

# Weather Beaten Archaeology Conference

7-8 March 2015, Institute of Technology Sligo, Ireland

Revealing, Concealing & Erasing

## Conference Programme & Book of Abstracts



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**I'm delighted to welcome delegates to the inaugural Weather Beaten Archaeology Conference at IT Sligo.**

This conference is the first of its kind and seeks to establish a forum for the exchange of experiences of extreme weather events and their impact on archaeological and heritage sites.

IT Sligo has a proud tradition when it comes to making archaeology accessible to young people. It is the only third level institution to offer BSc and Higher Certificate courses in Applied Archaeology. The Institute aims to provide the most practical, focused and scientific training in archaeology available anywhere. As well as covering the traditional 'humanities' aspects of archaeology, our programmes also teach scientific analysis techniques such as geophysical survey, forensic archaeology, zooarchaeology, and practical skills such as project management, geographical information systems, surveying and excavation.

You'll have noticed that our campus is situated in a region of outstanding natural beauty. Sligo also provides a significant historical footprint of our past. Despite its relatively small size, More than 200 megalithic monuments can be found in the county.

Overlooking the campus are two distinctive mountain ranges: Benbulbin and the Dartry mountains to the north; and Knocknarea near the Atlantic coast. It was on this mountain last year that archaeologists from the Institute discovered bones of a Neolithic child and an adult in a tiny cave. Radiocarbon dating has shown that they are some 5,500 years old, which makes them among the earliest human bones found in the country.

The area's proximity to the Atlantic Ocean provides wonderful opportunities in terms of tourism and heritage – but also significant challenges. That's why this weekend's conference, which examines the effects of extreme weather on archaeological sites, has never been more relevant. In my view, sharing knowledge is a key enabler in plotting the way forward. The Institute is privileged to host an event, which I'm confident will help enhance best practice when it comes to preserving Ireland's landmarks and artifacts of historical significance. I want to congratulate Dr. James Bonsall and the organisers of this conference.

Finally, if you're a visitor this weekend, I hope you take the opportunity to sample all that Sligo has to offer.

Céad Míle Fáilte Romhaibh Go Léir.

Professor Vincent Cunnane,  
President,  
IT Sligo

# Welcome to the Weather Beaten Archaeology Conference

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The sheer power of storm events are deeply evocative and their capability for destruction capture the imagination. We grow up listening to stories of lost Atlantean cities and Flood Myths that continually warn us of tidal and deluge events, yet when they occur we are as much surprised at their ferocity as we are at the inability of governments to adequately respond and protect local communities, infrastructure and agriculture, let alone the protection of heritage sites.



Following the Winter Storms of 2013-14, a number of professional and amateur archaeologists shared their finds and images of recently revealed, weather-beaten and storm-damaged sites on social media. The mainstream media seized upon these new 'discoveries' too and soon many stories from across NW Europe were reported by newspapers, TV and radio. By January 2014 the Weather Beaten Archaeology group began to collect these reports together on dedicated Facebook & Twitter pages, which in turn prompted further reports by other like-minded researchers.

It quickly became apparent that coastal researchers across Europe have experienced common challenges, particularly with regards to monitoring, recording and providing adequate excavation & post-excavation for the large numbers of vulnerable and previously unknown sites, whilst others have already developed successful mitigation strategies and citizen science schemes. It was clear that a conference capturing these issues would be an excellent opportunity to exchange experiences between researchers across a range of disciplines.

Of course, our weather-beaten theme is not exclusive to coastal erosion nor the impact of tidal surges. Battering winds, rainwater damage to stone monuments and even climate-induced lichen growth are all being examined by our speakers, who include not only archaeologists, but climatologists, botanists, historians, geographers and policy makers. Our scope is truly international, with 25 speakers from Ireland, France, Iceland, the UK and Canada, examining sites spread far and wide, from Orkney to Newfoundland. Our Keynote address will be given by Professor Vince Gaffney of the University of Bradford, who will be talking about one of the largest known tidal events ever to affect humanity - the inundation of the palaeolandscape of Doggerland under the North Sea - which will include a very exciting new discovery that was published by Professor Gaffney just last week.

Building on our social media origins, we'll be tweeting live throughout the conference sessions and social activities (@floodedheritage) and we invite you to spread the word to colleagues you think might be interested - you'll find wifi connections throughout the venue.

Finally, I do hope you join in our social programme - we'll be dining at the exclusive Canis Major venue in the Clarion Hotel on Saturday evening and for those of you staying in the Sligo area on Sunday afternoon, you may wish to join our field trip out to the beautiful beaches of Strandhill, to visit some of County Sligo's own weather-beaten archaeology.

Dr. James Bonsall MIAI      [Bonsall.James@ITSligo.ie](mailto:Bonsall.James@ITSligo.ie)  
Applied Archaeology, Dept. of Environmental Science, School of Science,  
IT Sligo

## Sponsors

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The organisers of the Weather Beaten Archaeology Conference would like to sincerely thank all of our sponsors for their generous support:



## Wifi & Social Media

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IT Sligo, the Clarion Hotel and the Conference organisers are pleased to offer a number of free wifi options throughout your participation at the Weather Beaten Archaeology Conference.

### Conference Venue Room A006

"Eduroam" (Eduroam Account Required)

"Archaeology Conference"

Wifi Password: Aconference

"Vodafone mobile Wifi F5B181"

Wifi Key: 5757229112

### O'Hehirs Food Court

"Eduroam" (Eduroam Account Required)


"Archaeology Conference"

Wifi Password: Aconference

### The Clarion Hotel

Free wifi - No password required



 /weatherbeatenarchaeology

 @floodedheritage



# Organisation

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## Conference Committee

Dr. James Bonsall MIAI, Assistant Lecturer in Archaeology, IT Sligo  
Rory Connolly, Undergraduate, IT Sligo  
Ciarán Davis, Undergraduate, IT Sligo  
Aidan Dowd, Undergraduate, IT Sligo  
Michael Gleeson, Undergraduate, IT Sligo  
Ciara Losty, Undergraduate, IT Sligo  
Nadine Morrison, Undergraduate, IT Sligo  
Sally Siggins, Undergraduate, IT Sligo

## Communication Manager

Austin O'Callaghan, IT Sligo

## Photo Credits

Ciarán Davis, Undergraduate, IT Sligo  
Sam Moore BA, PhD Candidate and Lecturer in Archaeology, IT Sligo





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# Programme at a Glance

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## Friday March 6th

8.00pm-11.00pm Informal Drinks Reception - we invite you to join us for some Welcome Drinks at the Kudos Bar in the Clarion Hotel, a 5 minute walk from IT Sligo (see map)

## Saturday March 7th - Conference: Day 1

9.00-10.00am Registration  
10.00am Opening Address  
10.10am Session 1: "Inundated with Data: Current & Future Policy Decisions"  
11.25am Tea and Coffee  
11.55am Session 2: "Citizen Science & Community Engagement Schemes"  
1.00pm Lunch at O'Hehirs Food Court, IT Sligo  
2.00pm Session 3: "Heritage Under the Sea" Including the Keynote Address  
3.25pm Tea and Coffee  
3.55pm Session 4: "Mitigation: Monument Monitoring & Protection Methods"  
5.15pm Day 1 - Close

7.30pm Conference Dinner (€25 pp, three course meal & tea/coffee). Join us in Canis Major at the Clarion Hotel, a 5 minute walk from IT Sligo (see map)

## Sunday March 8th - Conference: Day 2

9.30am Session 5: "Remedial & Conservation Works"  
10.35am Tea and Coffee  
11.05am Session 6: "New Discoveries & Future Challenges"  
12.20-12.35pm Closing Address

12.35-3.30pm Field trip  
If you're staying in Sligo on Sunday afternoon, why not join us on an unofficial field trip (car sharing) to Strandhill, Co. Sligo, where a variety of weather-beaten archaeological sites will be explored. A number of food outlets are available at Strandhill for those of you wishing to purchase lunch.



