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AND THE
HISTORIC
ENVIRONMENT**

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Climate change and the historic environment

Floods in many areas of England last summer were a brutal reminder that weather can turn very nasty, even in mild British climes. As bridges were washed away, homes and offices flooded, communications cut and water supplies lost, people felt vulnerable and there were dreadful fears about how the historic environment could suffer. In the event, although houses and their contents in low-lying areas were damaged, most historic buildings and sites (and, most mercifully, archaeological stores) were on slightly higher ground, and escaped. Excavations were of course disrupted, as were



Silchester this summer. Wet weather hampered work on many excavations

HERs and other archaeological organisations but it appears that disasters were averted.

Lessons must be learned however, before waters rise higher next time. Guidelines on disaster planning *must* be heeded; duplicate records must be kept in safe places; areas liable to flood must never be used for storage; historic buildings need specialist treatment that may be quite different to modern ones (rapid drying by industrial dehumidifiers is especially dangerous for old woodwork). Over-reliance on modern technology should be avoided, for electricity may be the first thing to fail, and we must avoid cures that are worse than the disease. As articles in this *TA* demonstrate, some government initiatives to counteract global change could themselves do great harm and need assessing like any other development. Whether it is windfarms, biomass crops on old pastures, massive flood defences in sensitive areas, demolition of terraced houses, or replacement of wooden sash windows with short-lived uPVC units, archaeologists and other heritage professional need to ensure their expertise is heeded.

But climate change is nothing new for archaeologists. We know it has happened before, and that people had to adapt or die. This has long been familiar territory to archaeologists and scientists working on the Palaeolithic, and now it is being studied in later contexts. Such data may be a bit rough at present, but surely could become a unique contribution that our profession can make to understanding what lies before us.

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Notes to contributors

Themes and deadlines
 Spring: Training in archaeology
 deadline: 7 January 2008
 Summer: Archaeology and
 archaeologists in Europe
 deadline: 15 March 2008
 Autumn: IFA Conference papers and
 Annual Report
 deadline: 15 June 2008

Contributions and letter/emails are always welcome. It is intended to make *TA* digitally available to institutions through the SAL/CBA e-publications initiative. If this raises copyright issues with any authors, artists or photographers, please notify the editor. Short articles (max. 1000 words) are preferred. They should be sent as an email attachment, which must include captions and credits for illustrations. The editor will edit and shorten if necessary. Illustrations are very important. These can be supplied as originals, on CD or as emails, at a minimum resolution of 500 kb. More detailed *Notes for contributors* for each issue are available from the editor. Opinions expressed in *The Archaeologist* are those of the authors, and are not necessarily those of IFA.

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FROM THE FINDS TRAY

Why History Matters

This campaign by Heritage Link and other heritage organisations has gathered pace, as 1.2 million people pledged their support and got involved in its activities. The latest publication is made up of quotations by some of these people, expressing why history means so much to them and should be so valued by us all. 'If only politicians would study history!' is the concluding heart-felt cry.



Bad Archaeology
 Members of IFA will not normally be involved in such a thing, but if you want to see some de-bunking of fringe archaeology and various other dubious approaches go to www.badarchaeology.net. The contact is

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New legislative programme

The Queen's Speech this November included, as very much hoped, a *Heritage Protection Draft Bill*. This bill would bring forward the programme described in *TA* 64, 5, for a single register of heritage assets, improved records and public consultation, reform of class consents that allow ploughing of scheduled sites, statutory HERs, and guidance to local authorities on historic environment services. Now we just need money to pay for this programme...

Also promised was a *Cultural Property (Armed Conflict) Draft Bill*, allowing the UK to ratify the 1954 Convention on the Protection of Cultural Property in the Event of Armed Conflict (Hague Convention) and to accede to the Convention's two Protocols of 1954 and 1999. This would formalise the UK's responsibilities as part of the international community to respect of the cultural property of other nations, and has been widely demanded in response to the damage inflicted in particular on archaeological sites and museums in Iraq and Afghanistan.

New pay scales

Following the outcome of the local government pay negotiations for 2007/08 the IFA recommended minimum salaries from 1 April 2007 are
 PIFA level responsibilities - £14,197
 AIFA level responsibilities - £16,536
 MIFA level responsibilities - £21,412

These minima should also include the following (as agreed by IFA Council from 1 April 2007)

- 37.5 hour average working week
- employer pension contribution of 6%, subject to any reasonable qualifying period
- 20 days annual leave excluding statutory holidays
- minimum sick leave allowance of 1 month on full pay, subject to any reasonable qualifying period

In some cases employers may find themselves unable to meet these requirements. Whilst this is not best employment practice, IFA will expect any shortfall in benefits to be compensated for in pay.

Blarney Castle

Mark Samuel MIFA 2175 and Kate Hamlyn have just published *Blarney Castle: its history, development & purpose*, arising out of Mark's interest in Irish tower houses. The book deals with the castle from archaeological, historical and cultural perspectives, and takes a properly archaeological attitude to the much-kissed Blarney Stone.

FROM THE FINDS TRAY

Scotland's Rural Past

At a time of birthdays and centenaries, the *Scotland's rural past* project (see TA 64, 32-33) celebrated its first birthday with the launch of a website, www.scotlandsruralpast.org.uk. Backed by RCAHMS, the project supports local communities in investigating remains of long-abandoned settlements in their area, in the process learning valuable new techniques and skills in archaeological identification, surveying and recording. The website includes guidance notes and a full list of projects around Scotland, forthcoming events and training opportunities, and an online form for uploading recorded information and images.

Plea from IFA office

Some of your post to us is being delayed or even going astray because the full correct address is not used. Being within a university it is vital that porters know exactly where to deliver. Can all members ensure their databases and pre-printed labels are up to date, and make sure they contact us at

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More reminders

With this TA is enclosed the *Yearbook and directory* amendment sheet. Do please let us have your correct details (including any email address) as soon as possible, so the 2008 edition can come out accurately and on time.

New IFA staff

We have two new members of staff - Emily Peto on the Membership Team, and Richard Constable as part-time admin assistant.

FISH and IFA

The Forum on Information Standards in Heritage (FISH) is forming a new IFA Special Interest Group for discussion and development of information standards for archaeological practice. IFA Council approved formation of the group this November and the group is now finalising the constitution. The IFA structure benefits FISH by giving a formal constitution and status for the first time, and will also benefit practising archaeologists. The expertise that FISH has in developing standards for national and local historic environment records can now contribute to shaping the more detailed records created by archaeological work, and it broadens the standards setting role of IFA. Anyone interested in joining should contact edmund.lee@english-heritage.org.uk. FISH is online at www.fish-forum.info.



Training at Deeside. Crown Copyright 2007
RCAHMS

Happy Birthday! IFA

25

IFA is 25

This winter sees significant birthdays for major bodies active in British archaeology. The venerable Society of Antiquaries of London turns 300 this December and is celebrating in fine style; both our two surviving Royal Commissions, for Wales and Scotland, are flourishing and reach their first centenary in February; and IFA (the youngster but growing fast) will achieve its first quarter century, dating from our first Council meeting on 21 December 1982. This therefore seemed a good time to ask for updates on life so far and where each felt they were being led. Mike Dawson, Chair of IFA, starts off.

'Our 25th anniversary occurs at significant moment in the development of professional practice, when new legislation is promised and we have a chance of seeing universal evidence-based conservation at last. This is a time when archaeologists are to be found in all areas of professional practice, not only within the historic environment, but in conservation in its widest sense, in education, tourism, regeneration and town and country planning.

The impact of professional practice is receiving greater scrutiny both within academia and by government. Issues of accreditation, of expert opinion, of cultural resource management are constantly tested in public enquiries, by the media and in commercial practice. IFA is larger today than ever before, our training initiatives and RAO schemes provide a benchmark of due diligence which exhibits the profession's determination and confidence to the outside world. Yet shortage of resources could threaten the new legislation and has implications for the Institute's initiatives on training. In at least two shire counties abolition or reduction in status of archaeological posts destroys effective curation and development control at a time of accelerating

development. In higher education changes to the funding base to favour first degree students could impact on essential professional qualifications. The Institute lobbies on behalf of its members in all these areas, co-operating with other professional organisations to work more effectively. The 25th anniversary is, therefore, an opportunity to look forward with confidence.

It is also a time for innovation. More effective member services, greater authority in negotiation, improved stature are all areas which will help improve the status, careers and prospects of our members. The Institute needs to increase its membership to overcome perceptions that the sector is fissile, to argue effectively to government, to address those organisations that argue for less archaeology. The Institute needs to maintain its position as an innovative organisation but one that can deliver. Our modernising review will address such issues as the published output of the Institute, increasing the range of standard and guidance, improving emphasis on CPD, professional training and practice qualifications, and reforming the membership validation processes to encourage membership throughout the sector. We will almost certainly need to change the name of the Institute to reflect its broad role in archaeology and historic environment conservation. It will also mean increasing cooperation with other professional institutes and organisations through joint committees, groups and projects.

But at the heart of the Institute is a partnership between its Council and staff and its members, to achieve these objectives. I look forward to the next 25 years as the Institute grows not only in influence but in the numbers and level of involvement of its membership'.

Michael Dawson
IFA Chair

Happy Birthday!

The Royal Commission on the Ancient and Historical Monuments of Scotland is 100

Diana Murray



RCAHMS has been the memory keeper of the nation's built environment since February 1908, when the first Commissioners were charged to *make an inventory of the Ancient and Historical Monuments and constructions connected with or illustrative of the contemporary culture, civilisation and conditions of life of the people in Scotland from the earliest times to the year 1707... And to specify those which seem most worthy of preservation.* Subsequent Warrants removed the cut-off date of 1707 and added duties such as recording maritime sites. Today, the fundamental task is still to survey, record and collect, to form the National Collection.

Surveying team in Perthshire. Crown Copyright: RCAHMS SC370235



The first Inventory, Berwickshire, 1909, was not illustrated, but the second, Sutherland, contained measured plans, drawings and photographs, setting the principles for a basic record. Nowadays, much of this is achieved using methodologies undreamed of in 1908. The results can be analysed using GIS and 3D modelling and disseminated digitally using web technology. One key question we will be addressing during the Centenary Year is the future of this approach. Do these concepts still meet the requirements of recording the built heritage of Scotland in order to better understand and manage it?

In 1966 the collections of the Scottish National Buildings Record and the National Art Survey were combined with those of RCAHMS to create the National Monuments Record of Scotland. The emphasis now leaned more towards public service. From 1976 the Commission embarked on an aerial photographic survey programme, and in 1983 the records and functions of the Ordnance Survey Archaeology Branch were incorporated. By 1992, the more flexibly updated record was regarded as the inventory and core to the organisation, freeing publications to be more analytical, contextual and thematic. Other notable strengths of RCAHMS Collections are aerial photographic collections, architects' papers, industrial papers, personal papers of significant figures and excavation records. In 2008, the collections will be used to mount four major exhibitions of original material in Edinburgh.

RCAHMS has placed itself in the forefront of heritage management information systems. We must now ask what form should a future online record take and how can online Wiki-style public contributions be incorporated?

The present public interest in the historic environment could not have been foreseen in 1908, and our latest development is engagement in education and outreach activities. In our centenary year, alongside community activities and workshops related to projects such as Basil Spence and *Scotland's rural past*, we are undertaking a public vote for Scotland's Treasured Places (www.treasuredplaces.org), through which the public can engage with us as we celebrate 100 years of building a picture of Scotland's past.

Diana Murray
Secretary
RCAHMS

The Welsh Royal Commission also celebrates its centenary in 2008, a year after the National Museum of Wales and National Library of Wales. The creation of these three institutions a hundred years ago points up their relevance to the development of national identity, (even though the Commission was based in London until the second world war).

Like its sister bodies in England and Scotland, the Commission was a logical development from the Ancient Monuments Act of 1882, because it created a schedule of monuments of national importance through 'inventories', county by county, which would 'specify those which seem most worthy of preservation.' In Wales, the first inventory was published in 1912, and 21 were produced before the emphasis shifted to thematic, synoptic publications (21 of these also produced so far).

The Commission has grown and changed immeasurably over its century. The National Building Record was absorbed in 1963 and the Archaeological Branch of the Ordnance Survey in the early 1980s. Its archival role has continued to develop, and the National Monuments Record for Wales was created as its formal archive in 1963. This is now the largest photographic archive in Wales, with 1.25 million photographs, 67,000 drawings and 3 million pages of textual descriptions. Its site database provides information about 77,000 buildings and monuments across Wales, available on line since 2003 at www.coflein.gov.uk, in partnership with RCAHMS.

