



# SEVERN ESTUARY FORUM 2014

Conference report

*Severn  
Estuary  
Partnership  
– promoting  
a holistic,  
estuary-wide  
perspective  
for the  
Severn*

# Introduction

The Severn Estuary Forum 2014 was held on Tuesday 16<sup>th</sup> September, in the Julian Hodge Building at Cardiff University. Kindly sponsored by Associated British Ports (ABP), British Marine Aggregate Producers Association (BMAPA), Cardiff University and MarineSpace, the day featured four sessions with a total of 14 speakers and five chairs. Over 150 delegates attended the forum and 16 different companies presented displays. The following report provides a brief summary of each session and associated presentations.

The day started with an introduction from Martin Quaile, Chair of the Severn Estuary Partnership and a welcome address by Cllr Bob Derbyshire of City of Cardiff Council. Bob explained how the development of Cardiff had been closely related to its location on the Estuary. This provided port access for coal exports and resulted in the first ever million pound cheque being exchanged in the Cardiff Coal Exchange. Whilst former heavy industry has declined in the South Wales region, he noted the Estuary's potential for renewable energy and associated economic growth.



*Cllr Bob Derbyshire (centre) provided the welcome address). ©Merryn Thomas.*

## Session 1: Climate Change

The climate change session was chaired by Prof Ian Hall, Head of the School of Earth and Ocean Sciences at Cardiff University. The session featured four presentations.

The first talk, by Louise Pennington from Natural Resources Wales (NRW) looked at the 2013/14 [winter storms and their impacts on the Welsh coast](#). Louise explained the involvement of NRW with regards to flood prediction and management and the use of a 3-tiered flood warning system. In January 2014, the flooding was more widespread than December (2013) in Wales, when over 1050 homes were evacuated. An initial report reviewing the impacts of the flooding was published in January 2014 and a more detailed Phase 2 report covering the wider lessons learnt and key recommendations was produced in April 2014.

The second talk was presented by Christine Marsh from ABP, looking at the [impacts of climate change on industry and particularly ports](#). Christine outlined the challenges to ports associated with rising sea

level, storm surges, rainfall and the changing wind/wave climate. She explained that the risks include impact on the market, navigation depth change, flooding and disruption as well as increases in insurance and health and safety risks. She highlighted some port mitigation actions including attempts to reduce greenhouse gas emissions. In this context, she noted the biomass boiler which has been installed by Swansea ABP.

Merryn Thomas, from Cardiff University presented the third talk of the session, reporting on the findings of research investigating [perceptions of sea level change on the Severn Estuary](#). She explained that understanding public perceptions can help contribute to policy as well as shape how we go about communication of risk. She explained that previous to her study, little was known about how the public perceive sea level change. When asked what people think about the Severn Estuary, her study's responses included the following key words: mud (!), tides and sailing, with issues including ports, global warming and flooding. Merryn explained that there were significant differences between the perceptions of the public and experts. Only about half of the respondents expressed concern about sea level rise and generally most people underestimated it. Thermal expansion was not seen as a contributor to sea level rise, 78% did not think land around the Estuary is sinking (isostatic subsidence) and 60% think sea level rise would be a gradual process. Overall, the study revealed that the public saw the Government and not themselves responsible for reducing the causes and impacts of sea level change. However, respondents expressed distrust in flood defence agencies. Merryn concluded by noting the need for improved communication as a result of these findings.

The final talk of the climate change session was presented by Emerald Siggery from the Plymouth Coastal Observatory. Emerald described the key features of the [coastal monitoring programme for the South West Region](#) which is part of a National Monitoring Programme. She explained that the programme had been set up to provide a standardised and cost-effective programme for monitoring the coast including the establishment of long-term data sets. She noted specific components of the programme, including topographic coastal surveys, LiDAR, aerial photography, ecological mapping and bathymetric surveys. In total, 25 near-shore wave buoys have also been deployed with real-time, as well as vast amounts of archived data available. She noted that data is freely available and is appropriate for a variety of uses and users including local authority engineers, academics, consultants and others. She concluded by outlining the future of the programme, including the need to secure funding for the next phase.



*The Severn Estuary Forum 2014 was held in the Julian Hodge Building, Cardiff University. ©Merryn Thomas*

## Session 2: Estuary Planning

The estuary planning session was chaired by Prof Terry Marsden, Chair of Environmental Policy and Planning in the School of Planning and Geography at Cardiff University. The session featured three presentations. In his introduction, Terry highlighted the need to plan effectively for adaptation, mitigation and sustainability.