# Sessions and Speakers

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## Saturday March 7th - Conference: Day 1

**9.00-10.00 Registration**

**10.00 Opening Address: Dr. James Bonsall**

**10.10-11.25**                      **Session 1 (Chair: Robert M Chapple)**  
**“Inundated with Data: Current & Future Policy Decisions”**

**10.10 Dr. Kieran Hickey** (University College Cork)  
*The Storminess Record of Ireland from AD 1500 - 2014 and Future Vulnerability*

**10.25 Pauline Gleeson** (National Monuments Service)  
*Recent evidence of extreme weather impact on our archaeological heritage*

**10.40 Beatrice Kelly** (The Heritage Council)  
*Weather or not: threats and opportunities for Ireland’s maritime heritage*

**10.55 Dr. Kieran Westley** (University of Ulster)  
*Assessing the impact of coastal erosion on archaeological sites: current research from Northern Ireland*

**11.10 Discussion**

**11.25 Tea & Coffee**

**11.55-1.00**                      **Session 2 (Chair: Sam Moore)**  
**“Citizen Science & Community Engagement Schemes”**

**11.55 Dr. Pau Olmos Benlloch<sup>1</sup>, Dr. Elias López-Romero<sup>2</sup> & Dr. Marie-Yvane Daire<sup>1</sup>** (<sup>1</sup>Project ALERT, Université de Rennes, <sup>2</sup>Durham University)  
*Coastal erosion and Public Archaeology in Western France: recent experiences from the ‘Alert’ Project*

**12.10 Tom Dawson, Joanna Hambly & Ellie Graham** (The SCAPE Trust, University of St Andrews)  
*Scotland’s Coastal Heritage at Risk Project, a citizen science approach to a national heritage issue*

**12.25 Dr. Scott Timpany** (ORCA Marine & Archaeology Institute, University of the Highlands and Islands)  
*From coast to coast: investigating submerged forests in Orkney and the Pett Level, Sussex*

**12.40 Poster: Byron Jones** (Glascarraig Research Project)  
*Glascarraig Motte and Bailey Survey*

**12.45 Discussion**

**1.00-2.00 Lunch (O’Hehirs Food Court, IT Sligo)**

2.00-3.25

**Session 3 (Chair: Dr. James Bonsall)**  
**"Heritage Under the Sea"**

**2.00 Keynote Address**

**Prof. Vince Gaffney** (University of Bradford)

*Weather is what you get! Issues and opportunities in the study of inundated palaeolandscapes*

**2.40 Prof. Aidan O'Sullivan, Dr. Rob Sands, Mary Dillon** (University College Dublin)

*Don't mind the weather: Canute was right – it's the tides that you have to worry about, ...and you can't stop them*

**2.55 Fionnbarr Moore** (Underwater Archaeology Unit, National Monuments Service)

*Battening down the hatches: challenges faced by the Underwater Archaeology Unit (UAU) in dealing with impacts and threats to underwater cultural heritage from recent weather events*

**3.10 Discussion**

**3.25 Tea & Coffee**

3.55-5.15

**Session 4 (Chair: Dr. Marion Dowd)**  
**"Mitigation: Monument Monitoring and Protection Methods"**

**3.55 Dr. Fiona Beglane<sup>1</sup> & Jerry O'Sullivan<sup>2</sup>** (<sup>1</sup>Institute of Technology Sligo, <sup>2</sup>Galway County Council)  
*A shore chapel at Staad, County Sligo*

**4.10 Michael Lobb, Prof. Anthony G. Brown & Dr. Julian Leyland** (University of Southampton)  
*Developing Terrestrial Laser Scanning for Coastal Archaeological Sites and Site Condition*

**4.25 Dr. Matt Pope<sup>1</sup> & Dr. Martin Bates<sup>2</sup>** (<sup>1</sup>Institute of Archaeology, University College London, <sup>2</sup>University of Wales Trinity St. David)  
*Storm Damage to the Neanderthal Site of La Cotte de St Brelade, Jersey: NERC-Funded urgency fieldwork in 2011 and on-going site protection works*

**4.40 Dr. Stephen McCabe<sup>1</sup>, Dr. Patricia Warke<sup>2</sup>, Daniel McAllister<sup>2</sup> & Dr. Donal Mullan<sup>2</sup>** (<sup>1</sup>Northern Ireland Environment Link, <sup>2</sup>Queen's University Belfast)  
*Climate change and stone heritage: 'deep wetting' and decay processes*

**4.55 Poster: Maria L. Cullen<sup>1</sup> & Howard F. Fox<sup>2</sup>** (<sup>1</sup>AlphaTaxa, Dublin City University Innovation Centre, <sup>2</sup>National Botanic Gardens)  
*Reading the "ruin" stones*

**5.00 Discussion**

**5.15 Day 1 - Close**

**7.30 Conference Dinner, Canis Major, Clarion Hotel**

## Sunday March 8th - Conference: Day 2

9.30-10.35

### Session 5 (Chair: Dr. Fiona Beglane) "Remedial & Conservation Works"

- 9.30 Peter Brown** (Durham University)  
*Aeolian sand as a hazard in medieval Britain*
- 9.45 Gary Dempsey** (RealSim)  
*What lies beneath - revealing the cross inscribed stones and cross slabs of Co. Roscommon using Structure From Motion (SFM) photogrammetry*
- 10.00 Lilja Björk Pálsdóttir** (Institute of Archaeology, Iceland)  
*The sea gives and the sea takes: An eroding fishing station*
- 10.15 Poster: Muireann Ní Cheallacháin** (University College Cork)  
*Climate change and Coastal Heritage: An assessment of the impact of sea erosion on Coastal Promontory Forts in Ireland*
- 10.20 Discussion**
- 10.35 Tea & Coffee**

11.05-12.35

### Session 6 (Chair: Dr. James Bonsall) "New Discoveries & Future Challenges"

- 11.05 Poster: Robert Henshall** (Institute of Technology Sligo)  
*A Game of Bones Down the Rabbit Hole: Rapid Storm Erosion of an Early Christian Cemetery*
- 11.10 Dr. Cathy Daly** (Heritage Management and Conservation Specialist)  
*The prospects for Ireland's World Heritage in a changed climate*
- 11.25 Michael Gibbons** (Independent Archaeologist)  
*Revealing A Connemara Doggerland? Winter Storms of 2014*
- 11.40 Dr. Thomas P. Nelligan** (The Standing Stone)  
*Coolbanagher Castle and Social Media Outrage*
- 11.55 Marc Storey, Ariel Pollard-Belsheim, Christina Robinson & Trevor Bell** (Memorial University of Newfoundland)  
*Assessing the vulnerability of archaeological sites to coastal inundation in Newfoundland and Labrador*
- 12.10 Discussion**
- 12.25 Closing Address: Dr. James Bonsall**
- 12.35 Day 2 - Close**

12.35-3.30 **Field trip**

Join us on unofficial field trip (car sharing) to Strandhill, Co. Sligo, where a variety of weather-beaten archaeological sites will be explored.

A number of food outlets are available at Strandhill for those of you wishing to purchase lunch.