Royal commissions traditionally have short-term tasks, but investigation and archive functions for the historic environment are of permanent value. There has been a transformation in the diversity of features of the historic environment that society deems worthy of record (chapels are now as worthy of study as castles, off-shore archaeology is as important as upland sites). Like its parallel Welsh institutions of 1907-8 the Commission is emphatically about the future of Wales as well as its past.

The resources of the Commission no longer just facilitate decisions about protection and conservation but provide a permanent archive for heritage information, inform the planning process, drive outreach activities and advance understanding of subjects crucial to the character and identity of Wales.

Happy Birthday!

The Royal Commission on the Ancient and Historical Monuments of Wales is also 100

Peter Wakelin

Not a subject for Royal Commissions in 1908, Pontcysyllte Aqueduct in North Wales, completed in 1805 to carry the Ellesmere Canal over the Dee Valley, is recognised as an influential engineering masterpiece. The Royal Commission is working with partners on the nomination of the site for World Heritage Site status. Crown Copyright: RCAHMW

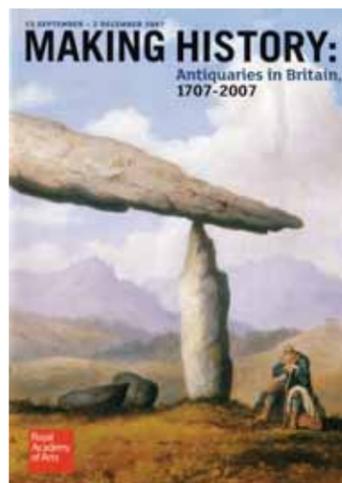
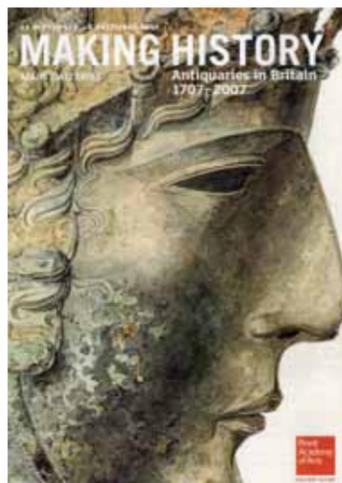


Peter Wakelin
Secretary
RCAHMW

Happy Birthday!

The Society of Antiquaries of London is 300

The Society of Antiquaries of London counts its foundation from 5 December 1707, when three friends met in a pub to discuss 'Antiquities' and vowed to meet weekly thereafter, on pain of a 6d fine. This simple formula worked, they gained a Royal Charter in 1751 and, as there were no museums or other repositories at the time, they made an impressive collection of artefacts, drawings and engravings (many commissioned by the Society), maps, books, paintings and other rather random antiquities. Their connections went nation-wide, and many items gathered in the 18th and 19th centuries in particular are of huge importance for modern scholarship. Today it has about 2500 Fellows, all proposed and voted in by their peers and all experts in some aspect of the material past.



Since 1874 the Society has leased Burlington House, a magnificent 19th-century building in a quadrangle in Piccadilly that it shares with other learned societies and the Royal Academy. This venue is familiar to many, as most archaeological organisations holding meetings in London come here (IFA's AGM and party usually start the autumn season). Its superb library too is well used by IFA members. The property that it actually owns – Kelmscott Manor in Oxfordshire – couldn't be more of a contrast. This 17th-century Cotswold farmhouse in a remote location by the Thames was the homely summer residence of William Morris and his family, and is full of memorabilia from that time, much of it of huge importance to scholars with pre-Raphaelite interests or involved in design.

Apart from the library and its collections, the activities of the Society include weekly lectures throughout term time (sandwiched between excellent teas before and sherry after), an ambitious publication programme that includes the Antiquaries Journal, support for research and conservation through grants, effective public advocacy and debate, fortnightly dissemination of anything likely to be of interest to Fellows through SALON (online and chatty and available to IFA members by emailing ccatling@sal.org.uk) and general support for the heritage sector.

This Tercentenary year is being celebrated with an exhibition called *Making History*, which has just closed at the Royal Academy (its fine catalogue is still available) and a festival programme of keynote public lectures to be held all around the British Isles, details of which can be found on the Society's website at www.sal.org.uk.

The future of the IFA: AGM debate

Kathryn Whittington and Peter Hinton

IFA's Annual General Meeting on 1 October 2007 at the Society of Antiquaries of London included discussions on the Institute's future, in particular whether it should expand beyond its traditional archaeological remit, following the recent PARN report (see *TA* 64, 6, and IFA website)

Mike Dawson (Chair of IFA) argued that with successes in recruitment, advocacy, standard setting, qualifications, learning placements and pay and conditions the Institute is growing fast. Convergence in the historic environment sector, the Heritage Protection white paper and the PARN report have provided greater incentives to initiate and implement change and to address areas of the profession where the IFA is under represented.

Gerry Wait (Giffords) believes that we will suffer a loss of relevance if the historic environment sector lacks a voice that government cannot overlook: we must not fail to integrate when our sector is squeezed. Gifford has responded to market pressure to give a unified response on environmental matters: an institute for the historic environment must similarly represent the diversity of our sector.

Kasia Gdaniec (Cambridgeshire County Council historic environment service) pointed out the range of professionals working in the historic environment, and the opportunities for integrating archaeologists and conservation officers to ensure that planners, developers and the public understand that best practice is founded on codes, standards and recognising membership of a professional body that includes a range of heritage sector interests.

Jez Taylor (Diggers Forum) recognised the desire to broaden the membership base of the Institute and

urged a clear commitment to increase support for archaeologists working for contracting organisations. Cynicism about the Institute's commitment to field archaeologists and improving their often appalling pay and conditions has diminished. Field archaeology is a core discipline within the profession with a popular public profile but low regard amongst archaeologists. Council is genuinely concerned about the problems: the membership as a whole should give due consideration to the role of field archaeologists.

Victoria Hunns (member of IFA and IHBC and Senior Historic Environment Specialist for Natural England, whose conservation work includes the management and conservation of archaeological remains, historic buildings and designed landscapes) welcomed the Institute's recognition that its name does not reflect the remit of its members and may deter potential members. The archaeological profession includes those that conserve the historic environment by enabling change through the planning process and those that undertake fieldwork to inform conservation or design decisions. The institute needs to appeal to all involved in investigating, managing or conserving our cultural heritage.

Seán O'Reilly (Director, IHBC) clarified that IHBC is keen to talk but did not want to discuss merger at the time of the PARN report. Mike Dawson reported that he and Dave Chetwyn (Chair, IHBC) are setting up a joint committee.

The future of the IFA: AGM debate

Hal Dalwood pointed out that academic archaeologists do not feel an affinity for the historic environment, and Andrew Marvell considers himself an archaeologist not a historic environment professional. Mike Bishop argued that the perception that all archaeologists are excavators has held the IFA back: we need to explain that this is a broad church. John Woodhead reasoned that as IFA portrays itself as a broad church it is to be expected that individuals fear a loss of identity: the solution lies in expanding the Special Interest Groups.

Nick Johnson (Cornwall County Council) said that Heritage Protection Reform has set the agenda for the next generation. Cornwall will have a unitary authority with a single service: the old distinctions are no longer valid and it is gross inefficiency not to have a single professional body. The two institutes (IFA & IHBC) should merge and if that does not happen then IFA should change its name and widen its remit. So far the councils of the two organisations have talked, but the members are baffled why there hasn't been a merger. Mike Dawson reported that IFA Council would support a merger, but Seán O'Reilly pointed out that it takes two to merge and requires understanding. IHBC has a very diverse membership – 400 architects, 400 planners, 56 archaeologists etc. Nevertheless we have to be more integrated.

Summing up, **Peter Hinton** concluded that the membership is responsible for many aspects of investigating and protecting the historic environment, but others' understanding of archaeology is narrower than reality. Professional institutes are about conforming to a code of conduct, and commitment to this stays with you wherever you go – it is good to see enthusiasm for joint working from sister organisations overseas. In a sector where professional practice is not regulated by law it is difficult to draw boundaries. We can only be 'an', not 'the', institute for the historic environment. Seán O'Reilly has said that IHBC is the primary institute for a minority of its members and is the secondary affiliation for the remainder; we could ask IHBC to fulfil the same role for the archaeologists as it does for other professions. We need to tackle the perception that the IFA should

only represent those who are involved in the investigation and interpretation of the historic environment: our Mission Statement *the IFA exists to advance the practice of archaeology and allied disciplines by promoting professional standards and ethics for conserving, managing, understanding and promoting enjoyment of heritage* has used similar words since 1982. Our proposals reflect the vision of our founders.

The public sector at national and increasingly at local level has integrated archaeologists and building conservation professionals, as have the private sector and voluntary sectors: the professional institutes lag behind. We were asked what would happen if the membership voted for a merger. If the other body is unwilling we cannot do it. Council has decided we must achieve a unified historic environment institute, if not with IHBC then alone. We must reform and may have to leave our comfort zone – we must recognise the value of the archaeology word, for all its scope is widely underestimated, and reassure members that we will not homogenise into something bland. To be attractive to the whole sector we will review membership entry requirements and may find that we do not need to alter them significantly, but how we promote membership will need major changes. We cannot go forward divided and uncertain. We must seek consensus but not unanimity; progress not procrastination. While we may not find a new name that has anything other than minority appeal, Council has the vision and backing to deliver real reforms.

A transcript of this debate is available on IFA's website, there will be a conference on the future of the Institute in the winter, and an action plan for the future will be presented and discussed at IFA's conference in Swansea (18-20 March 2008)

Kathryn Whittington
Publicity Administrator
Institute of Field Archaeologists

Peter Hinton
Chief Executive
Institute of Field Archaeologists

Vocational skills & academic courses

Kate Geary

As reported in *TA 65*, the Qualification in Archaeological Practice was launched earlier this year, based on National Occupational Standards, units of competence which describe what a competent person should be able to do in a particular job role. Since the launch, IFA has been working with the Archaeology Subject Centre of the Higher Education Academy and a selection of partner universities to examine the scope for using NOS and the new qualification to make archaeology degrees more vocationally relevant.

The aim is to align archaeology teaching at higher education institutions with the needs of employers and employees. By describing the knowledge and skills required for archaeological work, the NOS give us a means to assess how far relevant skills are being taught in higher education. The project will begin by comparing existing course frameworks from a sample of universities with the performance, knowledge and skills requirements of the NOS, to assess where they meet those requirements and where they need to be developed and adapted.

Partner universities have been chosen to represent a range of courses including dedicated Masters courses in archaeological practice at Birmingham and Manchester, a sample of undergraduate courses at Liverpool, Sheffield, Glasgow and Lampeter, a distance learning course at Leicester, a foundation degree course at Bournemouth and a continuing education course at Sussex. An initial assessment of course modules for the undergraduate programme at Liverpool showed that, although none of the modules met all the performance and assessment requirements of the NOS, many contributed significantly and there was considerable scope for adapting modules to align with these.

A 'self-help guide' will be produced so that other higher education institutions can relate their own provision to the NOS and the vocational qualification, and the project will develop guidelines for future curriculum development. At the end of the project, a workshop will explore any problems with the self-help toolkit following practical application by universities not involved in the original project.

Hopefully, by integrating the requirements of the NOS into academic course frameworks universities will be able to deliver academic and vocational qualifications together in archaeological practice in the future.

More information on the Qualification in Archaeological Practice can be found on the IFA website at <http://www.archaeologists.net/modules/icontent/index.php?page=199>.

Kate Geary
IFA Training & Standards co-ordinator

training

DELIVERY OF DEVELOPERS' OBLIGATIONS

Tim Howard

The 1980s and '90s saw a number of high profile planning cases in which lucrative development contrary to planning policy was argued to be justifiable in view of associated benefits. In many cases those benefits were cultural. For instance, significant retail development was proposed on greenfield land owned by Lord Romsey in Hampshire on the basis that funds generated would assist in repair and upkeep of Grade I listed Broadlands House. In this, as in other cases, the certainty of delivery was a very real issue.

Planning conditions and section 52 agreements existed but, in a time of 'boom and bust', it was scant consolation to have a legally enforceable condition when the money was long gone. Such risks still exist and one means of providing greater security to underpin obligations is to utilise a performance bond, an instrument whereby a bank or other financial institution guarantees to reimburse the local authority if agreed obligations are not delivered. English Heritage, in *Enabling development and the conservation of heritage assets*, 2001, highlighted the potential for the use of performance bonds in this context. They are also widely used for highway works and feature in DCLG's *Communities and local government's practice guide on planning obligations*.

