



Climate Environment Settlement and Society

Changing historic patterns in Ireland

24-6 February 2012

All Hallows College,
Dublin

Group for the Study of Irish Historic Settlement

in association with

Irish Environmental History Network

Discovery Programme

Welcome

The **Group for the Study of Irish Historic Settlement** (GSIHS) is delighted to be co-sponsor, with the Irish Environmental History Network and the Discovery Programme, of this conference. Since our foundation in 1969 we have actively promoted research and discussion of Irish settlement history, through annual regional seminars and more recently through special thematic conferences.

This is our fifth thematic conference and the third occasion on which GSIHS has collaborated with related research groups. Our first thematic conference was held at All Hallows College, Dublin, on the theme of 'Settlement and landscape in Gaelic society c.1350-c.1600', in February 1999. The second such conference, on 'The parish in medieval and early modern Ireland', took place at All Hallows, in February 2003. The venue moved to Cork for the 2006 thematic conference on 'Plantation Ireland: settlement and material culture, c.1550-c.1700', which was organised in association with the Irish Post Medieval Archaeology Group. Three years later, in March 2009, we returned to All Hallows for a special conference on the theme of 'Farming systems and settlement', co-hosted by the Agricultural History Society of Ireland.

These events have proved to be very successful and stimulating, and the proceedings have been widely disseminated in our series of publications. The proceedings of the first three thematic conferences are available from Four Courts Press, while the proceedings of the 'Farming systems and settlement' conference are currently being prepared for publication.

The 2012 special thematic conference on 'Climate, environment, settlement and society' is, appropriately, being organised in conjunction with the Irish Environmental History Network and the Discovery Programme. Such collaboration is consistent with the objectives of GSIHS who seek to provide an interdisciplinary forum for discussion and research on all aspects of Irish settlement history through co-operation with various academic disciplines and organisations.

I welcome all participants at this conference, and I look forward to an event that will encourage the exchange of knowledge, ideas and interpretations, and build relationships that will foster new research on many aspects of the theme of 'Climate, environment, settlement and society'.

Bernadette Cunningham

President, Group for the Study of Irish Historic Settlement



Ar Thóir Na Sean

The **Discovery Programme** is a public institution for advanced research in Irish archaeology. As distinct from the other public bodies that deal with Irish archaeology, the Discovery Programme's sole activity is to engage in full-time archaeological and related research, in order to enhance our knowledge of Ireland's past. Our only other concerns are to communicate the results of that research, as appropriate, to scholars and the general public, and to promote the introduction of new technologies and new techniques into Irish archaeology.

The Discovery Programme was established in 1991 and was funded initially by the government through direct grants. Now, as an independent body, it is mainly funded by an annual grant from the Heritage Council. The Discovery Programme undertakes to answer, through investigative research projects, questions in Irish archaeology that arise from time to time. The organisation is governed by a Council and Directorate whose members comprise leading Irish archaeologists from the whole of the country (north and south).



The **Irish Environmental History Network (IEHN)** was established in October 2009 and is hosted by the Trinity Long Room Hub. The primary goal of the IEHN is the provision of a point of contact for researchers working on areas and themes relevant to Irish environmental history. A related goal of the IEHN is to help high-light work ongoing on Irish environmental history to interested parties, researchers working in related disciplines, and the public.

The Network's definition of environmental history is extremely broad. It encompasses work in any discipline employing any method (scientific, archaeological, historic, literary, etc.) that examines how humanity has studied, perceived, managed and influenced the natural environment, and been influenced in return by the environment, in any period of the past. Under natural environment we include all aspects of the natural world, oceans and landscape. Members are thus drawn from a diverse array of disciplines, including archaeology, botany, zoology, ecology, engineering, the physical sciences, anthropology, sociology, geography, economics, history, architecture, English and Irish literature, art and media studies, amongst others. Its website may be found at: www.tcd.ie/longroomhub/iehn

The conference has been generously supported by:

Department of History, University of Limerick

Faculty of Arts, Humanities and Social Sciences, University of Limerick

The Office of the Vice-President Research, University of Limerick

The Long Room Hub, Trinity College, Dublin



Friday, 24 February 2012

19.00 Registration (Purcell Room, All Hallows, College)

Session One: Opening

20.00 Michael O'Connell
National University of Ireland, Galway

'Climate, environment and farming in Ireland during the last two millennia: insights from palaeoecology'

