

Coastal Monitoring Update

Clive Moon

Principal Engineer (Coastal & Flood Risk Management)

Coastal Monitoring



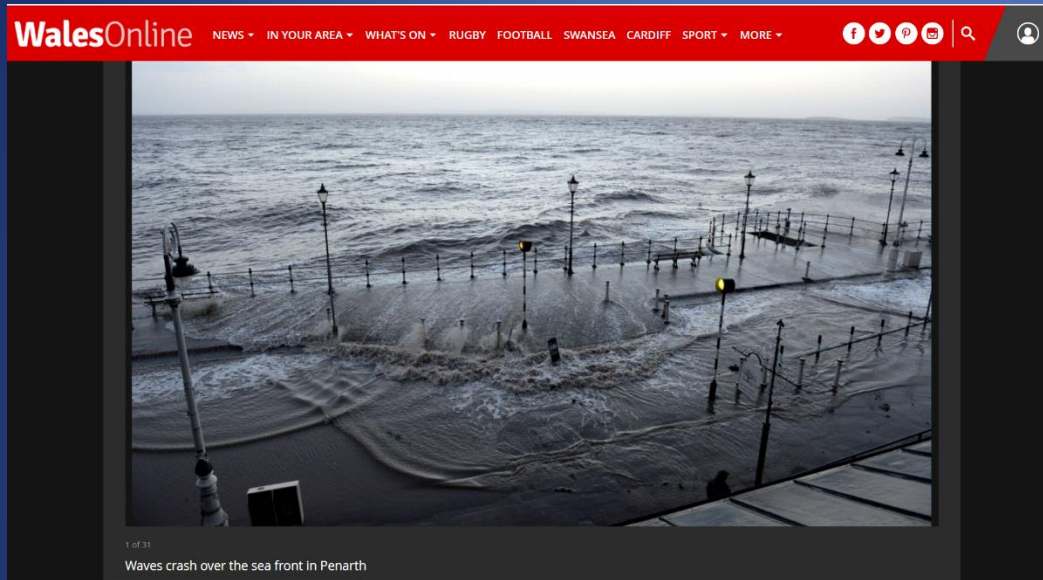
- Background to monitoring
- Summary of monitoring techniques
 - Topographic profile surveys
 - Drone Surveys
 - LiDAR Surveys
 - Multi-beam Bathymetric Surveys
- Localised sites
- Future Aims



Background to Monitoring

- Various roles and responsibilities:
 - Lead Local Flood Authority
 - Coastal Erosion Risk Management Authority
 - Landowner
 - Highway Authority
- 45 kilometres of coastline
- Predominantly cliffed coast line
- Developed areas focus of monitoring

Background to Monitoring

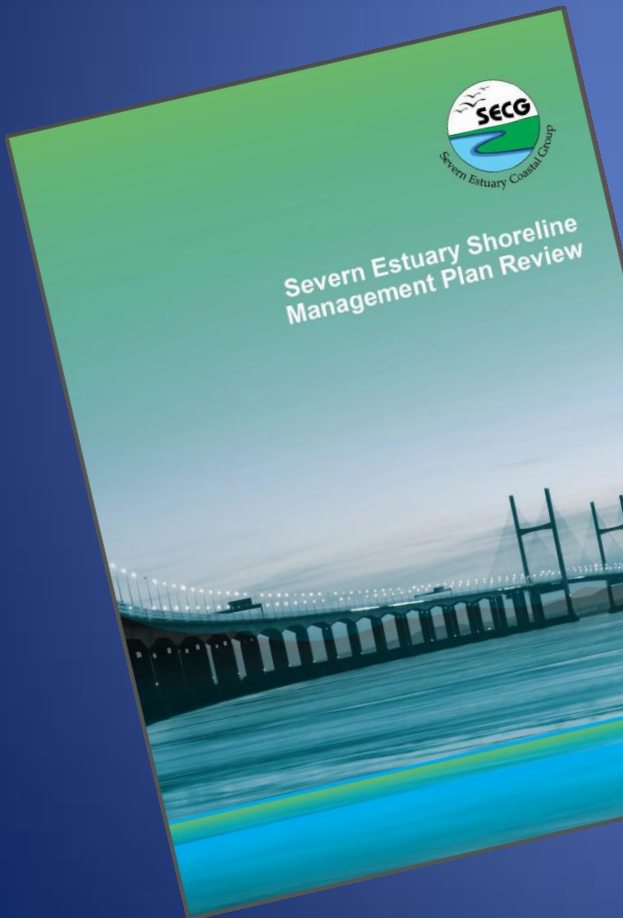


<https://www.walesonline.co.uk/incoming/gallery/storms-hit-the-welsh-coastline-6467593>



