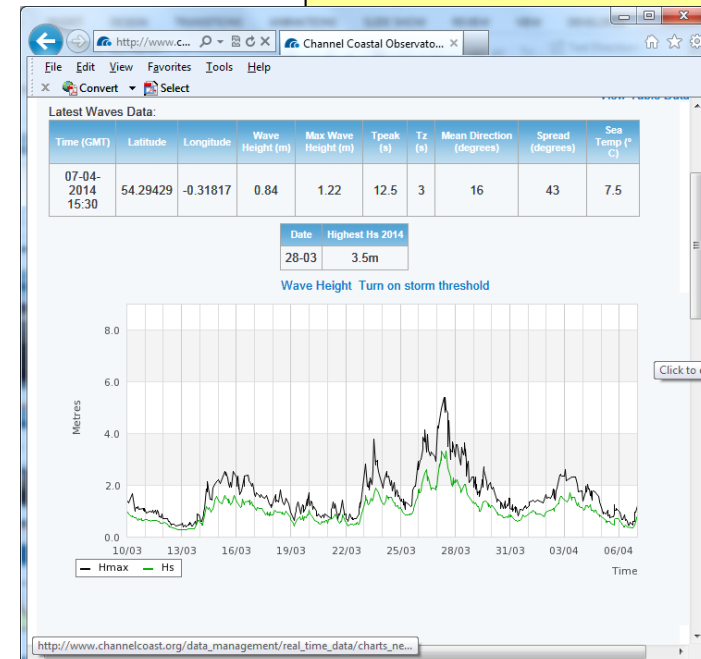
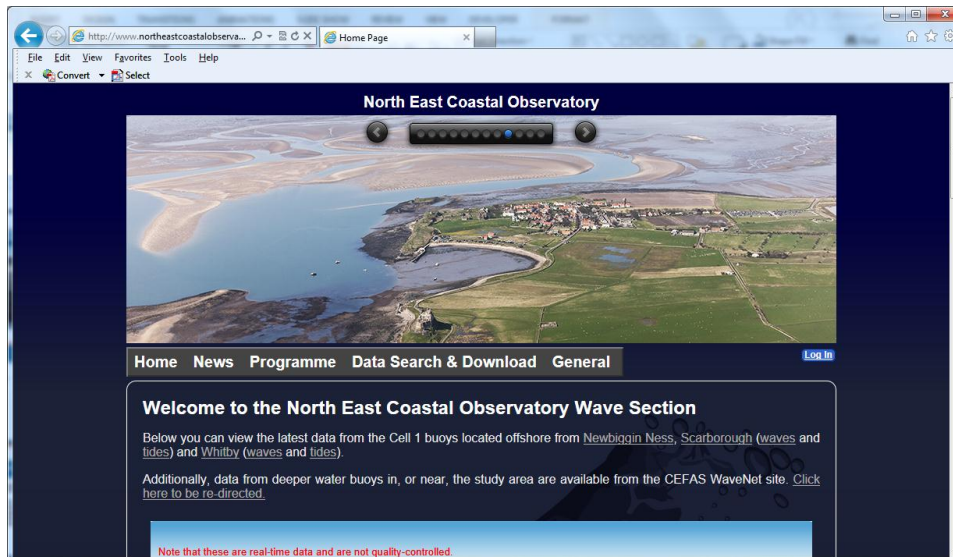
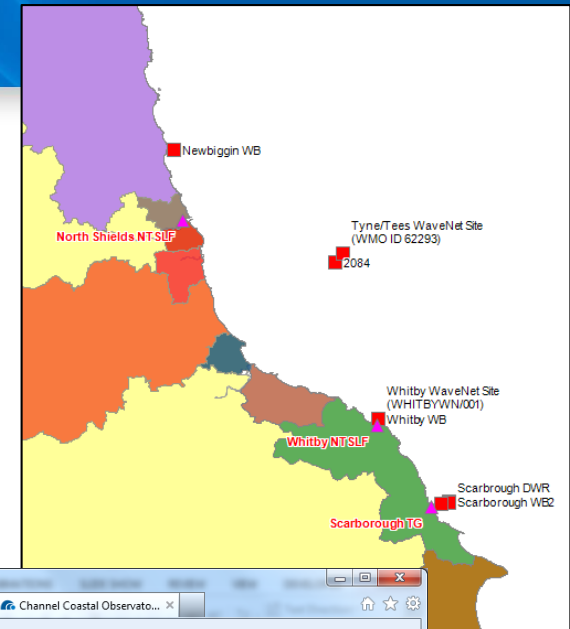
www.northeastcoastalobservatory.org.uk



Strategic Coastal Monitoring Programme for Cell 1 Dissemination— real time wave and tide data:

www.northeastcoastalobservatory.org.uk

- Real time wave data from the 3 wave buoys available on CCO website, Cefas WaveNet website and the NECO project website
- Latest report on data collected over the last year has just been put on the NECO website reports page.