## Abstracts

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### Session 1 "Inundated with Data: Current & Future Policy Decisions"

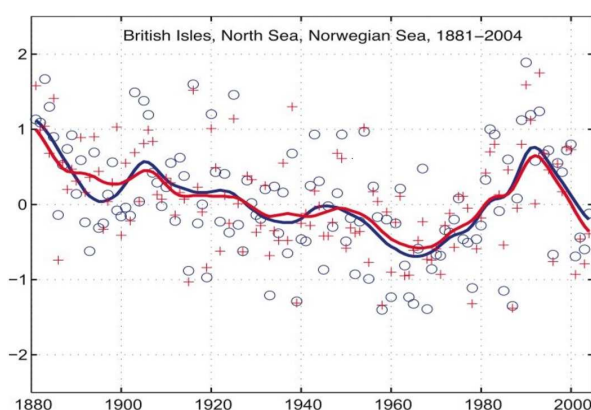
**Dr. Kieran Hickey**

Department of Geography, University College Cork, Ireland

#### "The Storminess Record of Ireland from AD 1500 - 2014 and Future Vulnerability"

This paper will reconstruct the storminess record for Ireland from AD 1500 onwards. The storminess record will be based on a variety of historical sources, early non-standard instrumental weather data and later standardised instrumental weather data. In particular there will be a focus on the more extreme events (those with high wind speeds and/or long duration) as these are the ones which cause most coastal damage including coastal flooding, coastal erosion and coastal sand movements. Consideration will be given to separating out the winter mid-latitude storm record from the earlier late summer/early autumn tail ends of Atlantic hurricanes and their occurrence in Western Europe.

This paper will show that there have been considerable variations in storminess since AD 1500, most notably since the late 1800's a general decline with the exception of the late 1980's and early 1990's and in doing so put the exceptional winter of 2013 - 14 into context.



Storm index for the British Isles, North Sea and Norwegian Sea, 1881 to 2004 (updated from Alexandersson et al., 2000).

Finally the paper will look at what the Global Circulation Models are saying for Ireland in terms of changes in the wind regime. The possible implications of the loss of Arctic sea ice

will also be discussed, as will the probable rise in the numbers of the tail ends of Atlantic hurricanes reaching Ireland as the century progresses.

**Pauline Gleeson**

Senior Archaeologist, National Monuments Service, Dept. Arts, Heritage and the Gaeltacht, Ireland

**“Recent evidence of extreme weather impact on our archaeological heritage”**

The winter storms of 2013 - 2014 resulted in an unprecedented surge of reports of threat or damage to our archaeological heritage. The National Monuments Service of the Department of Arts, Heritage and the Gaeltacht has collated and examined the information reported to them throughout 2014 by landowners, concerned members of the public, Local Authorities and state heritage organisations as well as the results of their own work to show striking evidence of the effects of severe weather events on our unique but vulnerable archaeological heritage. This paper examines the types of sites and monuments most affected and the challenges presented.

## **Beatrice Kelly**

Head of Policy and Research, The Heritage Council, Ireland

### **“Weather or not: threats and opportunities for Ireland’s maritime heritage”**

This paper focuses on the risks to the archaeology and maritime heritage of Ireland’s coast in the light of the winter storms in 2013/14. It will examine government policies for coastal management and heritage, including data management and how these risks are addressed. The possibilities of reducing risk through citizen science programmes will be presented.

The Heritage Council published a report in 2009 with Failte Ireland “Climate change, heritage and tourism, Implications for Ireland’s Coast and Inland Waterways” in which a range of potential impacts and risks facing maritime heritage were identified. The extreme storm events of the 2013/14 winter demonstrated the potential impacts and risks of climate change, and raised concerns whether the processes have begun. Evidence from National Monuments Service, local authorities and recent EPA STRIVE reports on climate change contribute to the debate.

Government policy on the coast and its management, is also an important context. There is a view that the main threat to our coasts are in fact from ourselves. The under - surveying of our coasts, and with the widespread belief in the unchanging nature of our coasts supports this position. How can this situation be reconciled with citizen science programmes, and what can we learn from the experience of colleagues working in natural heritage? Where can improved public policy help?

Those questions will be addressed through examples from the HC / Failte Ireland report, supplemented by records and experience from 2013/14 storms from local authority and Dept of Arts Heritage and Gaeltacht sources. Examples from Scotland and Ireland in the scope for citizen science will be examined for recording, and applied to awareness raising.

## **Dr. Kieran Westley**

Research Associate, Centre for Maritime Archaeology, University of Ulster, Northern Ireland

### **“Assessing the impact of coastal erosion on archaeological sites: current research from Northern Ireland”**

This paper will present the results of a recent study which assessed the potential impact of coastal erosion on archaeological sites across the entire shoreline of Northern Ireland. It was commissioned by the Northern Ireland Environment Agency as part of a wider strategic overview of the impact of climate change on archaeological sites which was conducted in 2011-2013. The initial stages of the research comprised desk-based analysis of an extant suite of oblique aerial photographs. This enabled construction of a baseline map of eroding locations and coastal geomorphology which was subsequently integrated with existing historic environment records (HERs) to obtain a first-pass archaeological vulnerability assessment for the entire province. Follow-up research, currently ongoing, has involved field survey of the eastern shoreline of Lough Foyle, an area identified as being at high risk from erosion from the initial assessment. Survey results have been used to refine the initial assessment and confirm if recorded sites have been affected by erosion, or if new sites have been revealed. While no major new sites have been revealed, the survey results suggest that at least 3 recorded sites have been lost within the last 10-20 years. Ultimately it is hoped the both the desk- and field-based components will form the basis of improved predictions of the threat facing Northern Ireland’s coastal archaeological heritage from future erosion.

**Session 2**  
**"Citizen Science & Community Engagement Schemes"**

**Dr. Pau Olmos Benlloch<sup>1</sup>, Dr. Elias López-Romero<sup>2</sup> & Dr. Marie-Yvane Daire<sup>1</sup>**

<sup>1</sup>CREAAH Laboratoire Archéosciences, Université de Rennes, France

<sup>2</sup>Dept of Archaeology, Durham University, England

**"Coastal erosion and Public Archaeology in Western France: recent experiences from the 'Alert' Project"**

Since 2006, the ALeRT (*Archéologie, Littoral et Réchauffement Terrestre*) project, has brought together researchers involved in coastal archaeology aiming at establishing an interdisciplinary approach to coastal archaeological vulnerability, site monitoring and heritage management. The study area covers the West of France (Lower Normandy, Brittany and Pays de la Loire) and corresponds to 2,974 km of coastline. In the West of France current estimates indicate that more than 2500 archaeological sites are severely threatened within 100 meters of the shoreline. As a result of this, a dedicated tool for the vulnerability assessment of coastal archaeological heritage was developed: the Vulnerability Evaluation Form (VEF). The VEF is a ten-variable grid aimed at providing a snapshot of the state of preservation of coastal archaeological sites through direct observation in the field. Resulting from various experiences in Western France, but also in NW Iberia, the need for an improved field data collection and data management procedures led us to develop a web and a mobile application for administering users and adding field data. The App. has been put to the test in 2014, when an exceptional run of winter storms have severely affected the coasts of Brittany and a number of sites have been damaged after a combination of heavy rains, strong winds, high waves and high tides. However, and thanks to the collaborative initiative, damages in archaeological sites were indicated by locals making it possible to photograph and analyse them.



**Tom Dawson, Joanna Hambly & Ellie Graham**

The SCAPE Trust, University of St Andrews, Scotland

**“Scotland’s Coastal Heritage at Risk Project, a citizen science approach to a national heritage issue”**

Natural processes affect coastal heritage around the world. Archaeological sites are in danger from high tides and storm surges. The threat is not new, but there is mounting evidence that climate change is causing an increase in the frequency and intensity of storm events, with more damaging consequences for irreplaceable cultural heritage.

In Scotland, thousands of sites are at risk and the scale of the problem outstrips currently available resources. In a positive response to the problem, the Scotland’s Coastal Heritage at Risk Project (SCHARP) applies a citizen science approach; updating and enhancing coastal heritage records and helping prioritise action at the most vulnerable and valued sites. The public are given direct access to archaeological survey data through an interactive website and mobile app. These allow users to update records on location and volunteers are trained to use the technology and undertake rapid archaeological survey. The results provide an up-to-date snapshot of the state of Scotland’s coastal heritage resource and highlight areas and sites most in need of action. The surveys also capture local value and community ambition for threatened sites. Collaborative projects are currently underway at twelve locally-valued sites nominated by communities.

This award winning project provides a model that can be applied and developed around the globe. It works with communities to generate archaeological data which informs regional priorities and national policies. It provides a mechanism for the public to contribute to improved management of endangered heritage.