<http://www.bbc.co.uk/news/uk-wales-15629729>

Background to monitoring



Delivering our vision for the Vale of Glamorgan



Strong Communities
with a Bright
Future

VALE of GLAMORGAN COUNCIL SERVICE PLAN

2017-2021

Service Area	Visible Services and Transport
Operational Manager	Emma Reed
Director	Miles Parter
Cabinet Member	Cllr Bronwen Brooks Cabinet Member for Housing and Social Care Cllr Peter King Cabinet Member for Building Services, Highways & Transportation
Scrutiny Committee	Environment and Regeneration Healthy Living and Social Care

www.valeofglamorgan.gov.uk



Lavernock Point to St. Ann's Head Shoreline Management Plan SMP2 Main Document

January 2012

Halcrow



Beach Profile Locations



Topographic Beach Profile Locations

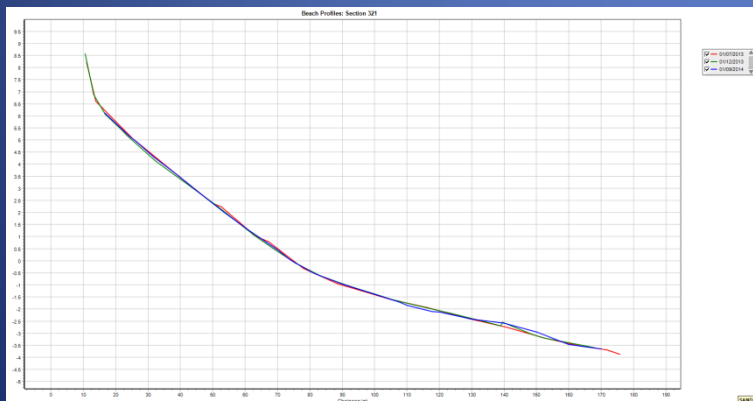
