**ADAPTING TO CLIMATE CHANGE – HOW DO WE CREATE A POSITIVE LEGACY?**

**Louise Barker** (Royal Commission on the Ancient and Historical Monuments of Wales) and **Andrew Davidson** (Gwynedd Archaeological Trust)

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Climate change is usually seen as having a negative impact on the historic environment. We are already living with some of the consequences, and these are predicted to increase in future years. It is essential, therefore, that we learn to adapt to climate change in ways which increase our knowledge of the historic environment and increase our capacity to deal with the changes. There are benefits to be gained from this process, but our success in achieving these will be dictated by our ability to identify new ways of working. For example, cross-sectoral working is being encouraged by governments; community groups are being supported to identify, record and interpret eroding archaeology in coastal locations; and pro-active maintenance of historic structures is being advocated. This session will review the success of these and other measures, and how we can adapt to climate change in ways which produce positive outcomes for both the historic environment and society as a whole.

**SESSION PROGRAMME Thursday 25th April 9:30 – 1pm**

**9:30 -9:35** Welcome and Introduction

 Chair

9:35 – 9:55 **A Sector Adaptation Plan for Wales: incorporating positive values.**

Andrew Davidson (*Gwynedd Archaeological Trust & Historic Environment Wales, Climate Change Sub-group.)*

9:55 – 10:15 **Adapting to Climate Change. A Positive Legacy for Scotland’s historic environment.**

Mairi Davies (Historic Environment Scotland)

10:15 -10:35 **Climate change: Values, Benefits and Legacies. The value of cultural heritage in climate change.**

Hannah Fluck (Historic England)

10:35 – 10:55 **‘Climate is what we expect, weather is what we get’. Managing the positive effects of oceanic climate change on underwater cultural heritage**

Mark Dunkley (Historic England)

11:00 – 11:30 Coffee Break

11:30 – 11:50 **Losing the Edge – Gaining Ground. Studying the past, present and future impacts of climate change on coastal heritage in Wales and Ireland.**

Louise Barker (CHERISH Project, RCAHMW)

11:50 – 12:10 **Historic Landscape Characterisation as a climate change vulnerability assessment tool**

 Isabel Cook (University of Sheffield)

12:10 – 12:30 **From Hills to Sea. Flooding and the historic environment in the North of England**

 *Chris Hewitson (Mott MacDonald)*

12:30 – 12:50 **Theatre in Heritage. Facilitating engagement with environmental and archaeological issues**

Claire Frampton

12:50 – 13:00 Summary/Discussion

 Chair

**ABSTRACTS**

**A Sector Adaptation Plan for Wales: incorporating positive values.**

*Andrew Davidson (Gwynedd Archaeological Trust & Historic Environment Wales, Climate Change Sub-group.)*

A sector adaptation plan for the historic environment has been published for Wales to help raise awareness of the risks and opportunities of climate change for the historic environment and the need for adaptation. The plan was designed from the ‘bottom up’ starting with a table of potential impacts, which were assessed on a scale from High Negative to High Positive. The adaptations required to meet these were based around a three-fold need to improve understanding, build adaptive capacity and increase resilience. Where possible these form a valid contribution to the creation of a positive legacy for the historic environment in Wales.

**Adapting to Climate Change. A Positive Legacy for Scotland’s historic environment.**

*Mairi Davies, David Harkin and Ewan Hyslop (Historic Environment Scotland)*

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Historic Environment Scotland (HES) has a strong legislative foundation from which it has planned its approach to climate change adaptation in the historic environment. This includes providing leadership, support and guidance to the historic environment sector. Our approach to impacts and adaptation in the historic environment has involved working closely with partner organisations, both within the sector and beyond it. In assessing risk from natural hazards to the HES Estate, we have worked in close partnership with British Geological Survey and the Scottish Environment Protection Agency. As part of the Steering Group for Dynamic Coast: Scotland’s Coastal Change Assessment, we have worked across multiple sectors to gain a deep understanding of coastal processes and their implications. Similarly, as a core partner in Edinburgh Adapts, working with multiple partners, we have been able to mainstream the historic environment in a vision and action plan for a climate ready capital city.

**Climate change: Values, Benefits and Legacies. The value of cultural heritage in climate change.**

*Dr Hannah Fluck and Dr Meredith Wiggins (Historic England)*

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The changing climate is already affecting our lives and our heritage. The way in which we value heritage, and the mechanisms by which we seek to conserve it are also affected by climate change. This paper will explore what a changing climate means for the way heritage is perceived and conserved. What impact will climate change have upon the heritage we value? How will our approach to conservation need to change? What can heritage contribute to our current preparations for weathering our future climate?