Strategic Coastal Monitoring Programme for Cell 1

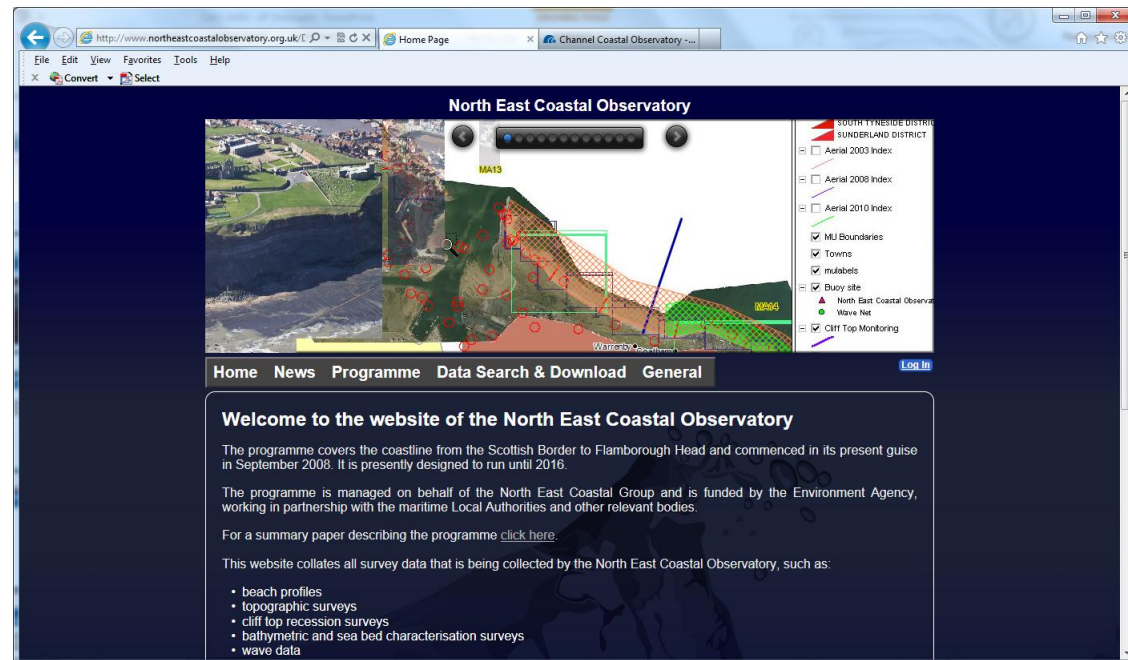
What to use the data for?

- Robust coastal management decisions require a long-term region-wide understanding of processes and shoreline change.
- The data should be used to inform:
 - delivery of the action plan in the Shoreline Management Plan
 - updated risk assessments for coastal erosion and coastal flooding
 - coastal defence improvement schemes
 - coastal flood and erosion risk management strategies
 - future updates to the SMP

Strategic Coastal Monitoring Programme for Cell 1

How to use the data

- Visit the website
- Download reports for your area
- View and download aerial photography
- View wave and tide monitoring data
- Tell your colleagues
- Tell your consultants
- Ask Robin
- Ask CH2M HILL



Strategic Coastal Monitoring Programme for Cell 1

What are the benefits of strategic coastal monitoring

- Robust coastal management decisions require a long-term region-wide understanding of processes and shoreline change.
- Local Authorities, the Environment Agency and land owners and managers recognise the need for regional coastal monitoring programmes to improve the long-term and wide-scale understanding of coastal processes and shoreline change across coastal cells.
- Regional data can also inform local schemes