In this paper, we will provide an overview of SCHARP; consider the challenges and successes we have experienced along the way and evaluate the impact of the project after two and half years.

## **Dr. Scott Timpany**

Environmental Geoarchaeologist, ORCA Marine & Archaeology Institute, University of the Highlands and Islands, Scotland

### **“From coast to coast: investigating submerged forests in Orkney and the Pett Level, Sussex”**

Submerged forests represent the fossilized remnants of actual past woodlands, which date mainly from the Mesolithic to the Bronze Age. They have been recorded in coastal locations around the British Isles since the late eighteenth century, when they were associated with mythical lost lands and subsidence of land into the sea. However, despite these initial accounts only a handful of sites have ever been fully investigated. Recently they have been brought to prominence once more as deposits become exposed following storms, leading to a higher volume of media coverage.

In Orkney small areas of submerged forests are often present in the intertidal areas of sheltered bays and funding by Historic Scotland, Orkney Islands Council and the Orkney Archaeological Society are allowing these prehistoric woodlands to once again be brought to life. This is of particular relevance in Orkney where there has been an ongoing debate as to the character of Orkney’s woodland during prehistory and what resources may have been available to people at the time. Together with the remains of trees, investigations have also led to an important archaeological discovery that changes the way we perceive Orkney’s former woodland.

The Pett Level, Sussex contains one of the most extensive submerged forests in the British Isles with tree remains recorded across an area of approximately 1.5km, with exposed trunks of up to 11m in size. A community engagement project funded by English Heritage was undertaken in September-October 2014 to record and sample this remnant woodland. The project has not only enabled members of the local community to become involved with and indeed to potentially take over the recording of the woodland but is also providing valuable palaeoecological data on Mesolithic woodland on the south coast of England.

This talk aims to discuss some of the results that are coming out of these submerged forest sites, located some 780 miles apart from palaeoecological work taking place (e.g. pollen analysis, insect analysis, waterlogged plant remains and dendrochronology), together with the benefits of working with local community groups.

## **Byron Jones**

Archaeologist, Glascarraig Research Project, Ireland

### **“Glascarraig Motte and Bailey Survey”**

The story of Glascarraig begins with the hand over of its lands in 1175 to Raymond 'Le Gros' Fitzgerald. This region came to him as a present from Strongbow for Raymond's leadership qualities in battle at Waterford and Dublin as well as being the Constable in Chief of the province of Leinster. Raymond led the second Invasion of Ireland by the Normans in the May 1170. He landed a small attacking fleet of ships in South County Wexford and immediately constructed a Fortification.

The lands of Glascarraig lie on the Wexford coastline 15km south-east of Gorey. Raymond 'le Gros' Fitzgerald or one of his Caunteton heirs built the Motte, Bailey and Wooden tower around the 1190s. The wooden tower castle of 12m was constructed on top of the Motte. The Mound measure 6m in height, with a diameter at the base of 35m and 13m at the top. The width of the fosse is 7.7m in the north-east section and 9.9m in the western section. In height it is an average of around 4m. The ditch may have included a wooden stockade.

In the early 1960s antiquarians led by Father Joseph Ranson, Administrator of Ensicorthy Cathedral, excavated at Glascarraig Motte. The site is a mere 10m above the beach and has recently been battered by storms / landslides which have caused part of the eastern fosse to disappear. Glascarraig Motte and Bailey had been built far from the sea but - at an estimated rate of 30m of erosion per century - this monument has and is being gradually taken by the sea.

Severe damage has been caused by storm undercutting and landslides on the south-eastern ditch of the Motte, where a section of the fosse was severely damaged over an area measuring 24m x 2-6m. It is unfortunate that many crucial artefacts and bones etc. have been lost because of this destructive erosion, thus diminishing our knowledge, whilst other pieces of bone and pottery recovered from the cliff base at Glascarraig have been sent to the National Archaeological Museum.

### Session 3 "Heritage Under the Sea"

#### **Keynote Address: Prof. Vince Gaffney**

Anniversary Chair in Landscape Archaeology, School of Archaeological Sciences, University of Bradford, England

#### **"Weather is what you get! Issues and opportunities in the study of inundated palaeolandscapes"**

The title of this paper derives, of course, from the humorous aphorism generally attributed to Mark Twain – "Climate is what you expect. Weather is what you get"! This statement seems particularly apposite in respect of the study of the world's palaeolandscapes. In these vast regions the inexorable advance of climate change and the associated issues of major sea level rise can be contrasted with the opportunities provided by local, but frequently important, examples of preservation and discovery. This paper will discuss some of these topics in respect of the Holocene landscapes of the southern North Sea – Doggerland. Here, a decade of extensive, mapping projects has provided a backdrop for more detailed studies of the region. To stretch the analogy of the conference theme, our knowledge of Doggerland now suggests that whilst there are many generalised issues awaiting resolution concerning long-term change or "climate", we may now need to be considering the "weather" of the coastal plains and specifically how smaller scale projects may begin to study issues at the human-scale, and in relation to the loss of the coastal shelves and impact on their inhabitants.

**Prof. Aidan O’Sullivan, Dr. Rob Sands, Mary Dillon**

School of Archaeology, University College Dublin, Ireland

**“Don’t mind the weather: Canute was right – it’s the tides that you have to worry about, ...and you can’t stop them”**

Ireland has upwards to 7,000km of coastline, and beyond the archaeological sites listed in the RMP, we know almost nothing about the scale, characteristics and preservation of the archaeological features and environmental contexts found on our intertidal zones. Building on over twenty years of experience in intertidal archaeological surveys in Ireland, Wales and elsewhere, we offer some thoughts on what might be out there, how it can and should be investigated, and how we really can not do all that much – like Canute – to stop the tides doing their inexorable work of exposing, covering and eroding unique and spectacularly well-preserved prehistoric, medieval and post medieval archaeological sites.

## **Fionnbarr Moore**

Senior Archaeologist, Underwater Archaeology Unit, National Monuments Service, Dept. Arts, Heritage and the Gaeltacht, Ireland

### **“Battening down the hatches: challenges faced by the Underwater Archaeology Unit (UAU) in dealing with impacts and threats to underwater cultural heritage from recent weather events”**

This lecture will focus on the work of the Underwater Archaeology Unit (UAU), National Monuments Service (NMS), Department of Arts, Heritage and the Gaeltacht, in dealing with the impacts of storms and related impacts from climate change on the coastal and maritime archaeological resource. Recent work undertaken by the UAU, with support from the Monument Protection Unit (NMS) or through the engagement of private sector archaeologists will be highlighted to illustrate the strategies implemented to either mitigate the impact or to ensure that there is a full record of what has been exposed.

Specific site examples will be discussed, several of which included shipwrecks. Laurence Dunne Archaeology, in close cooperation with the UAU, implemented a number of measures aimed at protecting the wreck of the early 20th-century schooner on the beach at Rossbeigh/Rossbehy Co. Kerry, and marine archaeologists Jimmy Lenehan and Rex Bangerter were commissioned by the UAU to undertake a survey of two wooden shipwrecks exposed on Tramore Strand, Co. Waterford after the winter storms, and the results of these surveys will also be presented.

Possible Viking ship timbers have been washed up at Laytown, Co. Meath, (reported by archaeologist Kieran Campbell) and on the North Bull, off Dublin, investigated by Karl Brady (UAU). Wrecks that were already known, in places like Portmarnock, Co Dublin, have been monitored by Karl Brady and are becoming more exposed and vulnerable as a result of recent storms as was another wreck, a known late 17th/early 18th century wreck site at Ballyheigue, Co. Kerry, which was investigated by Dr Connie Kelleher (UAU). Exposed on the Ballyheigue foreshore during very low tides and subject to interference from trophy hunters, a number of diagnostic artefacts were recovered in the process of the archaeological investigation which was aimed at mitigating the recent damage and protecting the site. The UAU has also been monitoring the Armada wrecks at Streedagh, Co. Sligo, over a number of years and material recently washed up at Streedagh, including the substantial remains of a rudder of possible late medieval date (reported by Eddie O’Gorman) is again no doubt a result of recent major storms off the west coast. The rudder is now in the care of the National Museum of Ireland.