Saturday, 25 February

Session Two: Dendrochronology and early medieval settlement

9.30 Mike Baillie
Queen's University of Belfast

'Tree rings hint at environmental triggers for settlement change'

10.20 Michael Monk
University College, Cork

'Climate, environment and settlement in Early Medieval Ireland'

11.10 Tea and coffee

Session Three: Woodlands and meteorological extremes

11.30 Ingelise Stuijts
Discovery Programme

'Trees and their products in Irish daily lives: from faggots to beams and shingles, and dirty ditch fills'

12.20 Francis Ludlow
Harvard University

‘The causes and societal impacts of meteorological extremes as revealed through the environmental record of the medieval Irish Annals’

13.10 Lunch

Session Four: Towns and Bogs

14.00 Margaret Murphy,
St. Patrick's College, Carlow

‘Dirty Old Towns: environmental impacts of medieval Irish towns’

14.50 Gill Plunkett
Queen's University Belfast

‘Bogged down with data? Peatland-based investigations of cultural responses to climate change in the last two millennia’

15.40 Tea and coffee

Session Five: European Contexts

16.00 Jim Galloway
University of London

‘Storms, flooding and economic change in the later middle ages: the Thames Estuary as a case-study’

16.50 Tim Soens
University of Antwerp

‘Cultures of disaster or amphibious societies? Institutional responses to flood disasters in Flanders and Northern Germany, fourth-sixteenth centuries’

20.00 Conference dinner (Skylon Hotel, Drumcondra)

Sunday, 26 February

Session Six: Building and Reclamation

9.30 David Dickson
Trinity College, Dublin

‘Environment and the infrastructural development of eighteenth century Dublin’

10.20 David A. Fleming
University of Limerick

‘Climate, reclamation and settlement in eighteenth-century Ireland’

11.10 Tea and coffee

Session Seven: Lightning and Coastal Settlements

11.30 Kieran Hickey
National University of Ireland, Galway

‘A bolt from the heavens! The historical record of lightning in Ireland and its impact on settlement and people’

12.20 Jessica L. Jones
Trinity College, Dublin

‘The nature and evolution of Irish coastal settlements: fishing and the environment in eighteenth and nineteenth century Ireland’

13.10 Close

Speakers and abstracts

MICHAEL BAILLIE

School of Geography, Archaeology and Palaeoecology,
Queen's University, Belfast

'Tree rings hint at environmental triggers for settlement change'

Tree ring dates for buildings and archaeological structures have been accumulating for several decades. It is possible to interrogate not just the master oak chronologies but the start and end dates of populations of timbers to provide pictures of human activity across Ireland. In turn, changing distributions of activity through time can be compared with traumatic events deduced from the tree ring patterns themselves.

This paper will review a series of events and gaps in the tree ring record as well as clear episodes of tree regeneration in order to make some suggestions of what may have been happening in the sixth, seventh, tenth and fourteenth centuries. The paper will not provide answers but will provide a chronological framework for other environmental, archaeological and historical records to be interrogated.

DAVID DICKSON

Department of History, Trinity College, Dublin

'Environment and the infrastructural development of eighteenth century Dublin'

Dublin's major physical expansion in the eighteenth century has conventionally been explained by reference to proprietorial geography and novel commercial pressures. These were of course a large part of the story, but this paper reflects on the role of environmental factors, both natural and anthropogenic, in shaping the urban infrastructure and the city's commercial and residential development. The impact of major flood episodes, estuarine geology, smoke pollution, and foul odour will be reviewed, with particular attention being given to the early and uneven patterns of suburbanization.

DAVID A. FLEMING

Department of History, University of Limerick

'Climate, reclamation and settlement in eighteenth-century Ireland'

The Irish climate and more generally the environment have mostly been benign forces for those who lived in Ireland. Yet severe climatic events could result in damage and devastation. Variations from the normal climatic conditions could upset sowing and harvest times, with a consequent impact on the costs of living and, if severe enough, life itself. Storms and floods could wreak havoc on settlements and farmland, or upset communication. This paper examines the less well-known, but nevertheless, severe disruptions caused by the weather in eighteenth-century Ireland, and the impact they had for settlement.

The paper will also examine how individuals sought to expand settlement into areas which had long been thought inappropriate or unsuitable for building or farming. In the eighteenth century the metropolis of Dublin and the cities of Cork, Waterford and Limerick spread into areas that had been marsh or subject to tidal and riverine flooding. The countryside too witnessed similar developments as the economy and an increasing population as well as notions of 'improvement' encouraged farmers and landowners to reclaim bog, mountain and barren land for agricultural production and settlement. The paper examines some of these developments, assessing how successful they were in shaping the landscape.