Delivery is of course just as much a problem for archaeologists, and outstanding work is often left in a precarious position, particularly post-excavation work once the new building is up. Enforcement procedures do exist, but are not always fully utilised, leading to frustration when dealing with contractors whose fees have dried up. Also, if

obligations are not precisely defined (or archaeology services cannot justify the imposition of costs for such things as community involvement) the presence of a bond will add little. Furthermore, government appears to be moving away from the idea. For instance, in the 1990s the Department of the Environment commissioned a study of bonds to secure the restoration of old mineral sites, but its successor department has recently (in the newly published Minerals Policy Statement 1) set its face against their use save in exceptional circumstances (such as where there 'is reliable evidence of the likelihood of either financial or technical failure but these concerns are not such as to justify the refusal of permission'). Mineral Planning Authorities are advised that they 'should not seek financial guarantees from applicants, prior to the grant of planning permission, to deal with possible future breaches of planning controls that can be dealt with through existing planning enforcement powers and procedures'.

Nevertheless, bonds have been used in relation to archaeological works (John Williams, pers comm) and could have a role in the future. Other developments in planning law and policy, such as the Planning Gain Supplement (effectively a tax on planning gain) recently debated in Parliament, are not likely to provide funds for archaeology. Likewise, the tariff being piloted in section 106 agreements in Milton Keynes provides funds for infrastructure not for heritage.

Archaeologists and archaeological organisations (including IFA) are closely involved in consultations upon planning and other legislative and policy reform. We intend, in partnership with relevant bodies, to produce sample conditions and planning obligations to facilitate the delivery of heritage benefits.



Jobs in British Archaeology 2006

James Drummond-Murray

By the time you read this it will be nearly 2008 but here is the review of jobs in IFA's Jobs Information Service for 2006. The number of jobs slipped back slightly from the high of 2005 but was still a healthy 199.

For site assistants, from the 39 different advertisements, there was a slight improvement in pay but the rate of increase of the previous two years slowed markedly. Compared to virtually all other categories site assistants certainly got a raw deal this year (not for the first time I hear them chorus). It will be interesting to see next year's figure as the word on the street is that it has been hard to find site assistants this year. Supervisors were almost stationary last year, still below the AIFA minimum of £16,137 (though 'supervisor' means different things in different organisations: IFA's new benchmarking exercise may achieve greater standardisation here). The field officer/project officer grade marched forward by £1000 as did

project managers (never a grade to be left behind). Junior CRM/SMR posts moved forward a respectable £1400 on average from 29 posts advertised but, in a leap reminiscent of FTSE's directors, senior posts increased by £4000 from 12 advertisements and smashed through the £30k barrier (as in 2002 but that was only from two jobs). Specialists made a welcome leap forward, up over £2000 to £19,250 – perhaps there is a future in brick and tile after all. Illustrators were up £2k to £17,734, again a healthy increase from a healthy number of jobs (28) after several years of stagnation. Let us hope this is a start of a trend and not a one-off.

Overall there has been an encouraging growth for most groups, apart from those at the very bottom – site assistants. This must not be allowed to become a trend. Under £300 a week is simply not acceptable.

The only category that saw a decrease was consultants, whose average dropped around £500.

	AV WAGE 2006	NO OF ADS	MENTION IFA	AV WAGE 2005	AV WAGE 2004	AV WAGE 2003	AV WAGE 2002	AV WAGE 2001	AV WAGE 2000	IFA MINIMA APRIL 06
Excavator/ site assistant	£14,294	39		£14,179	£13,710	£12,903	£13,232	£12,378	£12,024	£13,854 (PIFA)
Supervisor	£15,879	17		£15,900	-	£14,765	£14,806	£12,741	£12,868	£16,137 (AIFA)
Field Officer / Project Officer	£18,593	31		£17,598	£16,563	£16,592	£18,489	£15,572	£15,518	£20,895 (MIFA)
Project manager	£23,350	23		£22,259	£20,957	£19,701	£21,536	£20,881	£19,447	
Junior CRM / SMR	£19,380	29		£17,992	£16,941	£17,274	£15,563	£17,532	£15,608	
Senior CRM / SMR	£30,104	12		£26,024	£21,397	£23,840	£30,605	£23,012	£23,486	
Specialists	£19,250	13		£17,011	£15,254	£17,170	£14,992	£16,531	£14,632	
Illustrators	£17,734	28		£15,778	£15,992	£16,914	£14,085	£14,908	£15,497	
Consultants	£19,421	7		£20,000	-	-	-	-	-	
		199 (210)								



W(h)ither the profession?

Michael Heaton

Seventeen years after planning guidance created a market for professional archaeologists and ten years after IFA's business plan set out a 'road map' to full professional status, most practising archaeologists still feel underpaid, under-trained and under-valued. Are there alternatives?

► Underpaid?

Certainly, senior members of our profession earn less than Chartered Surveyors, but salaries for graduate archaeologists are equivalent to those of graduate surveyors (c.£12-£14k). This does not rise until individuals acquire, on their own initiative, Chartered status or other recognition. But why do we pay our directors less than the construction professions? It is possibly because most archaeological contractors track the NJCC pay *restraint* mechanism for local government; the IFA publishes 'recommended' pay rates that are *lower* than those enjoyed by the construction professions and it has sought (TA 63, 4-5) to publish recommended 'charge-out' rates for specialists *lower* than those enjoyed by specialist construction professionals.

We should be able to pay more, because archaeology is actually more profitable than construction! The Latham Report (1994) quotes an average profit of 1% for the construction industry, but the publicly deposited accounts of most of our larger companies suggest 3% is the average for archaeology. Unfortunately, our turnovers are pitifully small compared to other 'Specialist Contractors'. Monetarist theory expected us to raise our prices to the 'market clearing price'. Unfortunately, no one told us.

► Under-trained?

Certainly, most newly-graduated archaeologists are ill-equipped technically and intellectually for the demands of professional archaeological practice, but it was always so: most of us working before PPG16 followed an academic qualification with practical experience on 'the circuit', and have managed quite

well. A bibliography of peer-reviewed publications is a proof of practical and intellectual competence. Anyone with a bibliography and 10-15 years experience in excavation, the specialisms, publication and management knows what a graduate archaeologist needs to learn in order to progress and be useful. The ATF has gone to great lengths to codify that body of knowledge and has promulgated vocational courses to teach it, whilst bursaries have been funded to ensure that some aspirant archaeologists won't have to pay for their own training. This is welcome, but is it the IFA's responsibility to *provide* training and will there ever be enough bursaries?

In the construction professions, students are taught the technical and professional skills needed by the industry, but they are not considered competent and eligible for chartered status – ie to call themselves professional – until they have completed a programme of peer-reviewed in-service training. The RICS calls this the Assessment of Professional Competence (APC). Responsibility for progressing through the APC rests wholly with the individual; the employer is obliged only to provide the opportunity, whilst RICS sets the parameters. Anecdotal evidence suggests a 40% fail rate at the RICS interview. This strategy could be applied easily to archaeology.

► Under-valued?

Undoubtedly, but primarily by ourselves. The continuing success of *Time Team* and its many imitators demonstrates an enormous public interest in what we do, but we have failed to translate that stakeholder interest into influence and hard cash. Asked by the author for a list of 'recognised' professions and institutions engaged in the heritage sector, neither RICS, RIBA or RTPI mentioned IFA or professional archaeologists; we have no standing committees on archaeological issues with them, despite the problems archaeology causes their members; and we ignored overtures from the Construction Confederation and the National Building Specification. The standard text book on the planning system (Cullingworth and Nadin, 2002), read by all architects, surveyors and town

planners, is explicit that PPG16 does not require developers to pay for analysis or publications costs. How did *we* allow that interpretation to go unchallenged? Possibly because most of our 'outreach' is directed at school children.

Secondly, our general ignorance and misunderstanding of property development economics leads us to under-value ourselves and our skills. Whilst desk-study and evaluation costs are broadly equivalent to basic geotechnical site investigation costs, the archaeological costs arising from development are insignificant compared to total development prices. This does not mean we should be profligate, but it does mean we can afford to charge more.

Thirdly, our inherited protocols make professional influence difficult to exercise. Whilst it is right that local planning authority curatorial archaeologists should identify development sites with potential archaeological issues, should the same person should dictate how those issues are resolved? The norm is a prescriptive specification which deters development of alternative techniques or value-based analyses. We are treated and paid as contractors or, worse, proxies of local government, rather than professionals.

► No journal

We have no canon of methodological analysis. Other professionals, especially in the construction industry, have a growing library of peer-reviewed methodological analyses through which new techniques and opinions are developed and tested. We have Barker and three small clusters of methodological review from Southampton University, Kent County Council and English Heritage. These are one-offs: there is no journal of archaeological practice.

► No client focus

But our greatest failing is our lack of client focus. The word 'client' appears once in IFA's *Code of conduct*: in an amendment to notification procedures at Rule 1.4. The possibility that the client might have

a stake in the project and our execution of it does not feature in any IFA guidance. RICS, RIBA and ICE put the client at the centre of their codes of conduct and practice notes. *Professionals* are paid to further the interests of the client through the exercise of their intellectual skills. Obligation to a client is the key component of most legal definitions of a profession; it is termed the 'fiduciary relationship'. Until we can demonstrate that we are prepared to enter into this, we will continue to be treated as contractors rather than professionals.

Change could be effected. All vocationally-oriented archaeological degrees should include modules on Property Development Economics, Contract Law and Administration, and Professional Law – and we should develop an APC programme. Whither the profession or wither the profession, it is in our hands.

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Meeting the climate change challenge – at the next IFA conference

Gill Chitty

Over seventy leading archaeologists and conservation specialists met in July for CBA's climate change event with the Council for Scottish Archaeology and UCL Centre for Sustainable Heritage. *Adapting Archaeology: foresight for climate change* presented some sobering scenarios for climate and presented an overview of current research into its effects on the historic environment. A series of thought-provoking presentations on actions needed in response to the rapid changes already affecting our landscape covered coastlines, countryside, and historic buildings. This was the first opportunity for archaeologists to explore together some forward thinking on the likely effects of climate change for our discipline and how priorities in archaeology will need to be adapted to meet this new challenge.

Some actual effects on archaeology and the historic environment are already clear. These include

- rising sea levels and coastal erosion
- more frequent storms and heavy rainfall
- flooding, landslips and erosion.

Torrential rain triggered the Boscastle disaster in 2004: demand for emergency recording will increase to respond to extreme weather events. Photograph: National Trust



Although it is heavy rainfall that has dominated this year's weather in the UK, changing seasonal patterns will also bring drought and the risk of drying out for vulnerable wetlands and archaeological sites.

In addition to these direct effects there are the indirect impacts from adaptation and mitigation measures being introduced to deal with climate change and to reduce greenhouse gas emissions. These include

- renewable energy development, on land and offshore
- flood and coastal defence construction
- energy efficiency measures which impact on historic buildings
- biomass crops that increase plough damage and erosion on marginal land
- changes to historic buildings

Monitoring and understanding

Clear directions for future research and policy in archaeology emerged. First, there was a familiar message: we lack good data about the pace, mechanisms and effects of climate change on the historic environment. Systematic monitoring, data collection and research are all in short supply. The conditions of *in situ* preservation in buried deposits have been a subject of research for a decade or more but mechanisms for remote and *in situ* monitoring will become increasingly important. Good quality information is essential to underpin the second message: the need for well-informed choices about action, based on better understanding of the level of risk.

Difficult choices

Not that archaeologists and heritage agencies have been slow to react. Initiatives already underway range from major coastal zone and wetland survey programmes to individual projects to mitigate damaging effects (re-locating historic buildings, constructing flood defences, introducing groundwater monitoring), to undertaking detailed recording in advance of loss. But society needs to be informed about difficult choices about historic places under pressure for change. Archaeologists need to learn fast and then share that knowledge with local communities.

Buildings and sites at risk

We also need new skills and capacity. Many archaeological operations will take place in the context of disaster recovery, salvage and emergency recording following flooding, landslip and building subsidence. The built heritage will receive the impacts of extreme weather and of mitigation measures more severely than buried archaeological sites. The demand for above ground recording will increase in advance of demolition or imminent collapse, or to aid relocation and reconstruction of buildings being moved to a safer location. Coastal erosion will be one of the most challenging effects. A study for the National Trust indicated that by 2100 up to 60% of the coastline that it manages would have eroded up to 200 metres. Some 500 archaeological sites and historic buildings would be at risk on the Trust's estate alone.

Archaeological creativity

Examples of archaeological creativity are already emerging. In Scotland, the Shorewatch programme, working with CSA's Adopt-a-Monument scheme, is a great example. Unst Archaeology Group's project on Shetland began as an investigation of an Iron Age house eroding on the shore and evolved into a community project to conserve and present the structure for the public, in the knowledge that its eventual erosion remains inevitable (see p33-4). The project has been an important and positive part of the process of coming to terms with the pace of coastal erosion and the need to recover something for the community from what will be lost.