With support from the Monument Protection Unit (NMS), Fionnbarr Moore (UAU) undertook an excavation and survey at the site of a wooden structural feature (probably the base of a fulacht fiadh) exposed in a peat horizon on the beach at Lippa, Co. Galway, following last winter's storms. The timbers were discovered by local Spiddal resident, Alan Keogh, and the initial thinking was that it was the remains of a trackway. Prior to the UAU investigation a radio carbon date had been procured for one of the floor timbers of the structure which dated it to between 1750 and 1700 BC.

The strategies being employed in response to storm impacts on UCH are very much in the fire fighting category at this stage but the experience gained from steps taken now will undoubtedly help inform our responses into the future and help towards developing an overall policy in this regard. There is no doubt that coastal and underwater archaeology is always under a certain level of threat from the elements and while the growing severity of winter storms and climate change are no doubt increasing the rate of erosion of such features, there is also a wider general awareness of this phenomenon now which may be a contributing factor to the number of sites under threat being reported.

Considering the experiences outlined above and the growing dataset of discoveries made following storm and other weather impacts, this talk will reflect on what type of response might be considered realistic, pragmatic and sustainable in the long run for protecting underwater and coastal heritage sites in the face of the elements when resources for doing so are scarce and may always be so.

**Session 4**  
**“Mitigation: Monument Monitoring and Protection Methods”**

**Dr. Fiona Beglane<sup>1</sup> & Jerry O’Sullivan<sup>2</sup>**

<sup>1</sup>Institute of Technology Sligo, Ireland

<sup>2</sup>Galway County Council, Ireland

**“A shore chapel at Staad, County Sligo”**

Staad Abbey, Agharrow, Co. Sligo (SL005-022) is a late medieval church with associated features including a souterrain and a shell midden, which are eroding into the sea at an ever-accelerating rate. The main structure is now severely at risk, being only 3.5m from the shoreline. Despite the name, there is no evidence that Staad was a later medieval abbey, and all available evidence suggests instead that it was a shore chapel for pilgrims en route to a monastery on the island of Inishmurray, which lies some four miles offshore.

This paper will discuss a recent project to examine erosion of the site. The site was subjected to archaeological survey in 1993/4, 2000/1, 2012 and 2014. This data has been combined with Ordnance Survey mapping and aerial photography to create a longitudinal case study of coastal erosion, with information spanning over a century and detailed survey over a period of two decades. This data sequence provides a unique opportunity to examine the effects of the sea on our cultural heritage, and to use this to inform coastal management practice.



**Michael Lobb, Prof. Anthony G. Brown & Dr. Julian Leyland**

Department of Geography, University of Southampton, England

**“Developing Terrestrial Laser Scanning for Coastal Archaeological Sites and Site Condition”**

Rapid Coastal Zone Surveys (RCZS) have revealed an increased number of archaeological sites along the UK coastline that are threatened by a combination of sea level rise, increased storminess and coastal development. These sites, which range in age from Palaeolithic to the post-Medieval, are a finite part of our heritage and should be recorded as fully as possible before they are lost forever.

Terrestrial laser scanning (TLS) has the capability of recording such sites with great accuracy and simultaneously providing the data required for the estimation of erosion rates, which can in turn be used to predict site loss rates. Some of the most threatened environments are difficult to record or excavate due to the restricted time available in the tidal cycle but need to be recorded intensively. This new approach offers a solution to these issues.

This talk will present a range of sites at which TLS survey has been applied as a method of recording and analysing coastal and intertidal archaeology sites, and in particular will focus on the site of Low Hauxley, Northumberland, which was heavily hit by the winter storms of 2013/4. Repeated survey of the site over the course of a year has provided a measurable analysis of the effects of the winter storms on the archaeological and palaeo-environmental resource.

**Dr. Matt Pope<sup>1</sup> & Dr. Martin Bates<sup>2</sup>**

<sup>1</sup>Institute of Archaeology, University College London, England

<sup>2</sup>School of Archaeology, History and Anthropology, University of Wales Trinity St. David, Wales

**“Storm Damage to the Neanderthal Site of La Cotte de St Brelade, Jersey: NERC-Funded urgency fieldwork in 2011 and on-going site protection works”**

La Cotte de St Brelade is an exposed headland, situated on the granite bedrock of Jersey’s south west coast in the Channels Islands. Pleistocene sea level fluctuations and sub-aerial weathering have progressively carved out a sea-cave and ravine system within the headland forming a capture point for Pleistocene sands, silts, clays and granite rubble. Within these deposits are an exceptional archive of stone tools, vertebrate fauna and palaeoenvironmental evidence spanning much of the last 250,000 years. The site is consequently of international importance in providing a record of Neanderthal behaviour during this period. Since 2009 the site has been under reinvestigation by a team of researchers drawn from a number of British institutions, concerns raised by the team about the effects of marine erosion on deposits at the site led, in 2011, to the awarding of NERC urgency grant to investigate and stabilise a small section of sediment under risk of collapse. While completed successfully, the winter storms of 2013-2014 led to much more significance erosion within the west ravine of the site necessitating a larger and on-going response. This paper reports on the work undertaken as part of the NERC funded project and the efforts currently being made with island agencies to put into place an ambitious programme of site protection. It is hoped our experiences can be shared with the wider community and successful approaches implemented at other sites can be drawn on as we go forward.

**Dr. Stephen McCabe<sup>1 2</sup>, Dr. Patricia Warke<sup>2</sup>, Daniel McAllister<sup>2</sup> & Dr. Donal Mullan<sup>2</sup>**

<sup>1</sup>Northern Ireland Environment Link, Belfast, Northern Ireland

<sup>2</sup>School of Geography, Archaeology and Palaeoecology, Queen's University Belfast, Northern Ireland

### **“Climate change and stone heritage: ‘deep wetting’ and decay processes”**

High profile climate change impacts on stone heritage sites include flooding and extreme weather events. However, there is a more insidious threat to historic stone related to both prolonged periods of winter wetness and high intensity rainfall events. This paper explores the impact of deep and prolonged wetness, associated with climate change, on historic stone decay processes.

Contrary to popular perception, many stone monuments and buildings are sensitive to their environment. This means that they will often respond to exposure conditions by manifesting a change in surface characteristics (for example, biofilm growth). Such changes can be more than simply aesthetic, masking fundamental changes in the behaviour of stone, with profound implications for decay and conservation.

In the context of climate change, deep wetting of stone and biofilm ‘greening’ of surfaces, this paper reports experiments investigating how physical alteration of the stone surface and near - surface zone can have implications for subsurface response and potentially for long - term decay patterns. Ultimately, fresh and surface - modified stones mask different kinds of system (in terms of inputs, storage and output), encouraging divergent behaviour over time.

Understanding the complex impact of climate change seems crucial to the knowledge underpinning the long - term management policies of our stone heritage sites.

### **“Reading the “ruin” stones”**

Slow-growing endolithic and epilithic organisms such as lichens, bacteria, algae, fungi, mosses, ferns, herbs, grasses, lianes and even trees, on archaeological monuments may inform us about many additional properties of rocks, stones, bricks and mortar in addition to their geologic attributes. We infer from ‘reading the “ruin” stones’, just how calm or turbulent exposure to the elements has been over time.

Visual and chemical legacies of life on and within an ancient monument can endure for decades, centuries or even millennia. The daily grind of life on rock surfaces may be punctuated by abrupt forceful change during extreme weather events. Unearthing, collapse, burial or reorientation can all change a stone’s relationship to light, water and air. Episodic resetting of a stone’s resident life forms in historic time can be constrained by lichenometric data. Evidence may then be correlated with any documented history of archaeological discovery and restoration interventions noted in the Sites and Monuments Record (SMR). Botanical details such as range of resident species and their growth sizes may support the geological evidence for rock provenance studies and in legal cases relating to willful damage to monuments.