Firstly, Paula Whitfield from Welsh Government spoke about the [development of the Welsh National Marine Plan \(WNMP\)](#), which will be in place in 2015 and will be produced in the context of the EU Directive on Maritime Spatial Planning. She noted that the WNMP is committed to sustainable development within the context of the ecosystem-based approach. As the Marine Plan is new, Wales is learning from others worldwide such as Australia, Taiwan and Scotland. She noted the governance arrangements which Welsh Government has put in place to secure engagement with stakeholders: this includes the establishment of a Wider Stakeholder Group and a Stakeholder Reference Group. Paula also outlined recent and future engagement activities in relation to the WNMP, explaining that all public updates would be available on the WNMP [website](#).

Mel Nicholls, from the Marine Management Organisation (MMO) presented a short talk about the [development of the English Marine Plans](#). Mel noted that there will be 11 plans in total (including inshore and offshore plans) which will be completed by 2022. He explained that the East Marine Plans had been the first to be developed. In these and the current plans under development (South Marine Plans) he highlighted the importance of stakeholder engagement and clear communication including workshops, blogging and leaflets. After outlining the key components of the East Marine Plans, Mel



provided a short overview of lessons learnt from the process so far. In this he highlighted the challenges associated with linking national policy and local expectations as well as coordinating all the authorities. As a result of these challenges, he suggested that early engagement with stakeholders is essential and highlighted the importance of a good administrative system.

The final presentation in the estuary planning session was given by Steve Fletcher from Plymouth University who spoke about the [future of coastal partnerships](#), summarising the results of recent research involving surveys with coastal partnership officers and other relevant coastal stakeholders. Whilst noting the different approaches of coastal partnerships around the country, he highlighted the key benefits of these partnerships, notably engaging stakeholders and raising awareness. With a reduction in funding across many partnerships, he suggested that a strong local voice is necessary. This is particularly true given that each partnership has its own local agenda and there is no mechanism for coastal partnerships to communicate to all coastal stakeholders on a national basis, apart from through the Coastal Partnerships Network. To sustain the future of coastal partnerships, many survey respondents had suggested a need for further project work supported by EU funding. Steve noted the potential for the involvement of coastal partnerships in marine planning however, he did point out that this may be currently under-used. Finally, Steve outlined future roles for coastal partnerships. These included supporting the delivery of key legislation, sharing evidence to support shared decisions, managing networks and the opening new communication channels.



*Networking and viewing the displays was a key part of the day. ©Merryn Thomas.*

# Session 3: Energy Generation

The energy generation session was chaired by Johnny Gowdy from Regen SW who highlighted the Severn Estuary as a world class energy resource. In introducing the session, Johnny also stressed the need for a balance between the socio-economic and ecological effects associated with tidal energy.

Mark Shorrock, from Tidal Lagoon Swansea Bay, was first to present. Talking about [tidal lagoons](#), Mark discussed the possibility of doing something at a 'nuclear scale' with renewable energy. He suggested that 'Nuclear can't do it all on its own' and that, in this context, tidal lagoons can be a way forward. Mark then turned his attention to the proposal for Swansea Bay Tidal Lagoon. This 'first' of its kind, is intended to have a design life of 120 years, create 35,000 to 70,000 jobs and generate £27bn UK GDP as well as providing protection against 500-year storms. Mark explained many other potential features of this structure, including the fact that water could be passed through the turbine between the sea and lagoon at a rate of five Olympic swimming pools per second – all of which could be controlled by nature. He also noted that high water springs could be replicated by using turbines as pumps. Noting that a consent decision is due at the end of the year (2014), he suggested that the lagoon would take three years to build.

Nigel Knee from EDF Energy provided an update on [Hinkley Power Station and its impacts on the Severn Estuary](#). Nigel explained that EDF own the existing Hinkley Point B Nuclear Power Station and there are two sites identified within the Severn Estuary for nuclear new-build – Hinkley Point C (owned by EDF) and Oldbury. Development of the proposed Hinkley C would require the construction of a temporary jetty to bring construction material in by sea, and long intake and outfall pipes to utilise cooling water from the Severn. Outtake pipes for the proposed Hinkley C Power Station will release warm water into the Severn Estuary in the same manner as the existing Hinkley Point B Power Station. Due to the environmental designations of the Estuary, long cooling water tunnels are needed to disperse the heat quickly. At the existing Hinkley Point B Nuclear Power Station a fish recovery and return system is in place on the water intakes as well as an acoustic fish deterrent to prevent fish from becoming entrained, however some fish are still lost. Nigel noted that Hinkley has powered 5 million homes for 60 years and provides economic benefits, working with local authorities and businesses. A visitor centre, forums and other engagement helps keep local communities informed and involved.