Archaeology can make an important contribution to the national debate about climate change, by involving people and revealing ways in which we have always adapted and transformed our relationship with the environment. Can archaeology as a discipline tell a new and richer story of climate change, helping society come to terms with changes that are happening?

This is the theme for the climate change challenge session at IFA conference next March. We live today in an environment that society has come to regard as generally favourable for humans and predictably stable while, as archaeologists know, the truth is that here in western Europe we have just been having a fairly settled patch for a few centuries.

Details of the IFA conference and programme are on the website at www.archaeologists.net

As coastlines come under pressure intertidal archaeology will be increasingly vulnerable. Photograph: Jason Wood

The *Adapting archaeology* conference presentations and CBA's new Climate Change pages are at <http://www.britarch.ac.uk/conserv/climatehome.html>.

The Shorewatch project is at <http://www.shorewatch.co.uk/>

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Coastal recording by volunteers in the Shorewatch Project. Photograph: Tom Dawson, SCAPE





Adapting to rural land use change: a view from ALGAO:UK

Ken Smith

As part of CBA's conference *Adapting Archaeology: foresight for climate change*, Ken Smith, on behalf of ALGAO:UK looked at some of the impacts climate changes will have on historic landscape character and local distinctiveness, whether from the changes themselves or measures being taken to counteract such changes.

Coastal retreat at Sidmouth, Devon: over half of our coastline may be eroded by up to 200m in the next century. Photograph: Jason Wood

Direct impacts on the rural historic environment include rising sea levels, inundation and rainfall in more intense bursts. Extreme weather events will result in more frequent and severe flooding. Cropping regimes will change, with less land left bare over winter. Farm buildings will be required to house stock that now over-winter outside, or stocking levels may be reduced to enable wet land to sustain the impact of animals and equipment. Increased temperatures will reduce soil moisture, and cultivation patterns may shift as arable farming moves north in pursuit of higher rainfall. Reduced soil moisture levels will affect which crops are grown and therefore how the land is managed. Deep-rooting crops have a significant impact on buried archaeology, through root penetration and de-watering. Historic landscape may have to change, to accommodate larger or different machinery. Increased demand for summer stock shelters is likely in remote locations with impacts on the character of the historic landscape, on traditional farm buildings and on any associated buried

archaeology. Conversely, lack of provision could see abandonment of land with detrimental consequences for archaeology and landscape character.

Losing character

Fewer frosts means more pests, so traditional planting schemes in historic gardens will become increasingly difficult to maintain. Historically authentic tree planting schemes may also become untenable. Beech trees will be the first to be affected by increased temperatures in the south and east, with a loss to local distinctiveness and landscape character. We need to re-examine the philosophical bases used to justify actions for both woodland management and traditional garden planting schemes. We claim that we are managing change, but are we? Do we maintain the status quo more than we manage change? We need to identify ways to inform prioritisation, because we are going to lose many sites and landscapes without appropriate recording.

Food or fuel?

Indirect threats include biofuel and biomass crops. Both have implications for the historic environment through impact on historic landscape character, root penetration and de-watering, not all of which are fully understood. Associated British Foods and BP are to invest £200 million in a 400 million litres per annum bioethanol plant, consuming 1 million tons of wheat sourced in Britain. The UK aims for 5% of motor fuel to be biofuel by 2010. Production conflicts – food or fuel? – and increased prices – seem inevitable. Intensification of agriculture is likely to be the answer, to benefit from commodity price increases. Environmental stewardship is already experiencing some resistance to sign-up in the face of the current increase in wheat prices.

Losing land

57% of English Grade 1 land, containing great numbers of archaeological sites, lies below 5m OD, with a significant proportion at risk of either loss, episodic inundation, salination, storm surges or severe weather events. Drier summers and soil moisture loss could see traditional arable crops move from the south and east to the north and west, where intensification will involve ploughing of existing pasture. Replacing pasture could see old intake again under cultivation and pressure on moorland itself to provide grassland for flocks and herds.

Some generic adaptation principles have been proposed by biodiversity colleagues to reduce vulnerability and manage for uncertainty (Mitchell et al 2007), and these are equally applicable to the historic environment. These cover ways to reduce direct and indirect impacts, to increase resilience and to accommodate change. Key requirements are monitoring and surveillance, development of an evidence base, and knowledge transfer and communication.

Biodiversity connections

Research is needed to improve our understanding of the impacts of climate change and to develop evaluation and management methodologies, while the impacts of existing and proposed adaptation policies should be quantified locally, regionally and nationally; robust headline indicators of climate change impacts on the historic environment need developing and testing; and this understanding must input into legislation, policy and practice.



Upland erosion, Coledale Hause, Cumbria: both drought and heavy rainfall intensify erosion effects. Photograph: Lake District National Park

The England Biodiversity strategy identifies seven key messages

- climate change is happening
- it is a new and rapidly growing threat
- we need to revise our approaches
- we need to start to adapt our policies and activities now
- there are many things we can do on the basis of existing knowledge
- our understanding of impacts is still developing
- we need to cope with an uncertain future

These are all relevant to the historic environment sector. They underline the need for partnership, the identification of not just those with whom the threats and the solutions have resonance – in biodiversity, agriculture, landscape management – but in town and country planning, in minerals provision, those developing legislative and policy responses. These are also seeking solutions to this common problem.

Ken Smith
Chair, ALGAO:UK

Mitchell RJ et al 2007 'England Biodiversity Strategy – Towards adaptation to climate change.' Defra. (<http://www.defra.gov.uk/wildlife-countryside/resprog/findings/ebs-climate-change.pdf>)

THE ENVIRONMENT AGENCY: *protecting the historic environment*

Ed Wilson

The British summer of 2007 saw some of the most significant flooding for a generation. Clearly the climate is changing; the frequency of extreme weather events will increase and sea levels rise, with significant implications for the historic environment. The Environment Agency manages flood risk in England and Wales and now has an in-house team of archaeologists who manage the interface between heritage and the strategic protection of property and life from flooding.

LIVING BY THE WATER

Human settlement has always been dependent on a fresh water supply for irrigation, domestic use and food. Settlement sites of all periods are subsequently concentrated along our rivers. River valleys and coastlines are focal points for other natural resources, in many cases forming a defining element of the landscape. They also have great strategic value, forming borders between groups of people and also providing the transport corridors that linked them.

HISTORIC ENVIRONMENT ADVICE

Environment Agency projects regularly need to construct substantial linear barriers or excavate new pools or channels in these archaeologically sensitive environments, and flood risk management projects can often have implications for the historic environment. These challenges are managed by a dedicated environmental risk management team, the National Environmental Assessment Service (NEAS), which includes archaeologists who advise impact assessment teams and Environment Agency's engineers on historic environment issues and assessment procedures.

This team has significantly improved the management of archaeological risk in the organisation, making archaeological management a key feature within larger programmes. NEAS archaeologists have developed their own best practice guidance built around a proactive approach. We can take direct responsibility for archaeological management and are recognised within the heritage sector as a setter of good practice.

THREATENED BY DEFENCES

Flood banks disturb the ground on which they are built and also require large borrow pits. These not only disturb archaeological sites but cause localised changes in soil conditions. The NEAS archaeological team lead in selecting sites for borrow pits and oversee archaeological monitoring during geotechnical ground investigations. Similarly, flood walls in constricted urban locations may have a surface footprint narrower than flood defences but need foundations that are several metres in width and depth. Because of their less visually intrusive nature they are often the preferred choice by local authorities and communities, so NEAS archaeologists work with other Agency staff to protect the historic environment through careful design, modification to accommodate archaeologically sensitive elements and careful landscaping.

We are also exploiting new sources of archaeological information, including the Environment Agency's own extensive LiDAR archive, which gives high resolution images of earthwork sites and historic landscapes. This enables us to move archaeological risk away from the construction phase of our projects by undertaking the majority of archaeological work in the pre-construction window.

LEAVING MONUMENTS AT RISK

Hard coastal defences, whether concrete walls or rock armour boulders, pose their own problems. Often rich intertidal habitats are lost, as the coast is prevented from changing in a natural and gradual way. Our coastlines will inevitably change as sea levels rise and our challenge is to find sustainable ways to manage that change.

In some locations hard coastal defences will be abandoned, reducing pressure on coastal habitats and allowing a more sustainable coastal defence regime to operate. There will, however, be implications for the historic environment. Some coastal defences currently protect monuments and withdrawal of these defences may remove protection from natural erosion. One challenge for

the archaeological profession is to manage this coastal change, to prepare and prioritise resources to mitigate these natural impacts.

As flood defences structures have developed over many years they are often tightly bound into existing buildings along river corridors, forming a coherent line of flood defence. When these structures have historic significance there are particular approaches which can minimise the physical and visual impact. This can include modifications to existing buildings, making them part of the defended line, temporary flood defences or the upstream storage of flood water.

PRESERVING PEAT

One factor that dictates the scale of a flood is the speed at which water moves from upland areas down through the tributaries into major river systems. These rates of flow are monitored by the Environment Agency, to help predict if and when flooding will occur. The slower this water enters the system the more time there is for our rivers to discharge naturally into the sea. Upland peat areas play an important role here. Peat acts as a sponge, holding back water and delaying peak flood events. This flood defence role is another reason to protect these archaeologically important areas. Peat also has a more direct role in climatic change, for waterlogged plant material within it acts as a vast store of carbon. When peat erodes this carbon is released as a greenhouse gas.

Upland peat is a good example of the intricate interrelationship between the historic environment, flooding and climate change. It will only be by taking a holistic approach that we can tackle the environmental challenges of the modern world.

INFORMING DEBATE

The Environment Agency archaeological team are working with engineers to record, protect and preserve the heritage and legacy of earlier generations of engineers. But are there ways that we as archaeologists could inform the climate change debate? We have the information and the skills to illustrate how people have adapted to past changes in the natural environment. We can also illustrate how failure to adapt to change has led to human and environmental disaster. The archaeological record is rich with examples of human adaptation to environmental change, of the use of sustainable energy sources and of a close relationship with natural systems: all lessons which need to be retold today.



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Environment Agency repairs to the tidal gates in Abererch, North Wales. The Environment Agency own a large number of historic water management structures. Many still perform important functions and require regular maintenance and repair

Archaeological excavation of the footprint of a new flood bank at Burton Abbey, Staffordshire. Oxford Archaeology

Environment Agency staff inspecting the flood level markers on the banks of the River Trent in Nottingham. The changing climate will result in an increased frequency in extreme weather events

REDUCING ENERGY USE in TRADITIONAL BUILDINGS

Phil Ogley



Cotton and hemp insulation tightly packed between rafters. This is one of several insulation products with good environmental credentials that are compatible with traditional building performance. Photograph: Oxley Conservation ▶



▲ An extreme example of the damage caused by cement render on traditional buildings. Photograph: Oxley Conservation



◀ A fan pressurisation test in a traditional building. Here the test was repeated frequently during works to give instant feedback on the success of work to fill cracks. Photograph: Oxley Conservation

▲ Adding an insulation to create a 'warm' roof on a grade I listed mansion. Photograph: Oxley Conservation

It is estimated that two-thirds of the 2050 building stock exists today and that at current rates it will take a thousand years to replace. About 20% of that stock pre-dates 1919 and is therefore likely to be of traditional construction. If carbon emissions from the building sector as a whole are to be cut by 60%, traditional buildings will have to make a big contribution. But are the standard recommendations of government, local authorities (and interested members of the building trades) really the best way forward when dealing with traditional buildings?

Importance of understanding

It is a conservation imperative that the development and significance of a structure is understood before making changes that might harm that significance, and this includes improvements to energy efficiency in traditional buildings.

To begin with, understanding breathing performance is vital when making energy efficiency improvements, or wall insulation could become the new cement (a disaster). Failing to understand the 'breathing' nature of a traditional building can lead to damp, decay, the spalling of soft masonry and even structural failure. We must understand too how the building is used: by whom, for what purpose, and with what requirements. The heating strategy for a church used only on Sundays will be different from that for one used for playgroups every day. Buildings with sensitive contents may need humidity controls, others not.

Understand energy use

To understand how buildings perform thermally is essential, and a year-long programme of temperature and humidity monitoring, together with an analysis of actual fuel usage, is the minimum before investment in changing heating or insulation. Fan pressurisation tests, now compulsory for new buildings, should be used to determine the size and location of draughts, and thermographic imagery and dampness testing can help identify where problems exist.

First steps: change usage and address maintenance

Better habits should be the next recommendation: turning off lights and appliances in empty rooms, reducing lighting levels, using blinds and shutters to regulate light and heat loss etc. Intelligent heating controls, light sensors, timers on vending machines and similar measures all save energy. Attending to causes of damp will save energy as well as fabric decay; damp walls are poor insulators, they need more energy to heat up and more ventilation to dry them out. Repairing windows and doors makes them less draughty. Servicing an existing boiler is often better for the environment than replacing it. Cleaning windows and light fittings cuts lighting bills.