JAMES GALLOWAY

Institute of Historical Research, University of London

'Storms, flooding and economic change in the later middle ages: the Thames Estuary as a case-study'

North-western Europe was subject to periods of intense storm activity between the thirteenth and sixteenth centuries, which impacted upon settlement, economy and environment in many areas. In coastal districts major storms were often associated with tidal surges which wrought considerable damage, sometimes leading to prolonged flooding of farmland, abandonment of settlements and harm to ports and harbours. This paper will summarise recent research on the experience of the tidal river Thames and the Thames Estuary in south-eastern England, where storm-surges forced

the abandonment of extensive areas of reclaimed land during the fourteenth and fifteenth centuries. This environmental challenge was, however, mediated by economic and social factors, and had its greatest effect in the period of economic and demographic decline following the Black Death. In some locations the flooding of farmland gave rise to new commercial fisheries, as lords and tenants sought to adapt both to environmental change and to the decline in demand for agricultural produce. The experience of the Thames will be set in its wider European context, and possible implications for other areas of Britain and Ireland will be suggested.

KIERAN HICKEY

Department of Geography, National University of Ireland, Galway

‘A bolt from the heavens! The historical record of lightning in Ireland and its impact on settlement and people’

On average two people a year are killed by lightning in Ireland and substantial damage to houses and other structures also occurs. This death and destruction occurs as a result of cloud to ground lightning strikes and occasionally ball lightning events. This paper will examine the long historical record of lightning strikes in Ireland and show that they were a far more serious threat to buildings and settlement in medieval times than at present, but the threat is by no means entirely eliminated by modern structures. Remarkably very little systematic research has been carried out on the vast array of records on these lightning strikes in Ireland. This paper will also analyse the events in terms of their causes, spatial and temporal variability. The paper will then look at the scale of the impacts of lightning strikes both medieval and modern on settlement and people.

JESSICA L. JONES

Trinity College, Dublin

‘The nature and evolution of Irish coastal settlements: fishing and the environment in eighteenth- and nineteenth-century Ireland’

There is a considerable knowledge gap concerning the relationship between patterns in Irish coastal settlement, fishing and the environment. Recent studies across the globe have utilised Historical Geographical Information

Systems (HGIS) when attempting to reconstruct historical settlements over time. Such studies often provide a greater insight into historical settlement due to the combining of spatial data and attribute data across a multitude of layers. However there is a paucity of HGIS methodology being applied to studies in Ireland, especially in maritime areas, and I hope to highlight the benefits of such an approach.

In this presentation I will provide an overview of my early-stage research on Irish fishing history from medieval to modern times. I will focus particularly on the possibilities afforded by the application of HGIS in helping to close the gap in knowledge that thwarts a clear understanding of historical settlement on the Irish coast. A comprehensive fishing history necessitates a multidisciplinary research approach that includes economic, social, environmental, and geographical considerations and methods. My research takes into account these disparate, but often highly-dependent factors that have influenced Ireland's sea fisheries. In this talk I will concentrate on how geographical and environmental factors have contributed to Irish coastal settlement patterns in the eighteenth and nineteenth centuries.

FRANCIS LUDLOW

Harvard University Center for the Environment, Harvard University

'The causes and societal impacts of meteorological extremes as revealed through the environmental record of the medieval Irish Annals'

The Irish Annals are one of the most fundamentally important sources for medieval Irish history, providing annually arranged listings of major political, social and ecclesiastical events. From the fifth to thirteenth centuries the Annals were maintained by scribes based in the major monastic foundations such as Armagh and Clonmacnoise. From the thirteenth century onwards they were maintained by the families of hereditary professional historians in the employ of the Gaelic aristocracy, primarily based west of the River Shannon. The extensive environmental record preserved in the Annals, consisting primarily of recorded extreme meteorological phenomena and conditions (e.g. severe windstorms, flooding and drought), has been often overlooked by modern scholars. This paper will examine the environmental content of the Annals, focusing in particular upon the detailed history of extremes of low temperature which can be reconstructed from these sources (by use of recorded occurrences of severe frost, heavy

snow, frozen water bodies, etc.), and will explore the impacts these extremes had on society and the biosphere, as well as examining the likely volcanic origin of many of these extremes by use of the GISP2 ice-core record from Greenland.