RTK-GPS topographic profiles



Beach profile photographs

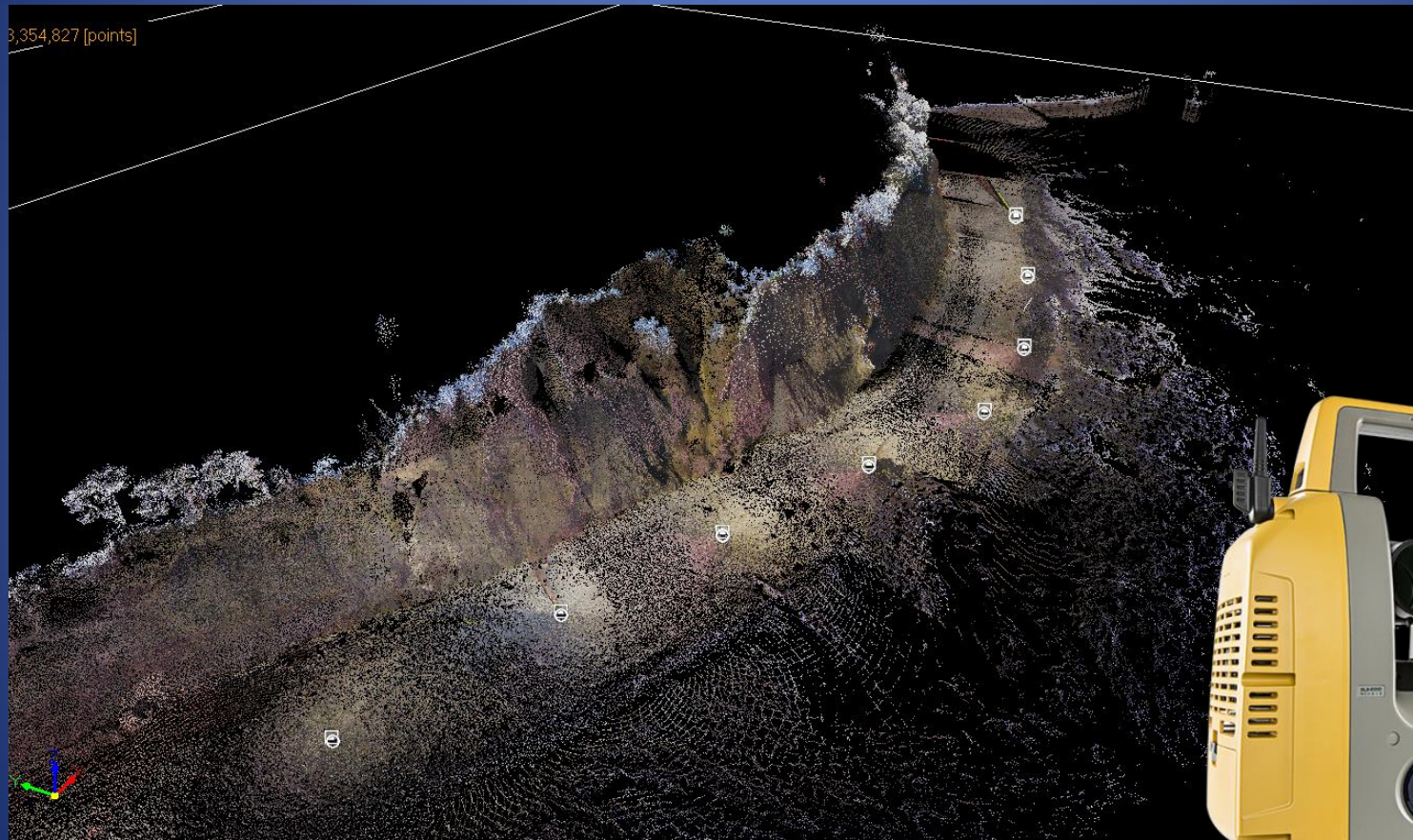


Image courtesy Channel Coastal Observatory © NFDC



SANDS – Beach profile analysis

Terrestrial Laser Scanner



Penarth Head (2016)

UAV / Drone Surveys



UAV Spring 2017 survey coverage

UAV / Drone Surveys



Future Aerial - Un-manned Aerial Vehicle

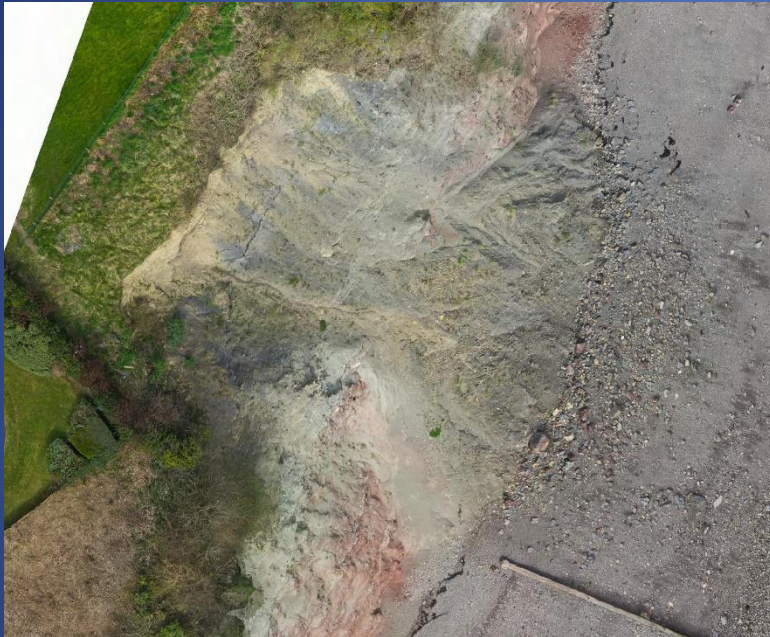
UAV / Drone Surveys

High resolution aerial imagery



Point cloud extracted
from imagery

UAV / Drone Surveys



Penarth Head - cliff monitoring (2017)



LiDAR Surveys

- LIDAR, which stands for Light Detection and Ranging, is a remote sensing method that uses light in the form of a pulsed laser to measure ranges (variable distances) to the Earth.