Case studies from Ireland are presented from sites with contrasting habitat contexts from coastal to inland, calcareous to siliceous, lowland to mountain, urban to rural, woodland, heath and grassland in order to demonstrate botanical species polarities with habitat and niche preferences on and into ancient monument rock surfaces. Distinctive weathering effects may be caused by factors such as air pollution, salt-laden winds, bird perches and aspect.

Approximately 60% of c. 1300 lichen species in Ireland are saxicolous, and the potential presence of other organisms is estimated to bring visible lithic biodiversity to over 1000 species. Each species is specific about its preferred habitat context and niche, depending on individual eco-physiological requirements for life, e.g. pH, water relationships, local dust deposition, temperature ranges, interstitial soil and rock geochemistry.

Unfortunately the dominant plant on many Irish monuments is now Ivy (*Hedera helix*). This plant has benefited from recent climate change and is rampant in a range of habitat contexts, particularly on walls of towns, castles and ecclesiastical sites. Ivy is damaging to the structure of a monument if it roots or pushes through the rotten mortar of a wall. To remove ivy when it is mature and it covers walls extensively can cause more harm than good unless great care is taken. At this late stage too the epilithic biodiversity of the monument has already been compromised and drastically reduced. Even access and appreciation of the monument's characteristics becomes an issue. Unless ivy is excluded and kept from gaining hold on a monument by prevention or it is managed - pruned and carefully removed at intervals to stop it from rooting - the entire structure is unlikely to remain standing for very long and an extreme weather event may cause sudden and significant damage such as wall collapse.

**Session 5**  
**"Remedial & Conservation Works"**

**Peter Brown**

PhD Researcher, Department of Archaeology, Durham University, England

**"Aeolian sand as a hazard in medieval Britain"**

Natural hazards exert a considerable influence on vulnerable populations living in risk-prone areas. Archaeological and historical evidence offers a unique perspective from which to explore this relationship. This paper examines the hazard of wind-blown sand in relation to British medieval coastal communities focussing in particular on the factors influencing inundations of sand. Focusing on the extent to which these hazardous occurrences were purely natural events and whether human land use decisions played a significant role in exacerbating these extreme events is assessed. In addition, this research looks at the means by which medieval populations mitigated wind-blown sand in the moment of disaster, how they protected against the hazard through both material and spiritual intervention over the longer term and the extent to which they were able to adapt to the onset of new conditions. By contextualizing past discoveries, new light can be shed on these human/environment interactions while simultaneously exploring wider implications for the underlying climatic changes of the Little Ice Age across Europe.

## **Gary Dempsey**

3D Programmer, RealSim, Ireland

### **“What lies beneath - revealing the cross inscribed stones and cross slabs of Co. Roscommon using Structure From Motion (SFM) photogrammetry”**

The practice of repositioning inscribed stone fragments from where they were discovered to prominent positions within reconstructed features has allowed these artefacts to be retained within a local cultural heritage setting. It was often the practice of FAS schemes to set decorated stone objects into existing or reconstructed walls to protect them from further damage. This has left the stones exposed to the elements and the risk of damage by weathering and growth of lichen to the point where the inscriptions and designs can no longer be deciphered.

The *Irish Inscribed Stones Project* notes that this weathering process and atmospheric pollution are especially damaging to early Christian inscribed stones. Building on the concept of 3D recording projects such as the *Clonmacnoise Project* and the *Ogham in 3D Project*, and emerging from research recording graffiti and carvings at Oweynagat in Co. Roscommon and community work in Scottish graveyard with the *Accord Project* at *Glasgow School of Art*, a proposal for a citizen science project to record cross inscribed stones and cross slabs in Co. Roscommon emerged.

3D documentation allows for the recording of surface level details to be recorded and recreated in a virtual environment. The benefits of such projects allow researchers to record accurate metric data and geometric data which help to inform methods of preservation for delicate heritage objects. The cost of such projects however often removes this option from community run projects. This issue can be overcome with the use of Photogrammetry, a multi image photographic recording process, allowing for the generation of 3D data at the fraction of the cost of other methods.

Photogrammetry uses a digital camera to record detailed 3D data which along with metric measurements can be used to create scalable 3D models. One of the added benefits of this method is the high level of geometric detail recorded, allowing for the accurate recreation of surface detail which has been hidden by weathering or atmospheric pollution.

This paper will discuss the process of recording detailed 3D data from weathered stone using simple camera based techniques demonstrating the success of such methods in reading beneath the visible surface to the geometric features beneath. The paper will focus on the cross inscribed stones and cross slabs of Co. Roscommon, but will also discuss other valuable areas where these recording methods have been successful in revealing weathered features, such as headstones, rock art, and other historically inscribed features. While the aim of this project is to document the hidden features, this paper will discuss how this method could be used to advise on the monitoring and protection of such features from further damage.



## **Lilja Björk Pálsdóttir**

Archaeologist at the Institute of Archaeology, Iceland

### **“The sea gives and the sea takes: An eroding fishing station”**

Coastal sites in Iceland have through the centuries been lost in numbers due to marine erosion. How many is unknown and in fact it is not known how many sites there are in total by the coast around the island.

From 2008 a rescue excavation has taken place at Gufuskálar, on the Snæfellsnes peninsula on the west part of Iceland. Gufuskálar is a late medieval fishing site which differs in many ways from the known fishing sites in Iceland. By an international team effort from Iceland, USA and UK, it has been possible to rescue information which otherwise would be lost, for the site is rapidly eroding.

The need for procedures or protocols on how to deal with such sites as well as how and who should fund it has become apparent during this time.

This paper will focus on the findings and information that have been uncovered so far and the degradation of the site that has been observed since the project began.

## **Muireann Ní Cheallacháin**

PhD Researcher, Department of Archaeology, University College Cork, Ireland

### **“Climate change and Coastal Heritage: An assessment of the impact of sea erosion on Coastal Promontory Forts in Ireland”**

There is a growing body of international research which suggests that climate change will impact negatively on cultural heritage resources. In 2009 the Heritage Council and Bord Fáilte commissioned a comprehensive desk-based literature review of research carried out to date on potential impacts of climate change on tourism resources associated with Ireland’s maritime and inland water heritage. The 2009 publication concluded that the most important current constraints on managing cultural heritage of the Irish coast included a lack of baseline data and a lack of recognition by policy makers, and decision takers for the extent of the threat.

The main aim of my PhD research is to assess the scale of the problem of coastal erosion on archaeological heritage in Ireland, with specific reference to coastal promontory forts as a case study. One of the main objectives of my research is to evaluate the techniques used to quantify past coastal migration and associated heritage loss and predict future vulnerability. Sustainable management of coastal heritage necessitates an understanding of both the processes of erosion affecting archaeological sites and the significance of individual sites within a broader understanding of a monument type. A review of current research into coastal promontory forts reveals that they are not very well understood, either in Ireland or abroad therefore another objective of this research will be to incorporate all known information on coastal promontory forts into a national geo-referenced database and critically analyse current classifications, assumptions and interpretations of this monument type and to assess the means of ranking or prioritising individual sites in terms of their significance and vulnerability.

Topographic and geophysical survey will be undertaken at case study sites as well as a photogrammetry or laser scan survey where the local geography allows. All of the primary and secondary, qualitative and quantitative data will be entered into a GIS in order to produce a robust assessment of heritage loss and future vulnerability of coastal promontory forts and create data outputs that will inform best practice in managing our coastal heritage. The scale of the problem of climate change impacts on coastal archaeology in Ireland has not yet been assessed at a site specific scale and therefore there is an urgent need for proactive vulnerability assessments and future risk models such as will be produced from this research.