MARGARET MURPHY

Department of History, St. Patrick's College, Carlow

'Dirty Old Towns: environmental impacts of medieval Irish towns'

Medieval towns had a number of beneficial effects on the rural regions which surrounded them. They provided markets for agrarian produce, supplied manufactured and imported goods to rural consumers and offered opportunities for employment, education and leisure. Towns also had a number of negative impacts on their hinterlands and this paper will consider some of these in reference to medieval Irish towns.

Although small by European standards medieval towns in Ireland produced waste in the form of human sewage and effluent from urban-based industries such as tanning. This was usually disposed of in the surrounding countryside or put into rivers. The paper will examine some of the strategies adopted by towns for improving the urban environment and ask whether this was done at the expense of the adjacent countryside.

Urban demands for certain products, especially for timber and fuel, resulted in the reduction of these resources in their surrounding areas with obvious consequences for settlement and land-use. The paper will consider the evidence for resource depletion in the medieval period as well as identifying resource management strategies which developed in response to urban demand.

MICHAEL (Mick) MONK

Department of Archaeology, University College, Cork

'Climate, environment and settlement and in Early Medieval Ireland'

Our understanding of the early medieval period is in the process of considerable change as a consequence of the explosion in archaeological evidence from development-led excavations during the boom years.

Even as the evidence for settlement, agriculture and environment begins to

be assessed it is clear that in the future all Ireland whole period overviews will be of limited value.

Over recent years I have focused on the importance of the arable component in agriculture in Early Medieval Ireland and its influence on settlement and society. A particular vehicle I have used for this study is the corn-drying kiln, the incidence of which has vastly expanded in recent years, being the second most frequently discovered site on National Road Authority funded excavations. I have focused on all aspects of these structures including their location, dating, structure and archaeobotanical/plant remains content. Their dates, along with those from other site-types has not alone provided a chronology for crops growing nationally and regionally but also, by comparison with evidence from bog hydrological and tree ring studies, evidence for climatic variations. This paper will also discuss this evidence in the broader context of other indicators for changes in farming practice and settlement.

MICHAEL O'CONNELL

Palaeoenvironmental Research Unit, National University of Ireland Galway

'Climate, environment and farming in Ireland during the last two millennia: insights from palaeoecology'

The last two millennia are characterised by major environmental change at most spatial scales including global and European scales, and indeed on the island of Ireland. As regards climate, the period is characterised by climatic anomalies including the Little Ice Age, which, if duration as well as intensity is taken into account, is arguably the major anomaly of the post-glacial period. During the last two millennia, terrestrial environments and farming practices also underwent major change. The early first millennium AD saw the expansion of the Roman Empire, the influence of which extended far beyond its administrative boundaries to include Ireland. As the Roman Empire ended, the so-called Dark Ages, during which farming and economic activity was greatly reduced in most parts of central Europe, contrast with developments in Ireland where most indicators point to renewed human activity and, in particular, increased pastoral and arable farming, and woodland clearances that were probably more widespread than at any time prior to this. Thus, a series of changes was set in train that ultimately led to the landscape and settlement patterns that we are familiar with today. As

elsewhere in Europe, the post Medieval period and particularly the Industrial Revolution and the development of the chemical industry profoundly changed farming and farming practices in much of Europe and, ultimately, the effects of these later developments had a bearing on even the most peripheral regions, including those parts of Ireland on the Atlantic seaboard. Against this general background of major environmental and technological change, farming and its long-term impact on the Irish landscape will be considered from a palaeoecological perspective and illustrated by results from recent investigations. The interplay between farming, changes in soil fertility, cultural developments, demographic trends, settlement patterns and climate change will be explored.

GILL PLUNKETT

**School of Geography, Archaeology and Palaeoecology,
Queen's University Belfast**

'Bogged down with data? Peatland-based investigations of cultural responses to climate change in the last two millennia'

Bogs have long been recognised as important archives of palaeoenvironmental data: pollen studies reveal fluctuating levels of landscape openness that give an indirect record of changes in land-use and climate variability can be reconstructed through bog surface wetness (BSW) studies using peat humification, plant macrofossil and/or testate amoebae analyses. Irish bogs also boast a rich archaeological heritage in terms of the timber structures and array of artefacts they preserve. So what can these various records tell us about changes in settlement patterns and how can we establish if any of the observed changes in human activity was influenced by climate change? Palaeoenvironmental reconstructions frequently rely on ¹⁴C-based age models, and are thus subject to varying levels of dating imprecision. This inherent smudging of dates can be alleviated to some extent if tephra layers can be identified that can link and/or date studied sequences, but there remains the problem of tying the evidence back to the wider archaeological record.