Andrew Dixon from Dŵr Cymru Welsh Water (DCWW) explained the [Welsh Water renewable energy programme](#) which is on track to reduce their CO<sub>2</sub> by 25% between 2007 and 2015. The programme includes anaerobic digestion, hydropower, solar and wind. Of these anaerobic digestion provides the most significant decrease of CO<sub>2</sub>. He noted that the waste-to-energy scheme at Cardiff Waste Water Treatment Works converts waste into energy through anaerobic digestion. He suggested that this waste to energy scheme is cost effective, reduces carbon and methane emissions and is an efficient way of using resources.



***From left to right: Andrew Dixon, Nigel Knee and Mark Shorrock presented in the energy generation session. ©Merryn Thomas.***



***The Sustainable Places Research Institute was one of the 16 different displays. ©Merryn Thomas.***



# Session 4: Local Issues

The final session, local issues, was chaired by George Ashworth, chair of the Severn Estuary Partnership Management Group, and featured three presentations.

Tim McGrath from the Wildfowl and Wetlands Trust (WWT) spoke about the [development of Steart Marshes wetland](#). Over the last five years, this major coastal realignment project has been developed by the Environment Agency to compensate for loss of internationally important intertidal habitat. The site is now being managed by WWT, and at 500 ha it's the largest wetland habitat creation scheme in the UK. Tim advised that intertidal habitat has been created from pasture land which, over time, will provide a new home for wildlife. Some areas that will be inundated infrequently by the tide will become grazing land. The site will create 300 ha of saltmarsh and act as a natural coastal defence with increased flood storage capacity. The Pathfinder Project has helped to engage the public in the creation of this new habitat.

David Hall, from the Cardiff Harbour Authority, spoke about [Cardiff Bay environmental management and implications for recreational use](#). He noted that, as an engineering project, the creation of Cardiff Bay produced environmental issues, some of which remain. For example, the debris that enters the Bay from the Rivers Taff and Ely now has to be removed by Cardiff Harbour Authority. The level of dissolved oxygen in Cardiff Bay



*From left to right: Mark Russell (BMAPA) and Alexander Portch (Bristol University) both displayed at the forum. BMAPA also sponsored the Forum. ©Merryn Thomas.*

is another management issue: David noted, however, that the aeration system (over 600 diffusers) maintains sufficient dissolved oxygen in the water. He did stress though that there is a need for continuous water quality monitoring for recreation purposes in order to inform restrictions on access. In this context, he noted that blue-green algae are monitored twice a week and highlighted that biosecurity protection is kept at a high level to try to keep invasive species within the Bay.

Finally, Shelley Vince, the Severn Estuary Partnership Officer, provided a [review and update of the Severn Estuary Partnership](#). Over the next year, she suggested that the Partnership's communication tools (including e-news, social media) will continue to be developed as the Partnership continues to engage with and develop stakeholder communication. Shelley noted key work for the Partnership over the next 12 months, including the revision and relaunch of the *Strategy for the Severn Estuary* as well as the update of the *SEP Strategic Business Plan*. She also explained that project opportunities (including potential EU funding from Horizon 2020) are being sought.



# Conclusion

Following very positive feedback on the evaluation forms, 98% of respondents would recommend the Severn Estuary Forum! Here is a selection of quotes:

*'Excellent event - well worth sponsoring and attending!' - Mark Russell, BMAPA*

*'Well run, well done'*

*'Thanks for a great and informative day'*

*'Very interesting day and some great speakers/topics'*

*'Well done!'*

*'Very well run day - thank you'*

Thank you to all who chaired, presented, displayed, attended and helped organise the Forum – it was our biggest so far and the Partnership is looking forward to 2015! If you are interested in sponsoring or displaying at next year's Forum, please contact us at [severn@cardiff.ac.uk](mailto:severn@cardiff.ac.uk).