When all of these measures have been taken the energy use of the building should be reassessed. Only at this stage can informed decisions be made about costly, intrusive interventions such as insulation or solar panels.

Beware of predictions

Unfortunately, predicting likely savings is difficult – standard computer models of building energy use, like SAP and SBEM, make assumptions based upon modern construction and usage that don't hold for older buildings. We have to make sure that models accurately reflect current realities before trusting their predictions.

Take the opportunities

Equally, we must take opportunities when they arise. When roofing repairs are needed, as they were at the National Trust's Greys Court, it would be criminal (metaphorically and possibly literally) to miss the chance to insulate the new roof. All repairs and alterations to historic buildings now *must* be made with thermal performance, both for insulation and air-tightness, in mind. Upgrades are available for most elements of traditional buildings, though insulation of solid walls remains experimental. When changes have been made owners are strongly encouraged to continue environmental monitoring, to measure actual changes in fuel usages, and to share their experiences, good and bad, with others.

Sometimes, grand gestures just don't make sense for traditional buildings. Solar panels and wind turbines are rarely visually acceptable, and historic roofs may need strengthening before they can support such devices. Whatever double-glazing salesmen may say, replacing wooden sashes with uPVC units is both visually unacceptable and environmentally unsound, as such units have a short life and a heavy carbon footprint for manufacture and disposal. Rather than measures which will harm the fabric and won't pay for themselves, consider measures outside the building, such as public transport systems and electricity from 100% renewable sources.

As with all alterations to historic buildings, caution, compatibility and reversibility have to be guiding principles.

In summary, older and traditional buildings can rise to the challenge of reducing carbon emissions. But they will do so in different ways than modern buildings, ways that are developed from an understanding of the building rather than a reliance on standard solutions.

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Sustainability and the SPAB

The Society for the Protection of Ancient Buildings (SPAB) accepts that everyone must reduce their ecological footprint. We also believe that building conservation is inherently sustainable and that the Society's overarching philosophy of 'conservative repair' offers a guiding framework that is as relevant now as it was when William Morris founded us in 1877. Sustainable living involves more than just cutting heating bills – it is a whole attitude of mind.



A listed 17th-century cottage near Stansted Airport. Airport operator BAA is being forced to remove unsuitable plastic windows that it has installed illegally, after SPAB alerted the local authority to unauthorised work. Owners of old buildings need to be aware of their responsibilities, despite commercial and governmental pressures to undertake unsuitable works

As Phil Ogley (p22) described, the basic principle of good architectural conservation is to preserve as much of the original fabric as possible. Regular maintenance will reduce (or obviate) the need for repairs later, and Morris encouraged us to 'stave off decay by daily care, to prop a perilous wall or mend a leaking roof'. SPAB runs an annual National Maintenance Week to highlight the importance of good upkeep. By comparison, replacement is worse for both conservation and resources. It is illogical to replace long-lived wooden windows that need a little repair with double-glazed units with a short, 30-year life (less in many cases).

Douglas Kent

A general premise of like-for-like materials is endorsed. This can be advantageous environmentally because traditional materials, including unfired earth, lime mortar and timber, require less energy than steel, concrete and aluminium. Traditional materials should also be available locally, avoiding transport. By advocating that new material should be fitted to the old and not the old adapted to accept the new, more ancient fabric is saved. Good conservation practice encourages responsible methods over short-term expediency. Spray-on insulation is currently being heavily marketed for the undersides of roofs, for instance, but its use can be environmentally irresponsible. Such treatments prevent proper inspection, hinder reuse of slates or tiles and increase the risk of timber decay.

SPAB has always emphasised that it is essential to understand how old buildings work, including their need to 'breathe'. Over-insulating and over-draughtproofing an old building may simply make it warm and damp – potentially increasing condensation, timber decay, mould growth and health problems such as asthma. However, as Phil Ogley points out, 'quick wins' can often be achieved without major intervention. Loft insulation using natural materials like wool, lagging hot water cylinders and improving boiler controls are harmlessly beneficial.

Given the right approach and understanding, it is possible to improve the thermal efficiency of old buildings. It is other sectors, especially aviation, which will do more damage. Changes to the government's approach are urgently required if we are to tread more lightly on the planet.

Douglas Kent
SPAB Technical Secretary

Energy Efficient Historic Homes: Case Studies (CE138), Energy Saving Trust 2005 (www.est.org.uk)

Terraced housing: *a threat to the planet?*

Lynne Walker

A great many people live happily in terraced housing (*like me- Ed*). Warm, secure, efficient in space and use of services, good for community life and for transport (if not for parking) and, above all, already built, they would appear to meet any carbon emission agenda. Yet the government has declared that mass demolition of such properties is necessary, bringing it into conflict with English Heritage, CBA and some very angry residents.

Homes Under Threat (HUT) is one community group that has made its feelings felt. At a conference last summer, representatives from twenty areas affected by demolition proposals called on Hazel Blears, Minister of Communities and Local Government, to take a new look at the planned Compulsory Purchase Orders within the controversial Housing Pathfinder Programme and other local communities blighted by threat of the bulldozer. Their spokesperson Sylvia Wilson of Nelson, Lancashire, said *'It does not make sense for the government to be destroying communities by knocking people's homes down'*. Prof Anne Power (LSE) added *'There is a crisis of affordable housing... so don't knock down affordable housing! Refurbishment is much more environmentally sound than building new!'* The Housing Pathfinder programme, which continues to roll across the north of England, was singled out for particular criticism

Terraced housing at Portland Street, Whitefield, Nelson Lancs and the Leeds Liverpool Canal. These houses will now be retained, but their traditional character will change

It can be worrying too when refurbishment programmes are aimed at achieving zero carbon homes at all costs. A considerable proportion of the Whitefield Lancs Masterplan, Design and Access Statement (09/03/2007 Maccreeanor Lavington outline planning application) for example is taken up with the Sustainable Energy Strategy. The issue is how to make refurbished terraced housing as energy efficient as possible and for the site (Conservation Area) what system will be used to generate heat and power. Unfortunately, the recommended doors and windows are not available in this area, and set up costs for provision of biomass boilers, biofuel CHP using a sunken store etc (eg, £30,000 for a 6KW wind turbine, which is in any case unsuitable for this area) are prohibitive for affordable housing, 'Nevertheless they will be considered as a key element of the marketing of the finished scheme and enhance the image of the development'.

Whilst in no way decrying the need for action to cut down carbon emissions that lead to climate change, let change be done in a way that does not destroy or damage historic fabric and historic character. Let it also be change that has public support and understanding. We should start from facts on how efficient historic housing is. Research must be done and published incorporating evidence on embodied energy and density of housing.

Lynne Walker
Historic Buildings Officer
Council for British Archaeology



Winter 2007 Number 66

Guidance on climate change and the historic environment

Steve Trow

Climate change has the potential to seriously damage the historic environment and to impair future generations' enjoyment of their cultural heritage.

Possible threats to historic assets include the direct impacts of climate change and also the impact of adaptive responses, and policies to increase renewable energy supplies and reduce the demand for energy. English Heritage published an initial position statement *Climate change and the historic environment* in January 2006. Such is the rapidity with which government policy in this area is developing that we plan to produce an updated second edition early in 2008.

English Heritage has been undertaking research related to climate change since the mid-1990s, when we instigated a strategic review of coastal archaeology in the face of rising sea levels and possible increases in storminess on our maritime heritage. Since then we have considerably broadened the range of our climate change-related research and published guidance on a wide range of allied topics.

The revised version of *Climate change and the historic environment* will provide a high level summary of the issues, suited to the non-specialist. It will signpost the reader to the principal sources on the science of climate change, key aspects of the government's strategic response and the increasing range of English Heritage research and guidance on the issue. It will examine the risks and uncertainties in climate change predictions and consider the difficulty of translating predictions into practical management actions. It will also consider what lessons today's policy makers might draw from the

historic record and will set out the criteria for future EH research in this area.

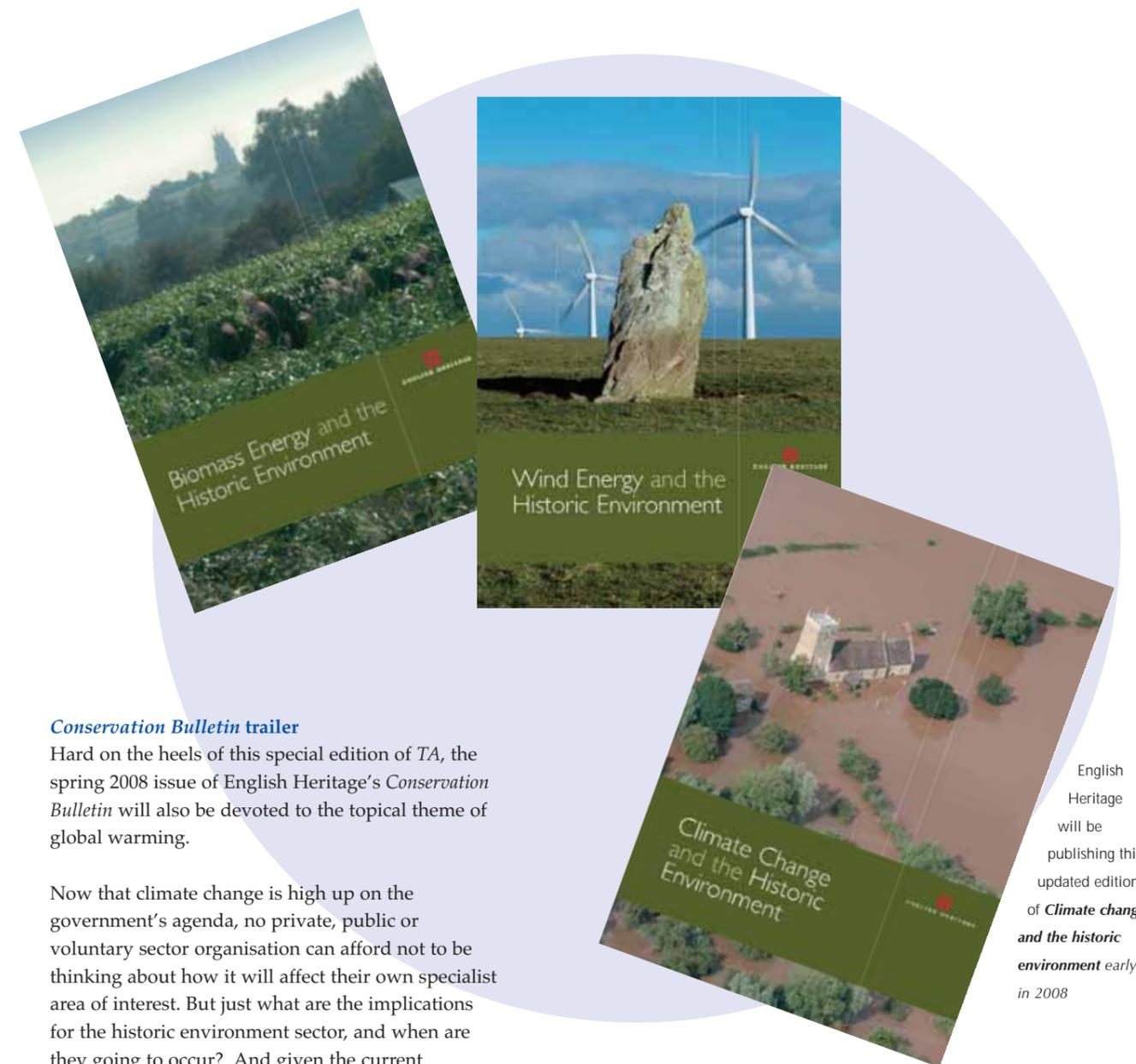
Climate change and HELM

The current edition of *Climate change and the historic environment* and other relevant English Heritage guidance can be accessed at the *Historic Environment – Local Management* website:

www.helm.org.uk/climatechange. Other useful documents that can be downloaded (or obtained as free hard copies from English Heritage's Customer Services department) include

- English Heritage 2002: *Building regulations and historic buildings*
- English Heritage 2003: *Coastal defence and the historic environment: English Heritage Guidance*
- English Heritage 2004: *Flooding and historic buildings: technical advice note*
- English Heritage 2005: *Wind energy and the historic environment*
- UCL Centre for Sustainable Heritage 2005: *Climate change and the historic environment*
- English Heritage 2006: *Climate change and the historic environment*
- English Heritage 2007: *Biomass energy and the historic environment*

Over the coming months, further advice and links will be added, in particular on micro-renewable energy generation. In addition, English Heritage is developing a separate website intended to provide detailed advice to householders on adapting their historic properties to climate change. It is intended that this will be launched early in 2008 and will be continually developed thereafter.