**‘Climate is what we expect, weather is what we get’. Managing the positive effects of oceanic climate change on underwater cultural heritage**

*Mark Dunkley (Historic England)*

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The effects of natural and anthropogenic climate change on underwater cultural heritage are not wholly understood. We know that the oceans play an important role in mitigating climate change, taking up and storing about a quarter of anthropogenic carbon dioxide emissions through a combination of biological processes, solubility, and circulation patterns. Despite uncertainties in the chaotic climate system, this paper presents an innovative assessment of the potential effects of oceanic climate change on managing underwater cultural heritage in the UK and will identify opportunities arising from the positive benefits of oceanic climate change and will explore how any negative effects can be mitigated.

**Losing the Edge – Gaining Ground. Studying the past, present and future impacts of climate change on coastal heritage in Wales and Ireland.**

*Louise Barker*1*,* James Barry4, Anthony Corns3, Kieran Craven4, Sean Cullen4, Sarah Davies2, Toby Driver1, Geoff Duller2, Hywel Griffiths2, Sandra Henry3, Daniel Hunt1, Cerys Jones2, Henry Lamb2, Edward Pollard3, Helen Roberts2, Patrick Robson2, Rob Shaw3, Hollie Wynne2

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Exploring the methodologies and approaches that the cross-disciplinary CHERISH (Climate, Heritage and Environments of Reefs, Islands and Headlands) team is employing to study the past, present and future impacts of climate change on the rich cultural heritage of the Welsh and Irish coast and seas.

CHERISH is developing a field methodology and toolkit for the study of both terrestrial and marine environments, including LiDAR to target data and knowledge gaps and remote sensing and invasive techniques for the detailed survey and investigation of threatened sites to provide highly accurate baseline data for future monitoring and pre-emptive preservation by record in the face of inevitable loss. Palaeoenvironmental sequences and luminescence dating is also being used to establish records of past storminess which combined with documentary evidence, provide a long-term context to current and near future risks, as well as an insight into the nature of extremes faced by past communities.

**Historic Landscape Characterisation as a climate change vulnerability assessment tool**

*Isabel Cook (University of Sheffield)*

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My paper proposes a new method of assessing the vulnerability of the historic environment to climate change and identifying sustainable management options.

Of the forward-looking vulnerability studies that exist, the majority focus on archaeological sites as individual entities, adopting a site-by-site perspective. These studies do not provide a full picture of the threat to cultural heritage, for instance the impact on any features in the landscape that are not classified as ‘sites’, or on the character of the historic environment.

With a focus on the Dysynni valley, Wales, this paper proposes using Historic Landscape Characterisation as an alternative approach to vulnerability assessment. This landscape-level perspective will assess the vulnerability of the character of the historic landscape to climate change, rather than which individual assets are most at risk. The outcomes of this may be used to inform a holistic, proactive approach to the sustainable management of the Dysynni’s cultural heritage.

**From Hills to Sea. Flooding and the historic environment in the North of England**

*Chris Hewitson (Mott MacDonald)*

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On Boxing Day 2015, the North of England experienced the worst floods in living memory. The paper will examine how human action has changed the landscape and how part of the solution may lie in changing that landscape back.

The rivers of the North of England rise on the bleak moors of the Pennines. On their way to the tidal creeks and estuaries of the sea they pass towns, cities, industry and agricultural land which confine their courses contributing to flooding.

The paper uses examples from Environment Agency and local authority flood defence schemes in the North of England to ask key questions: Is the landscape we are seeing today the landscape of the past? How can these schemes create a positive impact on the historic landscapes and assets? It will use the case study of Greatham Creek to relate how radical change to a landscape can be beneficial.

**Theatre in Heritage. Facilitating engagement with environmental and archaeological Issues**

*Claire Frampton*

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I am currently undertaking a professional research portfolio exploring the potential of creative drama as a learning tool in museums and heritage. What are the unique benefits and potential of drama as a learning tool in heritage? Using case studies, I will speak about theatre in heritage and how it facilitates engagement with archaeological and environmental issues. This includes:

• Creative performances as part of anti-oil protests, held at the British Museum. These performances were not part of the official programme of the museum and showcases where changes in the environment relating to archaeological projects and exhibitions have inspired theatrical protest.

• ‘Millions of Years’, an official performance at the British Museum based on Phillip Glass’s Opera ‘Akhnaten’ included engagement with environmental issues in the present and future. This included a scene where archaeologists from the future find out about our society through traces of plastic left behind.