# Forum Delegates

| Organisation                                   | First name | Surname         |
|------------------------------------------------|------------|-----------------|
| AECOM                                          | Sarah      | Milne           |
| ARUP                                           | Gareth     | McIlquham       |
| Associated British Ports                       | Chris      | Green           |
| Associated British Ports                       | Christine  | Marsh           |
| Atkins                                         | Daniel     | Mulgrew         |
| Atkins                                         | Kath       | Wellard         |
| Atkins                                         | Paul       | Canning         |
| Atkins                                         | Vera       | Jones           |
| BMAPA                                          | Mark       | Russell         |
| Bristol City Council                           | Patrick    | Goodey          |
| Bristol University                             | Alexander  | Portch          |
| Bristol University                             | Mariana    | Dudley          |
| Bristol University                             | Peter      | Coates          |
| Caldicot and Wentlooge Internal Drainage Board | Matt       | Bajowski        |
| Cardiff Council                                | Bob        | Derbyshire      |
| Cardiff Harbour Authority                      | David      | Hall            |
| Cardiff University                             | Ian        | Hall            |
| Cardiff University                             | Jen        | Pinnion         |
| Cardiff University                             | Jenny      | Allen           |
| Cardiff University                             | Merryn     | Thomas          |
| Cardiff University                             | Michaela   | Bray            |
| Cardiff University                             | Paul       | Evans           |
| Cardiff University                             | Reza       | Ahmadian        |
| Cardiff University                             | Rhoda      | Ballinger       |
| Cardiff University                             | Rupert     | Perkins         |
| Cardiff University                             | Sarah      | Lee             |
| Cardiff University                             | Simon      | Wakefield       |
| Cardiff University                             | Sindia     | Sosdian         |
| Cardiff University                             | Terry      | Marsden         |
| Celtic Seas Partnership                        | Dan        | Crook           |
| Celtic Seas Partnership                        | Natasha    | Barker-Bradshaw |
| Chair of SEP Management Group                  | George     | Ashworth        |
| Chair of Severn Estuary Partnership            | Martin     | Quaile          |
| Clevedon Town Council                          | Graham     | Watkins         |
| Climate Change Consortium of Wales             | Lydia      | Beaman          |
| Devon County Council                           | Charlotte  | Pope            |
| Dŵr Cymru Welsh Water                          | Andrew     | Dixon           |
| EDF Energy                                     | Emily      | Kennard         |
| EDF Energy                                     | Nigel      | Knee            |
| Environment Agency                             | Dominic    | Hutchings       |
| Environment Agency                             | John       | Buttivant       |
| Environment Agency                             | Ken        | Moss            |
| Environment Agency                             | Paul       | Olejnik         |
| Environment Agency                             | Ross       | Barton          |
| Forest of Dean District Council                | Alastair   | Chapman         |
| GCAP                                           | Dan        | Black           |
| Glamorgan-Gwent Archaeological Trust           | Sue        | Hill            |

|                                      |           |                |
|--------------------------------------|-----------|----------------|
| Glamorgan-Gwent Archaeological Trust | Edith     | Evans          |
| Gloucestershire County Council       | Dick      | Best           |
| Gloucestershire County Council       | Gavin     | Jones          |
| Gloucestershire County Council       | John      | Cordwell       |
| Gloucestershire County Council       | Meyrick   | Brentnall      |
| GoBe Consultants                     | Louise    | Lieberknecht   |
| HR Wallingford                       | Samantha  | Dawson         |
| HR Wallingford                       | Tom       | Matthewson     |
| Keene Communications                 | Michael   | Jones          |
| Kingston Seymour Parrish Council     | John      | Harris         |
| Lafarge Tarmac Marine                | Ed        | Skinner        |
| Lydney Town Council                  | Brian     | Thomas         |
| Marine Conservation Society          | Clare     | Reed           |
| Marine Management Organisation       | Mel       | Nicholls       |
| Marine Space                         | Claire    | Griffiths      |
| Marine Space                         | Joseph    | Kidd           |
| Mark Pollock Planning                | Mark      | Pollock        |
| Monmouthshire County Council         | Matthew   | Lewis          |
| Mott MacDonald                       | Nicholas  | Price          |
| Monmouthshire County Council         | David     | Harris         |
| National Museum Wales                | Cindy     | Howells        |
| National Museum Wales                | Teresa    | Darbyshire     |
| National Oceanography Centre         | Annie     | Linley         |
| National Oceanography Centre         | Stephen   | Hall           |
| Natural England                      | Colin     | Leppard        |
| Natural England                      | Katie     | Clark          |
| Natural England                      | Maddie    | Goodey         |
| Natural Resources Wales              | Darren    | Walsh          |
| Natural Resources Wales              | Katherine | Route-Stephens |
| Natural Resources Wales              | Louise    | Pennington     |
| Natural Resources Wales              | Nick      | Steele         |
| Natural Resources Wales              | Nicola    | Rimington      |
| Natural Resources Wales              | Rhys      | Morgan         |
| Natural Resources Wales              | Richard   | Facey          |
| Natural Resources Wales              | Simon     | James          |
| Natural Resources Wales              | Tim       | England        |
| Newport City Council                 | Mark      | Stringer       |
| NIRAS Consulting                     | Sara      | Mendez         |
| North Somerset Council               | Clive     | Webb           |
| North Somerset Council               | Peter     | Bryant         |
| North Somerset Council               | Rachel    | Lewis          |
| North Somerset Council               | Robert    | Hanson         |
| Otterhampton Parish Council          | Mervin    | Brown          |
| Parsons Brinckerhoff                 | Peter     | Kydd           |
| Pembrokeshire Coastal Forum          | Jodie     | McGregor       |
| Plymouth Coastal Observatory         | Emerald   | Siggery        |
| Plymouth Marine Laboratory           | Tara      | Hooper         |
| Plymouth University                  | Mark      | Wiggins        |
| Plymouth University                  | Steve     | Fletcher       |
| Regen SW                             | Johnny    | Gowdy          |
| RSK Group                            | Duncan    | White          |
| RSK Group                            | Helen     | Tilton         |