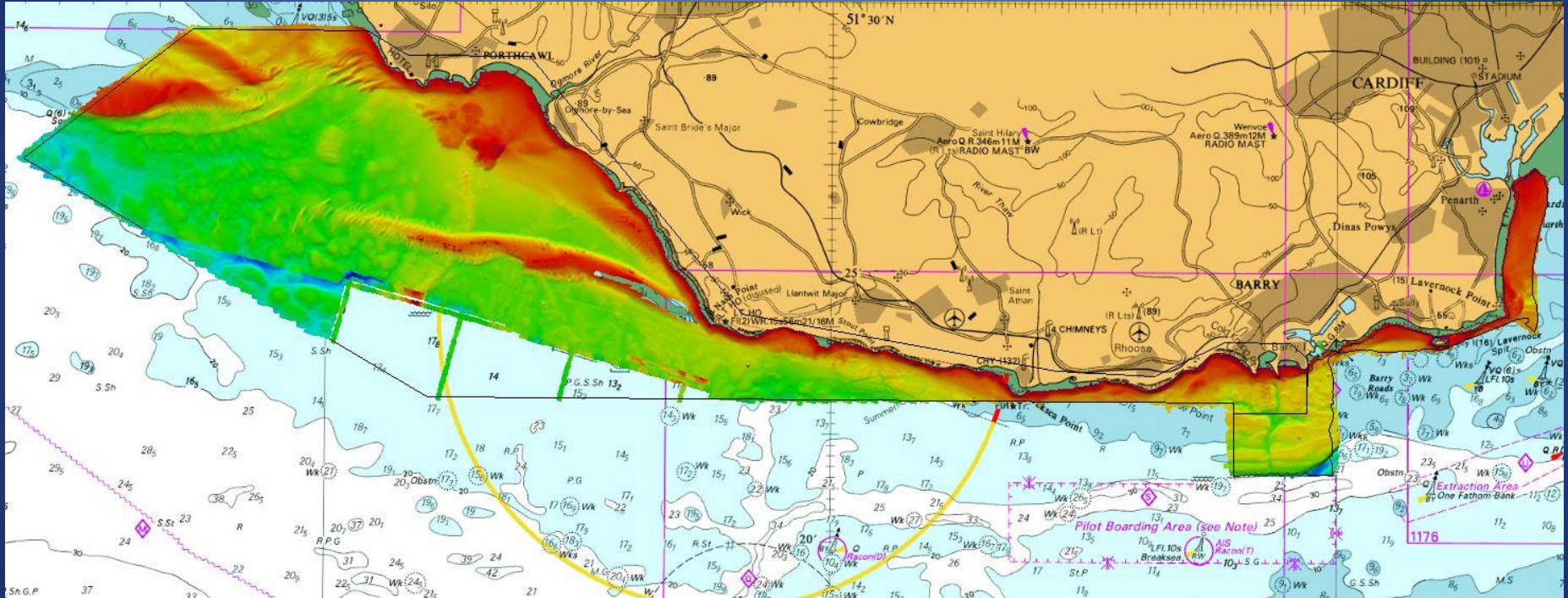
2016/17 Natural Resources Wales – Coastal LiDAR sortie