One approach to addressing this issue is to carry out combined pollen and BSW studies from an individual site to examine if changes in land-use coincide or follow climate shifts in order to test if the latter had a likely impact on the subsistence economy. Another is to consider if the dating of the peatland archaeological features can reveal when past societies were and were not engaging with specific types of activity and to compare this to the

BSW evidence, as these environments will have been particularly susceptible to changes in climate. This paper will present examples of these approaches to examine human-environment interactions in Ireland since the Late Iron Age.

TIM SOENS

Department of History, University of Antwerp

‘Cultures of disaster or amphibious societies? Institutional responses to flood disasters in Flanders and Northern Germany, fourteenth-sixteenth centuries’

From the fourteenth century onwards, flood disasters after storm surges became increasingly frequent throughout the North Sea area. Whether this late medieval ‘Age of Storms’ was connected to climatic disturbances in the transition from the Medieval Warm Period to the Little Ice Age, remains questionable, as the increased frequency of flood disasters interfered with the severe demographic and economic crisis that hit most of Europe in the same period. In any case from the fourteenth to the sixteenth century catastrophic flooding became a pervading characteristic of the entire North Sea area, to such extent that it ceased to be anomalous and might have been integrated in a specific ‘culture of disaster’, not dissimilar to the one Greg Bankoff has revealed on the flood prone Philippines. On the other hand, Dutch historians like Petra Van Dam have recently advocated the use of the term ‘amphibious societies’ to describe the extreme coping and survival capacity of Dutch coastal society, disposing from the medieval period onwards of a whole array of technological and institutional tools to mitigate the impact of flooding and to prevent it from turning into large-scale disaster. In this paper, we want to focus on one specific aspect of this problem: the institutional responses to flood disasters in two North Sea regions: Flanders and Northern Germany. Both regions shared a common history of land clearance and settlement, and in the later Middle Ages both witnessed a similar increase in flood problems. However, whereas Flanders belonged to the densely populated and urbanized core of medieval Europe, this was much less the case in Northern Germany, which continued to be a predominantly agrarian and peasant-based region. Investigating their respective responses to flood disasters, we hope to isolate institutions that helped to mitigate or remedy the impact of flooding, questioning why some institutional innovations were introduced in one region, but not in another, and why similar

institutions were apparently successful in one region, but aggravated the catastrophic impact of flooding elsewhere. A better insight in the role of institutions in improving the resilience of coastal societies to flood disaster will result from this enquiry.

INGELISE STUIJTS

Discovery Programme

‘Trees and their products in Irish daily lives: from faggots to beams and shingles, and dirty ditch fills’

The time between c.900 and 1500 AD is a very dynamic period, with changes in many areas of society and settlement. This lecture will focus on wood in all aspects in human lives; from humble firewood to structural timbers, from various objects used in common households and rubbish thrown in ditches or burnt.

Remains of wood and charcoal are one of the most common ecofacts found on excavations. In the last ten years the Celtic Tiger years greatly increased our understanding of the past and brought much new information to the fore. Documentary evidence further contributed to our knowledge of historic times. The information extracted from the ground and that from medieval texts do not always paint a similar picture, however. Moreover, the complete picture is only just beginning to emerge, through management of the amount of Tiger Data by Irish wood specialists.

The growth pattern of wood is one aspect that can tell us about historic environments; was the land open and bare, or were wildwoods around. Maybe trees were struggling with marginal growth conditions caused by either climatic bad weather spells or local marginal origins near rivers or bogs. The number of rings can also be informative on the origin of the wood. And what about beetles, woodworms and other insects enjoying rotten stakes and beams, and the stories they tell about the site conditions? And last but not least, wood species identifications produce their own stories, on their location in the landscape, on import and trade, and the selection of certain species for specific purposes.

Registration Form

	Price
Conference fee [including lunch on Saturday]	€60/£50
Student conference fee	€30/£42
Individual session [Friday/Saturday/Sunday]	€15/£12

Sign up for:

- Conference fee _____
- Dinner [tick if attending — pay at conference] _____
- Friday individual session _____
- Saturday individual session _____
- Sunday individual session _____

Total: _____

Please use block capitals

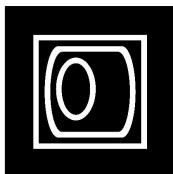
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