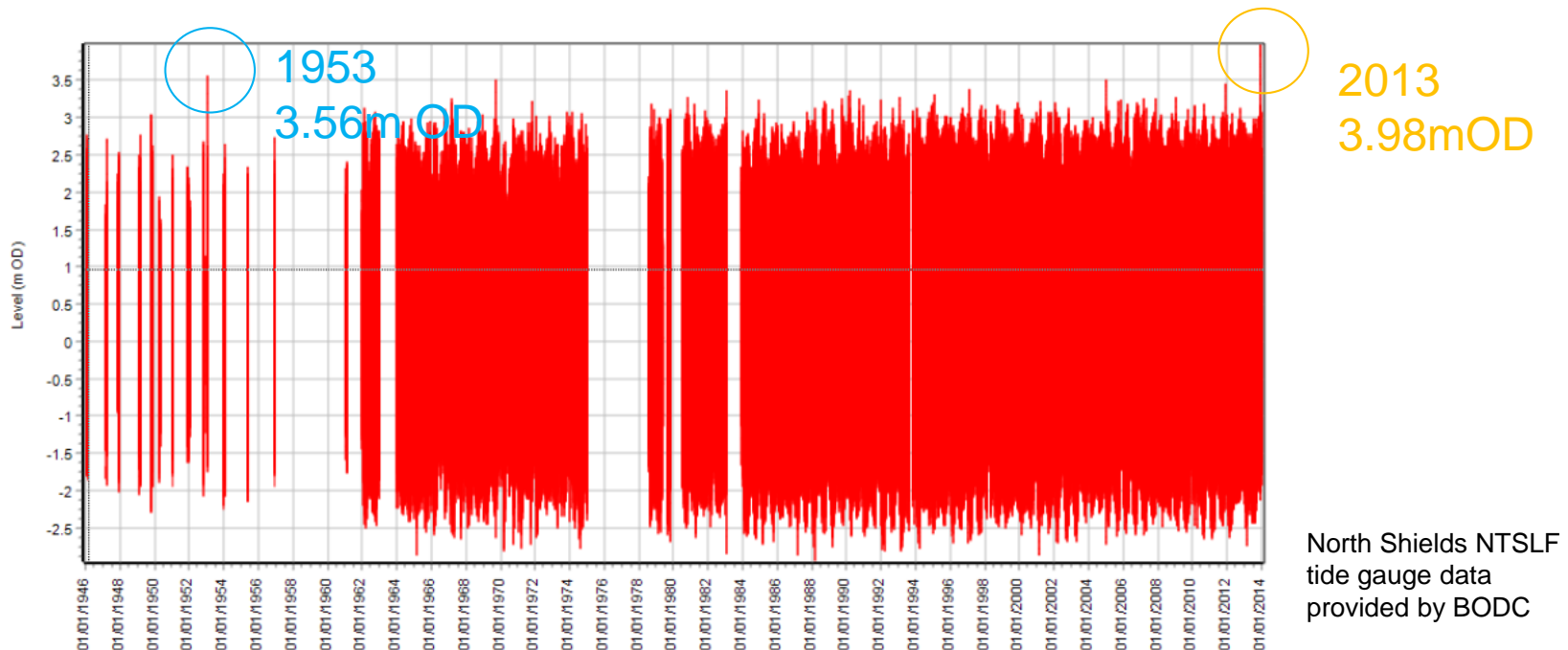
In essence, regional coastal monitoring programmes routinely and systematically provide essential data that enables the various maritime Local Authorities and the Environment Agency to appraise, identify and deliver cost-effective, technically feasible, and environmentally acceptable and relevant solutions to a wide range of coastal erosion and sea flooding risk management problems.

Cooper, N., Rowe, S., Parsons, A., and Cooper, T., Cell 1 regional coastal monitoring programme. In proceedings of 44th Defra and Environment Agency Flood and Coastal Management Conference, Telford, 2009

Strategic Coastal Monitoring Programme for Cell 1

What next for the programme?

- Value of the programme increases with duration, so need to keep going
 - Lunar nodal cycle 18.6 years shown to impact coastal change as well as tide level
 - 20+ years of data needed for trend analysis
 - Extreme value analysis not reliable to extend beyond 3 to 5 times data duration
 - E.g. 10 years of data used to derive up to 1 in 50 annual probability events..
- Fine tune the programme, but maintain consistency



Any Questions?