Bathymetric Surveys



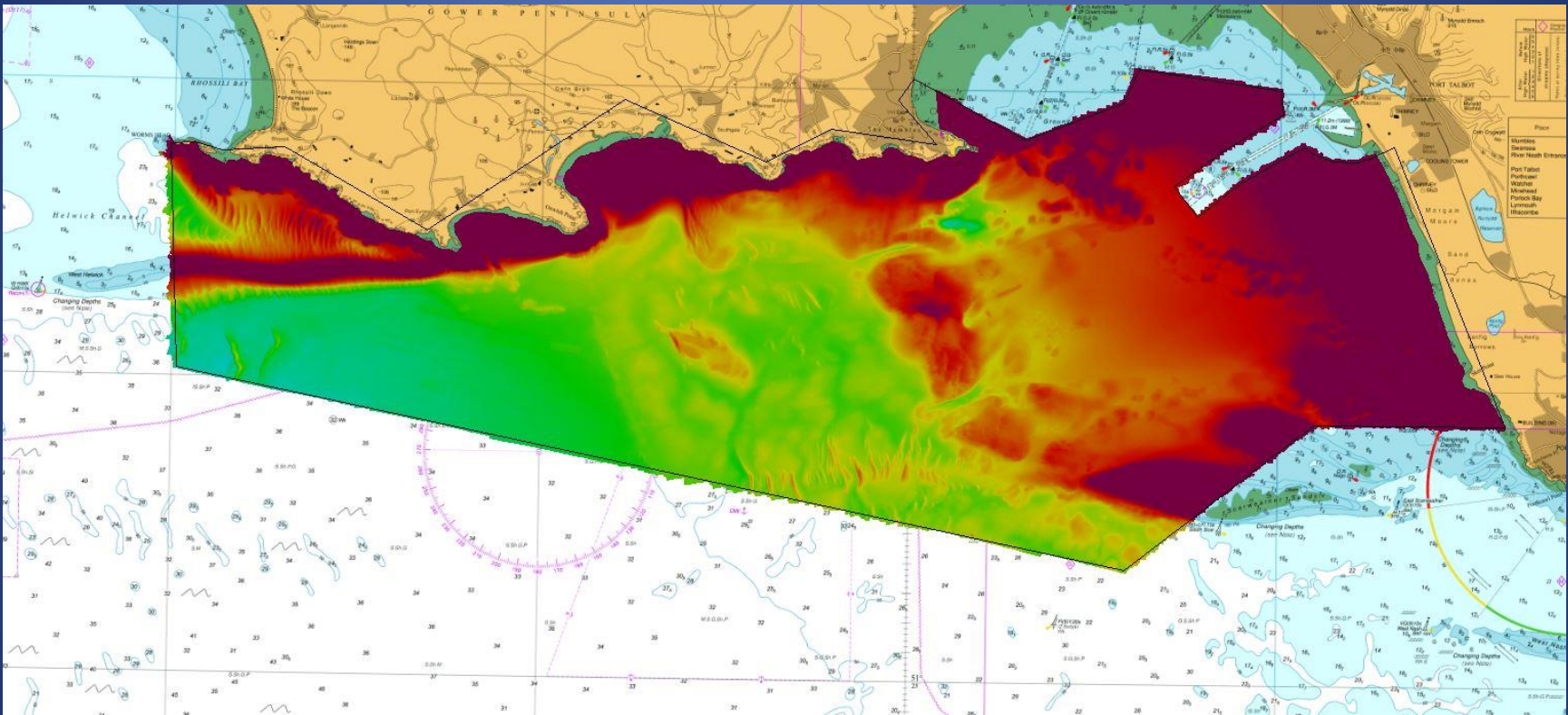
2017/18 Civil Hydrography Programme – Survey Vessels