## Session 6 "New Discoveries & Future Challenges"

### **Rob Henshall**

Water Sportsman and Undergraduate, Institute of Technology Sligo, Ireland

### **"A Game of Bones Down the Rabbit Hole: Rapid Storm Erosion of an Early Christian Cemetery"**

Annual observations by water sportsman (and first year Applied Archaeology student at IT Sligo), Rob Henshall, highlighted the changing back beach topography of Inish Barnog, an isolated West Donegal island off Dawros Head. The changes are partly caused by the introduction of rabbits to the island many decades ago enabling increased weather erosion of the shallow sandy dune areas. In the summer of 2003 whilst investigating a spoil heap from a rabbit burrow, a possible animal femur and pelvis was discovered. Upon observing the topsoil, the crown of a human skull was noticed protruding above the ground. The local Gardaí were duly informed and, though excited, quickly dismissed a murder investigation: the find was reported to the National Monuments Service and the National Museum of Ireland. Later that year, archaeologist Richard Crumlish led a rescue excavation of the skeleton and discovered that it was one of six male bodies in a shallow pit burial. A number of the bodies had been decapitated, and two were removed for analysis. C-14 dating returned a date of circa 650 AD.

Following the winter storms of 2013 and 2014, Rob Henshall again observed that the (now) re-covered burial pit had been re-exposed and further shoreline archaeology had been revealed, destroyed and scattered seaward. The storms have exposed what appears to be an early Christian cemetery, graves, skulls, and skeletal remains were littered amongst the storm damaged beach. The possible remains of a destroyed hut site were exposed and a Latin cross inscribed slab stone was found 50 metres out to sea, sucked out of the bank by storms.

It is currently hoped that Rob and Richard Crumlish will receive permission and further funding to return to the island for additional investigations. Artefacts recovered from the site, which include the Latin cross, a portion of a further cross and part of an iron vessel have been reported to Fionnbarr Moore of the National Monuments Service. It is highly likely that the storms have uncovered a previously unrecognised early Christian Hermitage site, a site with potential for even much earlier burials. However, if further storms occur much of the site and archaeological evidence may be lost forever - the cemetery at Inish Barnog requires urgent in-depth archaeological investigation before it is lost to the sea.

**Dr. Cathy Daly**

Heritage Management and Conservation Specialist, Ireland

**“The prospects for Ireland’s World Heritage in a changed climate”**

According to the IPCC there remains no doubt that we are in a period of global climate change caused at least in part by human activity. For cultural heritage this means that deterioration processes related to both gradual weathering and extreme weather events will also be changing. We therefore need to question current understandings concerning the patterns, rates and scale of weathering of monuments.

Ireland has currently two sites that are considered by UNESCO to be of Outstanding Universal Value (OUV) and are thereby designated as World Heritage. These sites are Brú na Bóinne and Skellig Michael. This paper will present the results of vulnerability studies for both sites, to the impacts of climate change, carried out as part of the author’s doctoral research at Dublin Institute of Technology.

The vulnerabilities of Brú na Bóinne and Skellig Michael to the potential impacts of projected climate change over the coming century are assessed using a place based, stakeholder led, methodology. The results reflect the robustness of these sites yet also point to areas where threats from future weathering require a management response. The paper will briefly outline the methodology utilised including the advantages and disadvantages inherent in stakeholder led assessments. The results for each site will be presented and discussed. These results consider both the catastrophic impact of an increased frequency of extreme weather events and the gradual but progressive change in long - term weathering. The assessment takes a values based approach which will aid decision makers in formulating appropriate targeted adaptation measures. The paper will end with a brief discussion of the next step in the management cycle– adaptation and monitoring.

## **Michael Gibbons**

Independent Archaeologist, Ireland

### **“Revealing A Connemara Doggerland? Winter Storms of 2014”**

The storm surge revealed a huge array of new archaeological sites on the Galway /Mayo coast including several important Mesolithic sites, drowned Prehistoric forests, Late Bronze Age platforms and a range of Early Christian, Medieval and Post-Medieval Burial Grounds.

Exciting new evidence for the Medieval ports of Aran and Inishbofin was also revealed. Much of the new material discovered has been subsequently lost as the coastline has reshaped.

The storms have also highlighted the totally inadequate resources available to the Heritage Service, both at a national and local level and emphasizes the urgent need for a dedicated rescue archaeological unit for Ireland’s west coast.

**Dr. Thomas P. Nelligan**

The Standing Stone, Ireland

### **"Coolbanagher Castle and Social Media Outrage"**

Coolbanagher castle in Co. Laois was originally a 13th century hall-house built in close proximity to the Rock of Dunamase. Nearby stands the remains of Morett castle and the site of Shaen castle, now Shael hospital, making Coolbanagher an important local historical landmark. During the fierce Storm Darwin, which hit Ireland in February 2014, the South wall of the castle fell down due to severe wind. Following a visit from archaeologists, permission was given by the National Monuments Service to remove the unsafe portions of the castle. However, the castle was levelled to the ground. While there was confusion over what happened and exactly what was supposed to happen, social media was to become the battleground where the fate of Coolbanagher castle would be dissected. This paper seeks to explore the ensuing social media outrage that continued throughout the weeks following the castle's demise. Opinions ranged from indifference, support for its demolition to complete outrage and anger. At the same time, social media allowed people to become part of the debate and to engage with heritage issues in a new way. Another issue that will be explored in this paper is the observation that stories of damage to heritage sites gain the attention of users of social media much more readily than other types of stories regarding heritage. Using statistics from various social media pages I will show that media posts that contain stories of damage to historical sites will have more interaction from people than other posts. Why does this happen and what can be done to engage people on social media more positively in regards to heritage sites? These questions and others will be explored throughout. Underlying this paper will be the question of the role of social media in matters pertaining to heritage, and how social media can become a tool for the preservation of heritage sites rather than a battlefield of discussion for differing opinions.

**Marc Storey, Ariel Pollard-Belsheim, Christina Robinson & Prof. Trevor Bell**

Dept. of Geography, Memorial University of Newfoundland, Canada

**“Assessing the vulnerability of archaeological sites to coastal inundation in Newfoundland and Labrador”**

The cultural history of Newfoundland and Labrador is a 9000-year-long record of maritime-adapted and dependent peoples. Of all known archaeological sites, 80% are within a coastal context. With relative sea levels projected to rise exponentially by the end of the century under some climate scenarios, the fate of many nationally- and internationally-significant archaeological sites is uncertain. The Coastal Archaeological Resources Risk Assessment project ([carra-nl.com](http://carra-nl.com)) addresses the needs of heritage managers for information on: i) which archaeology sites are at risk of inundation by rising sea level and storm surge over the coming decades, ii) approaches to the prioritisation of those sites considered most vulnerable, and iii) using a case study approach, which management options and mitigation strategies have proven most effective in the past.

The CARRA project is building a community of practice for heritage managers in Canada; providing the means to identify at-risk archaeological sites and informing management responses to the impacts of rising sea level and changing climate on coastal heritage.

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# Food & Drink

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## Friday 6th March

We welcome you to Sligo and invite you to join us on Friday evening for an Informal Drinks Reception between 8-11pm at the Kudos Bar in the Clarion Hotel, a 5 minute walk from IT Sligo (see map).



## Saturday 7th March

Tea and Coffee will be served mid-morning and mid-afternoon in the main hallway, just outside Lecture Theatre A006. Posters will also be on display in this area.

Lunch will be served on Saturday 7th March in O'Hehir's Food Court, between 1-2pm. You'll find a voucher in your Conference Welcome Pack for a Soup, Sandwich and Tea or Coffee lunch package, which can be redeemed at the Food Court. O'Hehir's are located in the B Block on the central floor - up one flight of stairs as you exit Lecture Theatre A006 and you'll find the Food Court a short walk on the down the main hallway on the right.

Our Conference Dinner will be held at the beautiful converted chapel of Canis Major in the Clarion Hotel. A three course meal will be available for €25 per person (see overleaf).