Conservation Bulletin trailer

Hard on the heels of this special edition of *TA*, the spring 2008 issue of English Heritage's *Conservation Bulletin* will also be devoted to the topical theme of global warming.

Now that climate change is high up on the government's agenda, no private, public or voluntary sector organisation can afford not to be thinking about how it will affect their own specialist area of interest. But just what are the implications for the historic environment sector, and when are they going to occur? And given the current scenarios and governmental responses to them, what kinds of adaptation and mitigation strategies should we putting in place?

The aim of the issue will be to provide an authoritative overview of the likely impacts of climate change and climate-change-led government policy on the main facets of the historic environment – conserved heritage buildings, housing and commercial buildings still in everyday economic use, historic parks and gardens, buried archaeological remains, traditional rural landscapes, the coastal and maritime zone.

For each, the aim will be to confirm what is known about the direct and indirect impacts (already experienced and/or anticipated); what we don't yet know (but need to find out more about), and what people are already doing (or planning to do) by way of mitigation and adaptation.

For those who are not already on the subscription list, *Conservation Bulletin* is published three times a year by English Heritage and circulated free of charge to 15,000 conservation specialists, opinion-formers and decision-makers. If you would like to be added to the mailing list call 020 7973 3253 or email mailinglist@english-heritage.org.uk. Current and past issues of the bulletin can also be downloaded from www.english-heritage.org.uk/conservationbulletin.

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English Heritage will be publishing this updated edition of *Climate change and the historic environment* early in 2008



Wind throw has damaged a turf-covered cairn, in Grong municipality. The frequency of wind throws is thought to increase in the future, thus future damage to sites/monuments must be expected. Photograph: May-Liss Bøe Sollund

Preserving **NORWAY'S** cultural heritage in a changing climate

Thomas Risan

Extensive climate changes in the near future will affect our cultural heritage, from monuments and sites, through cultural environments, to the entire landscape. The *CLIMATE: Adapting to extreme weather changes in the municipalities* project was initiated in 2006 with participants from seven environmental institutes in Norway. This project covers a broad field of issues, amongst them extreme weather and cultural heritage. The Norwegian Institute for Cultural Heritage Research (NIKU) is responsible for cultural heritage issues in this research project, which will conclude in 2011.

Challenges for the municipalities

RegClim data suggest that the municipalities could face

- increases in mean annual temperature between 2.5 and 3°C
- increases in thaw / frost cycles
- increases in precipitation of between 5 and 20%, mostly in the autumn
- drier summers in southern and eastern Norway
- more frequent extreme precipitation, especially in western Norway
- minor increases in day wind speeds

The municipalities have an obligation to perform *Risk and vulnerability analyses*. However, 64% of

Norwegian municipalities lack such analyses related to area planning, although 67% have performed some form of risk and vulnerability analysis during the past four years.

Consequences for the cultural heritage

We urgently need to look at

- the consequences for cultural environments and heritage sites
- actions that could hinder or decelerate the effects of climate changes, and other preventive measures
- contingency plans
- which types of areas in a given municipality are exposed to what kind of threat

Control inventories in Grong municipality in Trøndelag have shown an increase in damage to monuments caused by weather incidents in 1999-2005 compared with 1972-1999. 'Natural' damage was caused by flooding, windfall and erosion. Significantly, all climate change scenarios now describe an increase in extreme weather occurrences.

Floods

Changes in the soil conditions caused by increased floods and flash floods may affect the preservation conditions of archaeological sites. Areas threatened by damage/loss of sites/monuments should be defined spatially by GIS analyses. This can be done by analyses of slopes, soil type and drainage and

with the use of flood-maps (available from the Norwegian Water Resources and Energy Directorate). Areas vulnerable to erosion must be included.

Wind

The increase in strong winds is thought to be minor, but could still cause damage. More precipitation will increase the effect of wind forces in trees with a heavier canopy, paired with wind, leading to more wind throws. Forestry 'best practice' may be able to reduce damage to the cultural heritage, and maps with wind-exposed forests containing monuments/sites must be made.

Precipitation and mean temperature

Higher temperatures will lead to thawing of eternal snow and glaciers, exposing artefacts previously locked in a permanent frozen state in the Norwegian mountains. Plans for how these objects and finds should be registered and secured must be developed, based on a model from an ongoing research project 'Kulturminner og løsfunn ved breer og snøfonner i høyfjellet'.

Increased thaw/frost-cycles

Damage to rock art sites will increase with frost/thaw-cycles. Such damage must also be expected in other cultural heritage sites. Preventive risk and vulnerability analyses and contingency plans therefore need to be undertaken as soon as possible.

At the same time, measures taken to secure human life, infrastructure, drainage or drinking water may lead to secondary effects on cultural heritage. Thus it is important that area analyses and planning for the municipality incorporates monuments and cultural environments in contingency planning.

CLIMATE: Adapting to extreme weather changes in the municipalities aims to make a 'pilot manual' for the municipalities of Norway, to prepare for the expected changes.



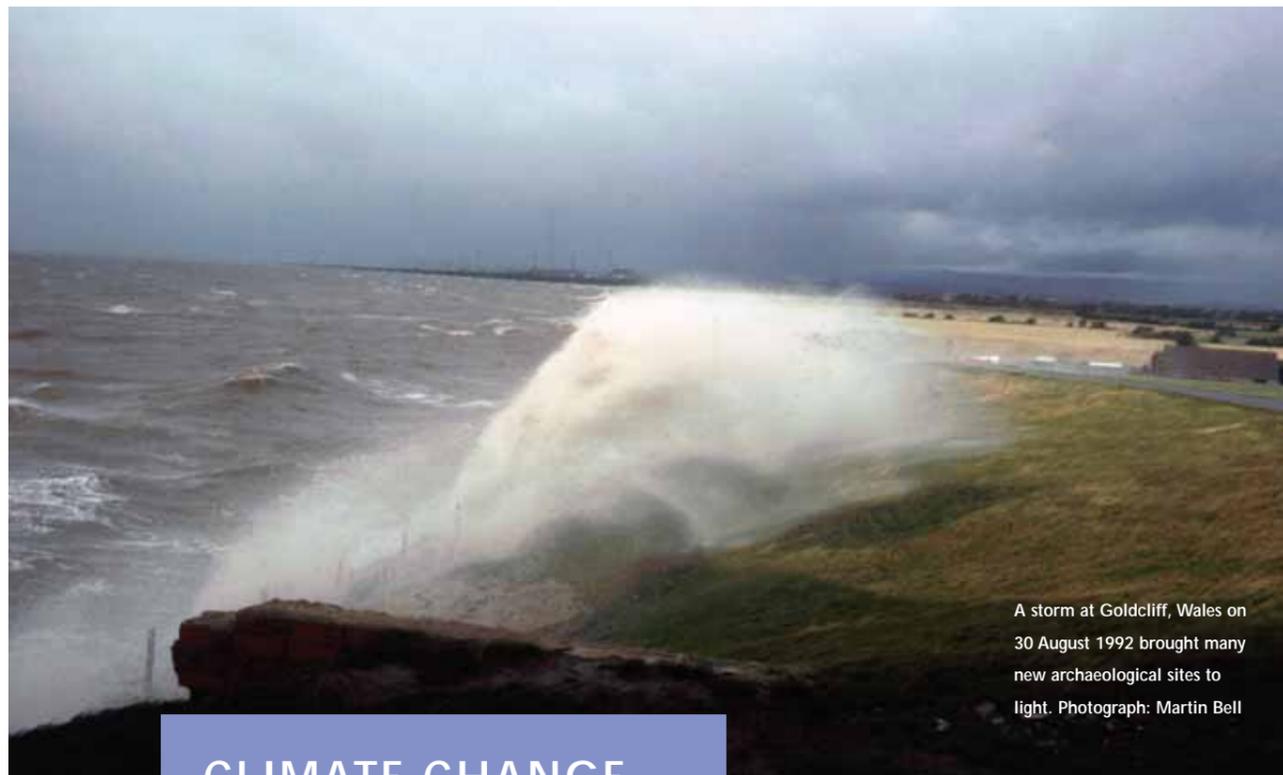
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Rock painting under an overhang, with damage that probably stems from frost action and weathering, in Sandnes municipality. Photograph: Thomas Risan

A house is rocking gently down the stream, Lauvsneselva in Flatanger municipality, Norway, illustrating problems with both flood and erosion. Photograph: Ole Martin Dahle

Half a grave mound remains after heavy erosion has toppled the other half down a brink, in Grong municipality. Photograph: May-Liss Bøe Sollund



A storm at Goldcliff, Wales on 30 August 1992 brought many new archaeological sites to light. Photograph: Martin Bell

CLIMATE CHANGE AND COASTAL ARCHAEOLOGY: ADAPTING TO CHANGE

Martin Bell

Coastal environments are favoured locations for settlement, yet the settlers are more affected by climate change than most inland communities. They are faced with the consequences of long-term sea-level

rise and transgression phases when marine influence extends further inland, or regressions when marine influence retreats seaward and peats form over marine sediments. The factors driving these changes are several. Global ice budgets and temperature affect the volume of water in the oceans, while episodes of increased wave activity and storms lead to inundations. Sea-level rise and transgression phases are generally manifest as storm and flood events, dangerous and frightening for communities. People lived with such perturbation because of the rich resources and often favourable climate of the coastal zone and, perhaps, because of the allure of communication with exotic other worlds.

SAND DUNE INUNDATION

Coastal dunes present one example of the effect of climate change on past communities. In dunes phases of sand deposition are interrupted by stabilisation phases, when soils form. Sand deposition is associated with strong onshore winds and a wider foreshore that is exposed to wind erosion at low tide. One period which fits this model is the Little Ice Age (AD 1550 to 1850), when dune mobilisation, right up the Atlantic coast of

Europe, inundated churches and medieval villages. One example is the church of St Piran, Cornwall, recently excavated from beneath its dune cover.

ADAPTING TO DYNAMIC ENVIRONMENTS

The archaeological record in areas of coastal wetland, such as the Severn Estuary, shows that past communities had ways of life adapted to these dynamic environments. Occupation was often seasonal and the wetlands were used for specific activities: grazing, fishing, salt extraction, trade, communication etc. Today, as low-lying coastal wetlands have been reclaimed by drainage and sea walls, permanent settlement is possible but the resulting communities become more vulnerable to the effects of extreme flood events.

RISING SEA LEVELS

During the 20th century tide-gauge data show that global sea level has risen by between 1 and 2mm per year, thus 100-200mm for the century, with an accelerating rate of rise. This is a consequence of global warming leading to the thermal expansion of seawater, the reduction of glaciers and ice caps and wastage of Greenland and Antarctic ice. A recent dramatic manifestation of ice reduction has been the North West Passage between Canada and the Arctic which defeated 19th-century explorers such as Franklin but which this summer has been more ice free and open later in the year than ever recorded, leading to talk of a new shipping route through this environmentally sensitive area. The Intergovernmental Panel on Climate Change predicts that sea level is likely to rise by about 0.5m in the next century, the rate depending on how successful governments are in reducing the emissions which lead to global warming. The tardy response of the world's biggest energy user, the USA, and the dramatic acceleration of industrialisation in China make it clear that we will be in the upper range of estimated sea-level rises.

NEW SITES REVEALED

We are also seeing increasing incidence of extreme weather events such as storms, floods and droughts, as recent events illustrate. Many archaeological sites in the intertidal zone are obscured by mud or sand until a storm sweeps the covering sediment away, revealing buildings, trackways, human and animal footprints etc. A single storm in the Severn Estuary on 30 August 1992 for example led to a huge increase of known archaeological sites at Goldcliff in South Wales, with three wooden buildings, many trackways and the planks of a Bronze Age boat revealed. More recently, Mesolithic human footprints have been discovered undergoing active erosion by

Sand dunes with soil horizons and midden traces, Constantine Bay, Cornwall. Photograph: Martin Bell



the sea. Archaeologists must be alert to such opportunities, for sites can be destroyed as fast as they are uncovered.

Sea-level rise and increased storminess also lead to coastal erosion. During visits this summer to sand dune sites in South West England many archaeological sites were discovered exposed in cliff sections and undergoing erosion. Such natural sections through buried soils, field systems and settlements represent a considerable archaeological and palaeoenvironmental resource.