Bathymetric Surveys



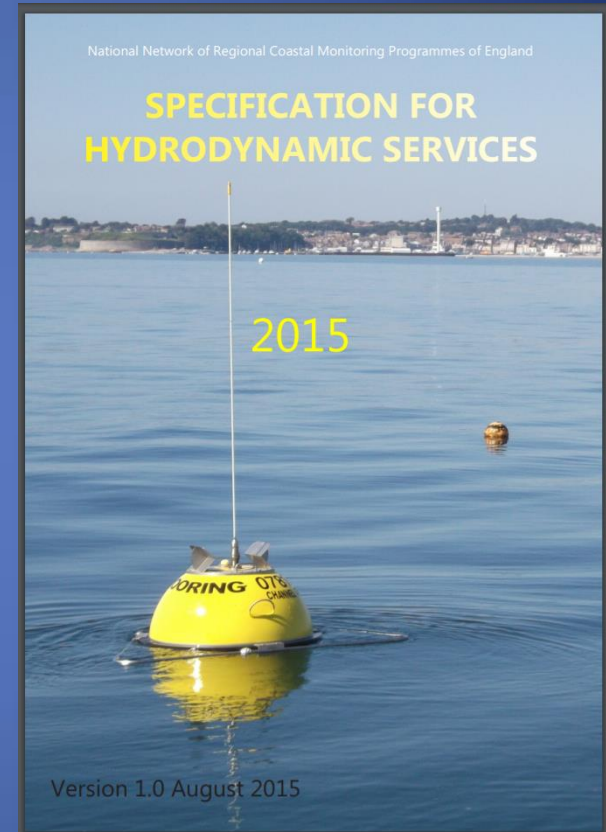
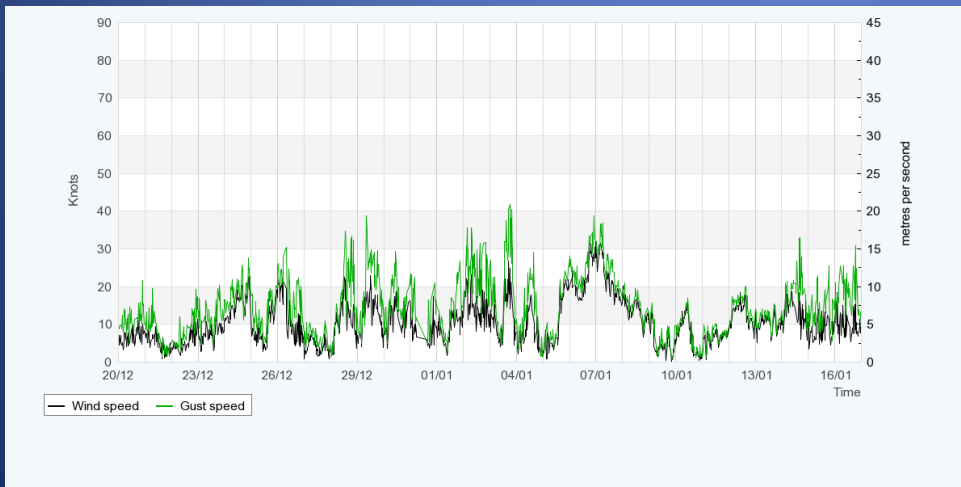
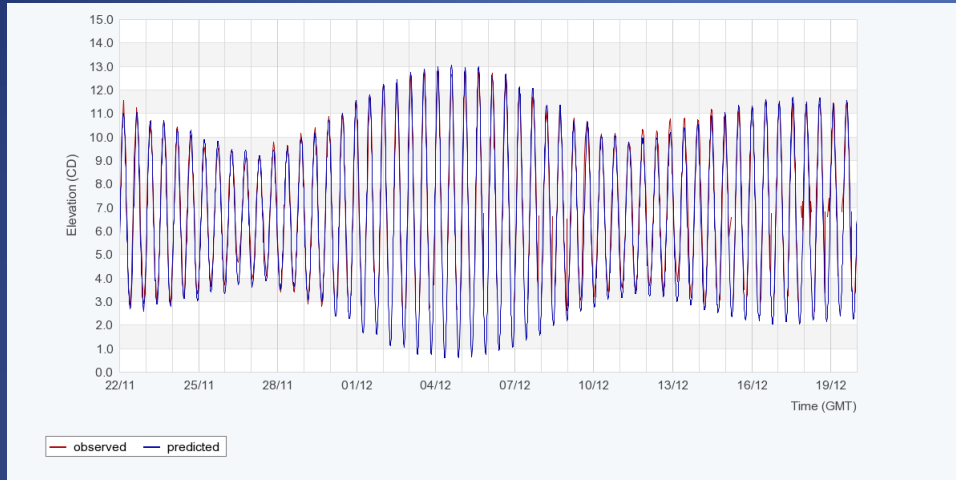
2017/18 Civil Hydrography Programme Coverage