|                                       |           |               |
|---------------------------------------|-----------|---------------|
| RSPB Cymru                            | Sean      | Christian     |
| Sabrina Dreaming (CCRI)               | Antony    | Lyons         |
| Savills                               | Matthew   | Tucker        |
| Sedgemoor District Council            | Anne      | Fraser        |
| Sedgemoor District Council            | Doug      | Bamsey        |
| Severn Bore Surfer                    | Stuart    | Ballard       |
| Severn Estuary Partnership            | Emma      | Evans         |
| Severn Estuary Partnership            | Shelley   | Vince         |
| Severn Estuary Partnership            | Gwilym    | Owen          |
| Severn Estuary Partnership            | Zoe       | Whitlock      |
| Severn Vision Project Partnership     | Esther    | Collis        |
| Somerset County Council               | Philip    | Higginbottom  |
| South Gloucestershire County Council  | Angela    | Bence-Wilkins |
| South Gloucestershire County Council  | David     | Villis        |
| South Gloucestershire County Council  | Gillian   | Ellis-King    |
| South Gloucestershire County Council  | Sally-Ann | Feltham       |
| SSE                                   | Jade      | Fearon        |
| Stroud District Council               | Conrad    | Moore         |
| Stroud District Council               | David     | Lesser        |
| Sustainable Places Research Institute | Alys      | Morris        |
| Sustainable Places Research Institute | Ruth      | Lovell        |
| Swansea University                    | Iain      | Fairley       |
| Swansea University                    | Ruth      | Callaway      |
| Tewkesbury County Council             | Jason     | Westmoreland  |
| The Bristol Port Company              | Anne      | Hayes         |
| The Bristol Port Company              | John      | Chaplin       |
| The Crown Estate                      | David     | Tudor         |
| The Planning Inspectorate             | Debbie    | Moore         |
| Tidal Lagoon Swansea Bay              | Andy      | Field         |
| Tidal Lagoon Swansea Bay              | Eva       | Bishop        |
| Tidal Lagoon Swansea Bay              | Jane      | Davidson      |
| Tidal Lagoon Swansea Bay              | Jeanette  | Reis          |
| Tidal Lagoon Swansea Bay              | Mark      | Shorrock      |
| Tidal Lagoon Swansea Bay              | Tessa     | Blazey        |
| Tidal Lagoon Swansea Bay              | Tim       | Carter        |
| University of East Anglia             | Jill      | Payne         |
| URS                                   | Alex      | Tosetti       |
| URS                                   | Jason     | Drummond      |
| URS                                   | Neil      | Titley        |
| URS                                   | Rebecca   | Binks         |
| URS                                   | Richard   | Knott         |
| URS                                   | Joanne    | Foy           |
| Van Oord                              | Paul      | Hesk          |
| Welsh Government                      | Paula     | Whitfield     |
| West Somerset County Council          | Andrew    | Goodchild     |
| West Somerset County Council          | Corinne   | Matthews      |
| Wildfowl & Wetlands Trust             | Jeff      | Knott         |
| Wildfowl & Wetlands Trust             | Tim       | McGrath       |
| Willowbank Services                   | James     | Hector        |
| WSP                                   | Mike      | Walkden       |
|                                       | Alan      | Brown         |
| -                                     | Colin     | Taylor        |



|  |         |         |
|--|---------|---------|
|  | Janette | Bailey  |
|  | Richard | Lloyd   |
|  | Roger   | Miller  |
|  | Roy     | Osborne |