'MANAGED REALIGNMENT'

Some sites subject to erosion will, for reasons of property value etc, be protected by sea walls, construction of which can impact on archaeological stratigraphy and requires careful assessment and monitoring. Other areas will be allowed to continue eroding. As shoreline erosion increases, so many environments of the high shore, mudflats and saltmarshes are becoming subject to 'coastal squeeze', the area between an eroding face to seaward and the fixed barrier of sea walls becoming ever smaller. Habitats of nature conservation importance are thereby dramatically reduced. Governments respond to this challenge by setting targets to increase the areas of ecologically important habitats as part of sustainability policies. In the case of saltmarshes the only way to do this is to abandon some sea defences and allow the formation of new saltmarshes in former agricultural land. This 'managed realignment' makes good sense, not only in terms of nature conservation, but



Mesolithic human footprints at Goldcliff Wales are being rapidly eroded. Photograph: Martin Bell

Porlock, Somerset illustrates. Here it was decided no longer to enhance a natural shingle barrier with regular bulldozing but to allow erosion to take its course. Rapidly the barrier was breached, an extensive new saltmarsh formed over what had been agricultural land and as the water regularly drained from the saltmarsh on a falling tide it cut a dramatic gully through the Holocene sediment sequence in the breach. These sediments contained Mesolithic flints, a submerged forest and fish traps, though none, thankfully, at the spot the breach occurred. The dramatic nature of this Porlock erosion explains this writer's extreme nervousness over proposals for a managed realignment scheme on the Gwent Levels in South Wales, the area of major Mesolithic to Romano-British intertidal archaeology. The huge tidal range of the Severn Estuary (14.8m) means that a gully cut by the retreating tide could trigger catastrophic erosion of sediments rich in archaeology.

also in the context of the dramatically accelerating costs of sea defence against sea-level rise driven by global warming.

MESOLITHIC EXPOSURES

Thus, in the context of future shoreline management plans, unpopular decisions are being made to abandon some sea defences and concentrate resources on upgrading others. This autumn plans have been announced to create a vast new wetland reserve in Essex by managed realignment. Such schemes increase areas designated for conservation, but they have consequences for archaeology as

Past communities flourished by adapting to the challenges of a dynamic coastal zone. How adaptable will archaeologists be to the challenges of global warming? We will need to develop particular expertise in coastal environments and the distinctive forms of archaeological evidence they contain. The situation also demands integrated conservation strategies which balance heritage and nature conservation issues.

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St Piran's church Cornwall, threatened by coastal sand dunes since 1281 but finally engulfed and abandoned in 1804. It has recently been partially excavated in now stabilised dunes. Photograph: Martin Bell

The eroding sites on Scotland's coast

Tom Dawson

Global warming is now accepted as a reality, with the 2007 report of the Intergovernmental Panel on Climate Change (IPCC) noting that wide-ranging impacts have been observed in Europe, consistent with predictions made in their first report in 1990. Eleven of the last twelve years (1995-2006) rank among the twelve warmest years since records of global surface temperature began in 1850 (IPCC, 2007a, p5).



Unst Archaeology Group helping to reconstruct Pictish structures

The report predicts that sea levels will continue to rise and that episodes of stormy weather will increase in northern Europe. Surges of wind-driven waves will hit the coast with greater intensity and frequency. Some of the more sheltered or geologically hard parts of Britain's coast will be able to withstand such climatic conditions, but areas of soft sediment will be vulnerable.

Sites at risk

Scotland has an enormous coastline, divided between the mainland and over 130 inhabited islands. It is estimated to be second longest coast in Europe, over 15,000 km. Much of this is soft coastline, with numerous sandy beaches and the machair plains, areas of fertile organic sand that have been a focus of settlement for millennia. It is rich in archaeological sites, with many outstanding monuments perilously close to the coast edge. Sites

at risk cover all periods and a range of types. Famous examples include the Neolithic village of Skara Brae, Orkney and the prehistoric, Norse and medieval settlements at Jarlshof, Shetland, both exposed during past storms. There are also brochs, burial sites, chapels, industrial remains and second world war structures, many sitting at the coast in good states of preservation but threatened by the sea. Excavations in advance of coastal erosion have been an established feature of Scottish archaeology for many years, and each year brings forward more contenders.

To quantify risk to the historic environment, Historic Scotland has commissioned a series of Coastal Zone Assessment Surveys (see TA 63), managed, since 2001, by the SCAPE Trust. Copies of all reports can be found on the publications page of SCAPE's



The community excavation at eroding Iron Age structures on the beach at Baile Sear, North Uist

website (www.scapetrust.org). These surveys have covered over 4600 km of the most vulnerable parts of the Scottish coast, and almost 11,500 sites have been recorded. Survey guidelines require that a brief recommendation is given stating whether further work is needed, and over 3500 (30%) were noted as needing monitoring, surveying or excavation.

Nature's course

These surveys, and climate change predictions, don't suggest that things will improve. Even when it is technically possible to build protective coastal defences, these can be costly to maintain and may simply deflect the power of the sea elsewhere.

Coastal managers are increasingly deciding to allow nature to take its course, meaning that most archaeological sites will be lost.

Although it is easy to view the threat to coastal archaeology pessimistically, it is equally the case that some of these high quality sites are presenting an opportunity. If building a coastal defence is not an option, then questions of *preservation in situ* do not arise with many sites; we either use them or lose them. Such sites should be seen as providing archaeologists with a chance to answer research questions whilst allowing similar, unthreatened sites to remain undisturbed. They can also provide an ideal focus for engagement with local communities.

Community value

Data are being analysed and sites will be prioritised using a range of criteria, to ensure that resources are spent where they will do most good. Some sites are already being investigated, including several community-oriented excavations, managed by SCAPE as part of their award-winning Shorewatch project. With support from Historic Scotland, the Heritage Lottery Fund and other partners, excavations are being undertaken by local groups working alongside professional archaeologists. Community or public value should have an important role when prioritising action, and these eroding sites were selected by the local groups because of the value that they placed on the remains.

Pictish structure

In 2007, three community excavations took place on the north, east and west coasts of Scotland. In Shetland, Unst Archaeology Group, working with archaeologists from GUARD, finished uncovering a Pictish structure on the coast at Sandwick. The group then teamed up with the Council for Scottish Archaeology's Adopt-a-Monument scheme (www.scottisharchaeology.org.uk/project/adopt.html) to consolidate some of the excavated structures and to rebuild others for display. As erosion is an ever-present reality, they wanted the reconstruction made on the same spot as the original site, and they will chart its inevitable destruction. They will also make educational use of this gradual process, teaching visitors about the site, the destruction it faces and coastal erosion in general, using an interpretive panel, local display and leaflet.

Burnt mound

A slightly different collaborative project is currently being planned on another Shetland island next year. A group on Bressay wishes to excavate an eroding

burnt mound containing stone cells and an inclined passageway leading to a tank. Once recorded, they will transport the numbered stones to their Heritage Centre, where the structures will be rebuilt and will act as an educational resource for experimental archaeology and a valuable tourist attraction.

Iron Age wheelhouse

On the island of Baile Sear, North Uist, the Access Archaeology Group has been uncovering remains of an Iron Age wheelhouse and cellular structure which were exposed on the beach after the hurricane-force winds of January 2005. Since being uncovered in the storm, the remains have been eroding rapidly, and the beach has retreated by five metres. The excavation attracted numerous participants and visitors who were keen to see action taken at a site that would otherwise have been washed away.

Industrial salt production

The village of Brora, north of Inverness, was home to the most northerly coal mine in Britain. Coal was used to heat sea water to produce salt, with industrial production starting by at least 1598. The Clyne Heritage Society has been monitoring structures eroding from the dunes for several years, and working with professional organisations, including CFA Archaeology, had surveyed these remains. The excavation revealed several well-

preserved buildings buried in the sand, including a possible salt pan complete with hearths.

Training

These three projects have rescued valuable information whilst giving local group members the opportunity to participate and receive training in archaeological techniques. All have received strong support from the local community, and open days and site visits have been well attended. Interpretative material has been prepared for display either in the local heritage centres or on-site. Findings from the Unst excavation have been disseminated on the Shorewatch website and pages are currently being designed for the Brora and Baile Sear digs (www.shorewatch.co.uk).

Coastal erosion will continue to destroy archaeological sites, and archaeologists have to turn this into an opportunity. With appropriate support something can, and will, be done at some of the valuable sites most at risk. Resources will continue to present a problem, but public involvement is already unlocking resources where traditional rescue archaeology has failed. Longer term, increased public engagement and commitment will, we hope, impact on national funding levels.

Tom Dawson

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Remains of the salt pans under excavation by the Clyne Heritage Group at Brora, Sutherland. Here, remains of the Saltman's House are being excavated. Photograph: Nick Lindsay



The prehistoric settlement and Romano-British shrine on Nornour, one of the sites threatened by coastal erosion. © Cornwall County Council



Fieldwork on Par Beach, St Martin's, September 2005.

Drowned landscapes past and future: the Isles of Scilly

Charles Johns and Jacqui Mulville

An archipelago of approximately 200 islands, islets and rocks situated 45km (28 miles) south-west of Lands End, the Isles of Scilly have a unique environment where the relationship between land and sea provides a distinctive cultural identity. The archipelago contains wide expanses of shallow sub-tidal and intertidal environments flooded by rising relative sea levels during the late Holocene. It has long been known that the islands in their current form are a result of past sea rises that flooded early sites. It is therefore a valuable microcosm for studying continuous sea level rises within an historical context as well as for research and record of important sites that will be lost and how past populations adapted to their shifting shores.

Making islands

Some 10,000 years ago, towards the end of the Last Glaciation, the melting ice cap led to a significant rise in sea level which separated Scilly from what is now mainland Cornwall. Initially Scilly comprised one island roughly 16 km long and 8 km wide; by 3000 BC the rising waters had created the islands of St Agnes, Annet and the Western Rocks, while other modern islands were encompassed within one larger island, later known as *Ennor*, 'The Land'.

Dating change

There are currently two models for sea level change in Scilly. The first, published by Charles Thomas in 1985, suggests this island existed until about the 5th century AD and would have continued to form a visible single entity at low tide until the 11th century, the final separation perhaps not occurring until the early 16th century. In the absence of radiocarbon dates, Thomas calculated the rate of sea level rise by plotting the vertical position of intertidal stone remains which could be broadly dated from artefacts and analogy with sites elsewhere. Place-name evidence was also used for the medieval period and later.

The second model results from analysis of radiocarbon dates and corresponding levels from intertidal peat deposits sampled over a five-year period between 1989 and 1993 by the Cornwall Archaeological Unit (now Cornwall County Council's Historic Environment Service - HES), in conjunction with the AM Lab and Bristol University, with funding from English Heritage. This indicates a less dramatic rate of sea-level rise, and GIS modelling suggests that the islands could have been separated at high water from around 1000 BC. The process of inundation is ongoing; the latest prediction provided by the Environment Agency suggests a rise of 0.57m by 2050.

Islands in a Common Sea

In 2004 HES compiled a Rapid Coastal Zone Assessment Survey of the Islands for English Heritage and since 2005 have worked in partnership with Cardiff University's School of History and Archaeology (HISAR) on the *Islands in a Common Sea* project which considers a range of archaeological issues in Scilly, including erosion of coastal sites, with particular reference to the Cornish mainland and other Atlantic maritime communities. The project is reassessing the results of previous investigations, defining new areas for research and undertaking targeted fieldwork and laboratory analysis.

Lyonesse

English Heritage has recently commissioned HES to

prepare a project design for further investigation of the evolution of Scilly during the Holocene – the *Lyonesse Project*. The proposed 3-year project will draw on an unusually wide spectrum of expertise: palaeotidal modelling, marine geophysics, Holocene geology and palaeoecology, archaeology, and history. It will be inclusive, involving the local community, divers and maritime archaeological societies.

Sea level change and predictive modelling

The aim of the project will be to reconstruct the evolution of the physical environment of Scilly during the Holocene, the progressive occupation of this changing coastal landscape by early peoples, their response to both marine inundation and changing marine resource availability. Of particular importance nationally will be the collection and analysis of data that will increase knowledge of sea-level change during the past 12,000 years and enable predictive modelling of future sea-level rise in Scilly.

The project will involve the biostratigraphic analysis of coastal, intertidal and submerged sediments at selected locations around Scilly and will develop a more refined methodology for use of geophysical techniques to identify and map intertidal and sub-tidal sediments and cultural remains.

Recommendations

An additional outcome will be recommendations for a minimum standard for preparation of characterisations and 'plans' of landscape-scale sites, monuments and palaeoenvironmental resources for potential designation or to inform offshore planning applications, to assist implementation of any new Heritage Protection legislation.

The main project partners will be HES; HISAR; University of Wales (Bangor), School of Ocean Sciences; Plymouth University, School of Geography; English Heritage and the Cornwall and Isles of Scilly Maritime Archaeological Society.

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Drowned in the Mesolithic: life beneath the Solent

Garry Momber

Archaeologists seeking to understand past climate change find some of their best evidence beneath the sea, where flooding has preserved traces of human activity and environmental data that would be desiccated on dry land. Such sites present the clearest evidence that sea levels can change radically in quite short periods, with catastrophic results for those who cannot quickly change their settlement patterns.