Prior booking for the Conference Dinner is not necessary.



## Sunday 8th March

Tea and Coffee will be served mid-morning in the main hallway, just outside Lecture Theatre A006. Posters will also be on display in this area.

If you are joining us on our field trip, you will find a number of food outlets at Strandhill.

- Shells Cafe (open 9-6 on Sunday)
- The Strand Bar (food served from 12-5 on Sunday)
- Mammy Johnston's Ice Cream Parlour, Creperie & Coffee Shop (open 10-6 Sunday)

**Conference Dinner - Saturday 7th March, Canis Major, Clarion Hotel**



**BY CHOICE HOTELS**



**BUFFET DINNER MENU**

Homemade Cream of Vegetable Soup

Caesar Salad served with Crispy Bacon, Garlic Croutons & Parmesan Cheese

Fantail of Melon served with a Fresh Coulis

\*\*\*\*\*

Clarion Chicken Curry served with Basmati Rice

Beef Stroganoff served with Basmati Rice

Baked Fillet of Cod with a Herb Crust served with a Pesto Cream Sauce

Selection of Vegetables & Potatoes

\*\*\*\*\*

Profiteroles served with Chocolate Sauce

Toffee & Apple Gateau served with a Caramel Sauce

Clarion Fresh Fruit Salad

\*\*\*\*\*

Freshly Brewed Tea or Coffee

**€25.00 per person**

# Field trip

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Sunday 8th March, 12.35-3.30pm

If you're staying in Sligo on Sunday afternoon, why not join us on our unofficial field trip (car sharing) to Strandhill, Co. Sligo, where a variety of weather-beaten archaeological sites will be explored.

## Lunch in Strandhill

A number of food outlets are available at Strandhill for those of you wishing to purchase lunch.

## Itinerary

Sam Moore, Lecturer in Applied Archaeology at IT Sligo, will lead a field trip to Weather Beaten Archaeological sites in and around Strandhill on the Cuil Irra Peninsula.

- Middens in the Shelly Valley, at Strandhill and Culleenamore
- Killaspugbrone church

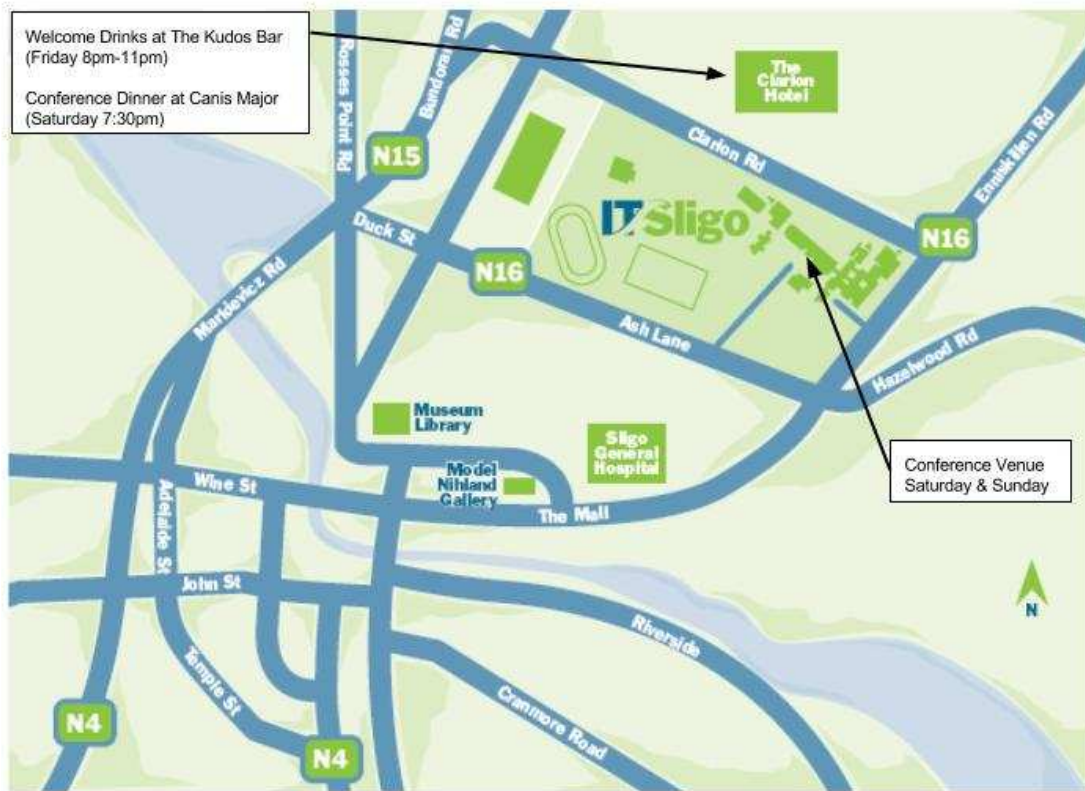
The Strandhill middens - known locally as Shelly Valley - were exposed by a dune blow-out. The dune sands are gradually being recovered due to the construction of dune defenses.

The coastal cemetery at Killaspugbrone church has suffered from severe erosion, causing interred skeletons to fall into the sea. Coastal walls have since been constructed to prevent further erosion, thanks to money raised through local fundraising and grant awards.



# Maps

## IT Sligo and The Clarion Hotel



IT Sligo



The Clarion Hotel



## IT Sligo Campus Map

The Weather Beaten Archaeology Conference will be held in Lecture Theatre A006, in the A Block (Central Administration).

Lunch will be served in O'Hehir's Food Court in the B Block.

### Key Code

<b>A</b> Library / Central Administration	<b>H</b> Student Services Centre
<b>B</b> MacMunn 1970 Building & Canteen	<b>J</b> Old BIC
<b>C</b> Languages & Marketing Centre	<b>K</b> Fine Art & Creative Design
<b>D</b> Business & Social Sciences	<b>L</b> Fine Art & Creative Design
<b>E</b> Technological Engineering & Computing Facility	<b>M</b> Applied Technology
<b>F</b> Technology Centre	<b>P</b> Knocknarea Arena
<b>G</b> Innovation Centre	



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# Monitoring the Archaeology of Sligo's Coastline

MASC

A new citizen science scheme for County Sligo

## We need your help to identify vulnerable coastal archaeological sites

Strong storm tides are capable of revealing, concealing and destroying archaeological sites at vulnerable coastal locations. Over the last 6 months, IT Sligo staff and students have discovered previously unknown middens, stone-lined troughs, wooden trackways and peat shelves at coastal locations across Co. Sligo. Our coastline is constantly changing and we need the help of citizen scientists to monitor the shifting sands and to discover newly revealed archaeological sites in our local communities.

### What is the MASC Project?

Climate predictions suggest an increase in severe cyclones and wave surges in the future which will continue to threaten middens, promontories, inter-tidal sites, wrecks and many other monuments that lie in coastal locations. The MASC Project citizen science scheme will assist our archaeological research by recruiting amateur or non-professional scientists - people that live, work and use the coastline on a regular basis. The aim of the MASC Project is to engage with and provide training for individuals, voluntary community groups and interested NGOs living or operating along the coastline of Co. Sligo to recognise, record and monitor exposed or threatened cultural heritage sites.

### Collaborators

We would like to hear from interested potential stakeholders that already have a strong coastal presence. We intend to meet our collaborators regularly and to offer them training in archaeological recording techniques.

We're looking for collaborators such as:

- Beach Care and Anti-Litter Groups
- Archaeological Societies
- Youth Groups
- Bird Watching Groups
- Angling Groups

### Training

Staff and students at the Institute of Technology Sligo, will offer training for volunteers:

- Learn to identify exposed or vulnerable archaeological sites along the coast
- Carry out surveys to accurately record the sites
- Understand and identify appropriate health and safety issues

For more information contact Dr. James Bonsall or Sam Moore at IT Sligo

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