Bathymetric Surveys

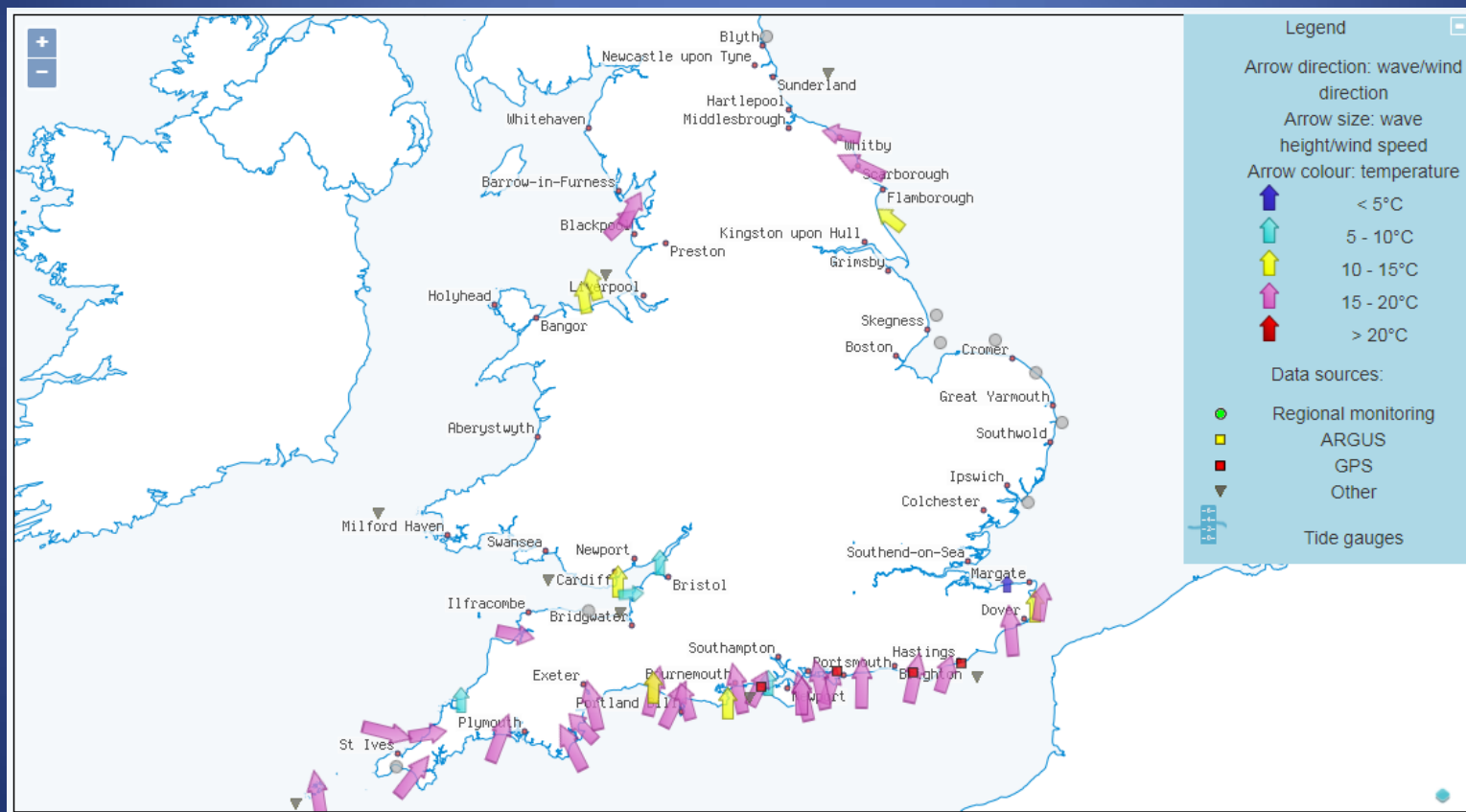


2017/18 Civil Hydrography Programme Coverage

Hydrometric Data



Hydrometric Data



Hydrometric Data



Penarth Pier Wave and Tide gauge installation

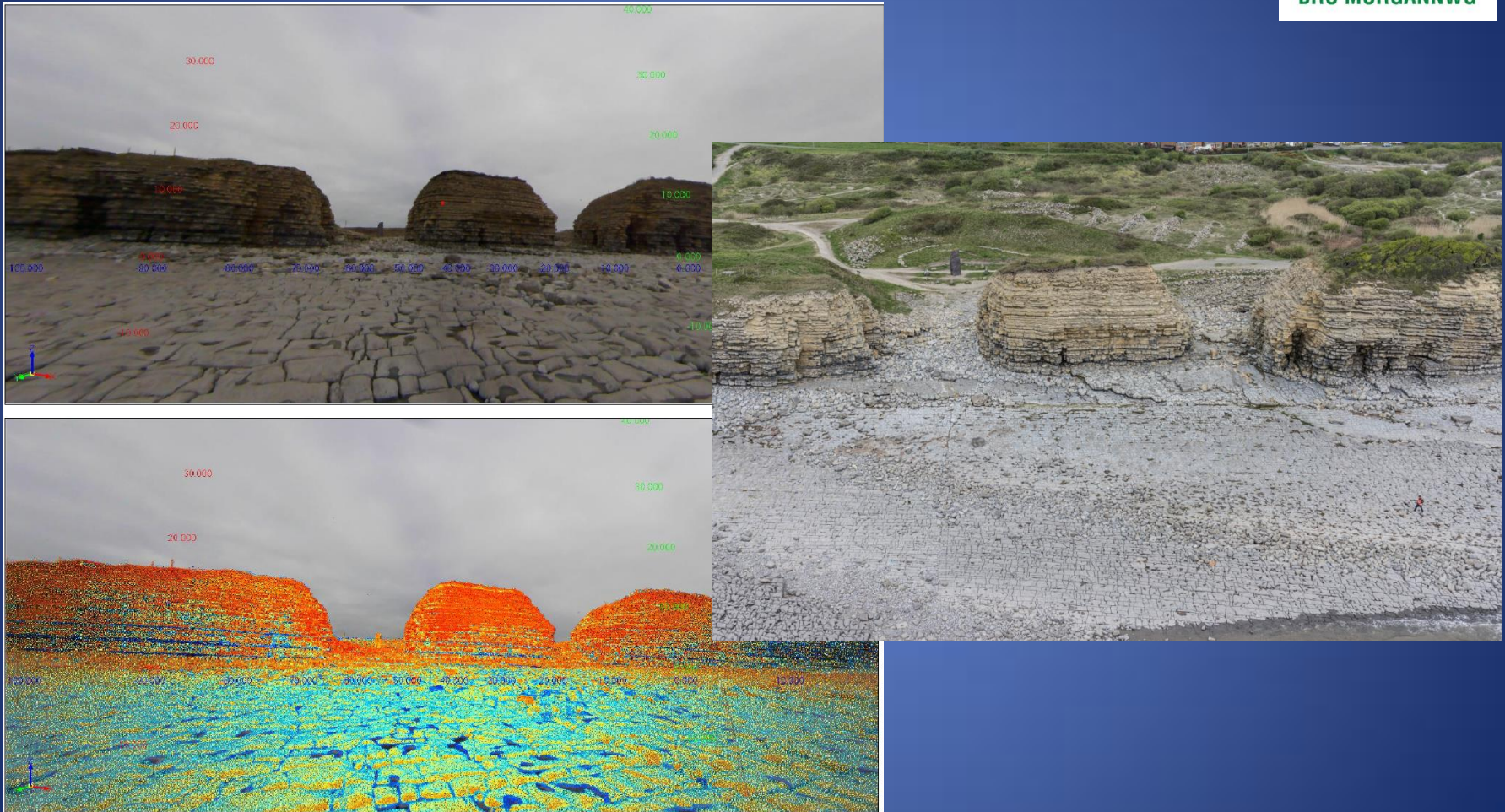
Penarth Observation Platform



UAV Imagery and rope access inspection



Rhoose Point - Cliff Monitoring



Terrestrial Laser Scan & UAV survey – Spring 2017

Future Aims

- Reactive localised monitoring in response to specific issues
- Improved monitoring of coastal structures
- Develop baseline survey of entire coastline
- Active participation in Welsh Coastal Monitoring Centre
- Continued participation in Coastal Groups

Any Questions?