Incursions

Underwater work is currently in progress at Bouldnor Cliff in the western Solent, which was formed as sea levels rose during the Flandrian Transgression. It was once the location of a river valley that drained what is now part of the New Forest and the Isle of Wight. As sea water came into contact with run-off from the land, fine sediments dropped out of the water column to form mud flats which covered the landscape beneath, sealing and preserving the environment and archaeological remains therein. Now this estuarine valley is an

Excavated flints in front of lobster burrow



open seaway through which tides pass unhindered, an area of active erosion rather than deposition. The centre of the Solent has been scoured while infill deposits only remain on the more sheltered fringes.

Protection and erosion

As the sea continues to slice through the middle of the channel an underwater cliff off Bouldnor has been formed, rising from -12m to -4m OD, with vertical profiles and overhangs. It runs parallel to the coastline for just over a kilometre, off the north-west shores of the Isle of Wight. It survives within the shelter of a small bay where it is protected from the most aggressive currents, although erosion rates of 100 to 200mm per year suggest its long term future is unsustainable.

Coastal Change, Climate and Instability, a project led by David Tomalin to research Bouldnor Cliff with the aim of defining its relationship between sea-level fluctuations and the geomorphological evolution of the coast, revealed lenses of environmental data and how these had formed. The cliff comprises unconsolidated brackish alluvial silt with laterally consistent laminations of peat. Peat over this deposit forms a plateau in -4m of water; it outcrops at -5m and forms a 10 to 20m-wide platform at the foot of the cliff. The bases of these deposits were radiocarbon dated to 4525 – 4330 cal BC at -4.1m OD, 4920 – 4535 cal BC at -5.1m OD and 6615 – 6395 cal BC at -12m OD. The sequence tells of estuarine conditions subject to rising water levels in the order of 1m in 200 - 250 years. The sea level was seen to stop or regress at -5m and -4m OD, allowing plants to become established.

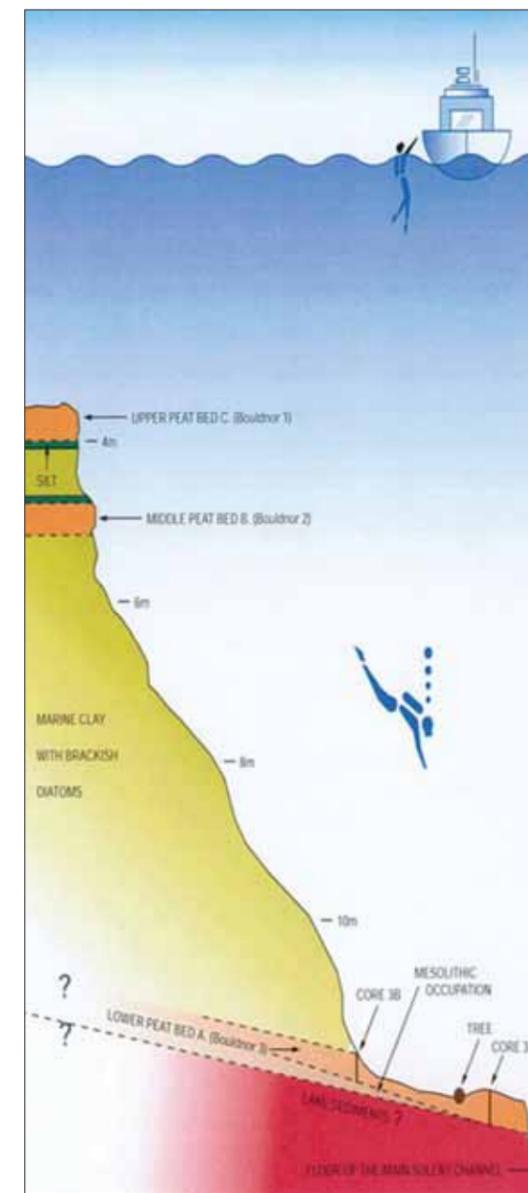
Location of Bouldnor Cliff, on the northern coast of Isle of Wight



Working in the Mesolithic forest

For the archaeologist the most intriguing layer was the large submerged forest associated with peat from the relic valley floor. Within this, lithics (cores, flakes and bladelets) were found in the upcast of a lobster burrow. In 2003 English Heritage funded a project to identify the potential of the site and analyse the relationship of the archaeology to the landscape. At the foot of the cliff was found an active fluvial system that had been subject to fresh water inundations before being overtaken by the sea. Gravel at the base of the section dated to 6090-5980 cal BC. Above this there was a sand bar, then a peat-covered gravel lens which in turn was covered

Section through the submerged Bouldnor Cliff



by the brackish alluvial silt. The top layer provided a date for sea level rise at -10.4m OD of 6000-5840 cal BC. Human activity was principally associated with the fresh water sand bar.

Ongoing survey has revealed several other sites including an area covered in burnt flint and charcoal found eroding from the peat platform. A steady loss of seabed and exposure of archaeological material has been monitored and, last summer, evaluation trenches funded by the Leverhulme Trust and the Royal Archaeological Institute revealed a broad distribution of burnt flint, wood chippings, carbonised wood fragments, worked wood and occasional flint tools.

Log boat manufacture

Boat-building is suggested to be a feature of this site. The flints had been repeatedly heated to a high temperature and appear to have been stored in pits before reuse, processes akin to those used when constructing logboats, and amongst the finds were a pointed stake, a large piece of round-wood with cut marks and a two overlapping timbers 300mm wide and over 1m long. These large pieces of timber have yet to be fully analysed but initial interpretation suggests the remains of a fixed structure or walkway placed on fashioned wood as support. It is clear we have a terrain that is embedded with significant Mesolithic archaeological material.

Submerged prehistoric landscape at risk

Erosion at Bouldnor Cliff is providing access to the submerged prehistoric landscape that will be short lived. To read the archaeology within it we need to understand the taphonomic context within which the artefacts were deposited, geomorphological processes that protected them as the land adapted to sea level change and the forces at play that are now removing it. The importance of the site cannot be overstated. We are not just dealing with habitation loci that hold nice artefacts but an arena of occupation that can cast light on a period of our past we know little about.

What we do know is that the window of opportunity will soon be shut as this ancient homeland is dissipated by the sea.

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SOME CLIMATE CHANGES OF THE PAST:

the value of tree-ring data

Mike Baillie

In Europe, oak tree-ring chronologies were not constructed with climate in mind. Their purpose was purely to date things. However, once long year-by-year tree-ring sequences were available it was obvious that they contained records of both long-term changes and short-term 'events'. These changes are not easily interpreted in terms of instrumental-style temperature and rainfall records, thus workers interested in reconstructing climate have chosen to ignore oak and look instead, with considerable success, to temperature-sensitive species such as high latitude or high altitude pines.

Global events

What no one was prepared for was the observation that there were some growth downturns that were visible in long tree-ring records all around the world. When tree-ring chronologies from Siberia, through Europe, to North and South America all show severely reduced growth at the same time – as they do around AD 540 – then the concept of a global environmental event raises its ugly head. It is safe to say that neither archaeologists nor historians were prepared for such a concept. Taking the 540 event as an example; it coincides alarmingly with the outbreak of the Justinian plague; the date sits in a period widely regarded as a 'Dark Age'; it is very close to the start of the 'Maya hiatus'; it is just when Justinian's push to re-establish the Roman empire went into reverse. To a palaeoecologist this package makes it look as if the 540 event was catastrophic in character; a global environmental catastrophe.

Environment and politics

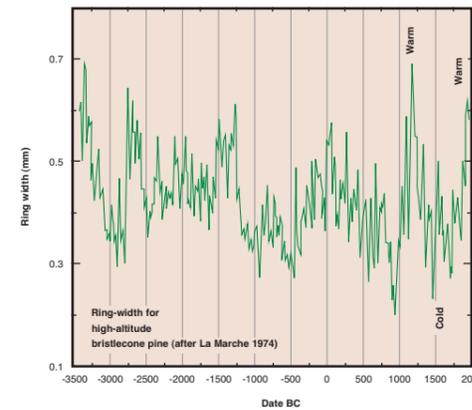
Archaeologically, AD 540 is quite recent; however there were other severe reduced-growth events in

the 12th century BC, the 24th century BC and around 3200 BC. It did not require a genius to recognise that those were no arbitrary dates. The start of the Greek Dark Age is around 1150 BC; in the British Isles, the end of the Neolithic is around 2350 BC, while the Mid-Neolithic transition is around 3200 BC. There are two ways to look at such observations: either we are looking at a series of coincidences or the severe environmental downturns indicated by reduced tree-growth were involved in these archaeological transitions.

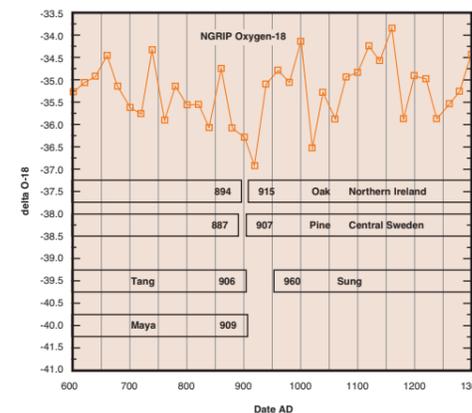
Such thinking opens up interesting possibilities. Early agricultural societies were at the mercy of any severe climate events that lasted for more than two or three years; it would be reasonable to state that, in prehistoric times, more than three consecutive failed harvests would have dumped populations back into a Mesolithic lifestyle. So, consideration of such extreme issues raises the prospect that tree-ring chronologies do indeed contain highly relevant information that is fundamentally climatic in character.

Precise dating and extreme events

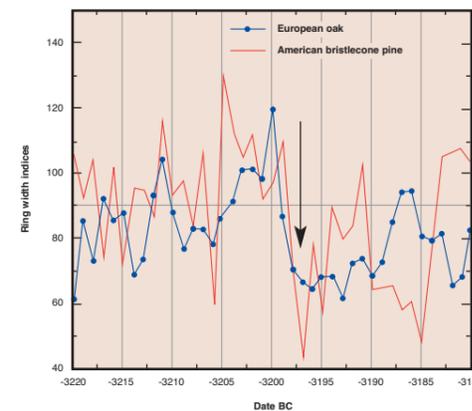
Tree-rings provide other insights. Between AD 880 and 910 Irish and English oak chronologies – which are normally similar – suddenly show opposite responses. English oak remained similar to continental chronologies, thus it was Irish oak that was behaving differently; some aspect of local climate had changed. Looking more widely the end of this same thirty-year period saw the collapse of the Chinese Tang Dynasty and the end of the Mayan civilisation in America. Such insights, and there are numerous other examples, effectively paint a backdrop for understanding the archaeological record; we should expect to see archaeological effects between 880-910 in the same way that we should expect to see effects around AD



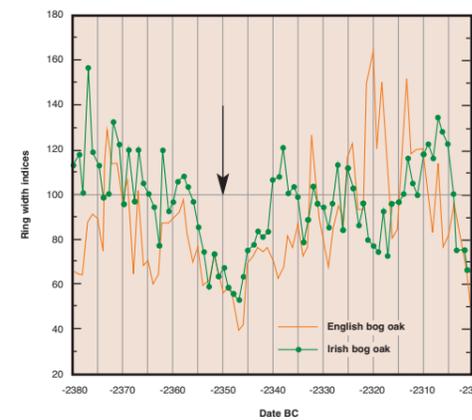
Bristlecone pine ring widths are suggested to be a good proxy of temperature. Note the clear occurrence of the Medieval Warm Period and the Little Ice Age. It has to be assumed that the remainder of LaMarche's record is also a valid reflection of global temperature. Data smoothed from LaMarche 1974



Building up a picture of a past environmental event. Gaps in local tree-ring chronologies coincide with reduced temperature from Greenland ice (data courtesy of JP Steffensen), and with collapses of dynasties in China and America



Synchronous abrupt growth reduction in European and American trees in the 3190s BC indicating a wide-scale climatic event that could have affected early agricultural societies



The decade-long growth reduction in English and Irish bog oaks across 2350 BC

Graphs shown here have been reproduced for illustrative purposes only.

540 or 1150 BC. The widespread availability of precisely-dated tree-ring chronologies now allows their interrogation for extreme events, and for similar and dissimilar responses.

Much of the information at this stage is qualitative – 'bad' or 'different' or 'good' or 'similar' – rather than quantifiable in degrees centigrade or centimetres of rainfall – however, the power of the tree-ring information lies in its precise dating, which allows comparison with ice-core records and historical sources. Thus, when oxygen isotope records from Greenland show severe cooling around AD 910 a whole 880-910 'package' starts to take shape.

Black Death context

In similar ways, the observation of a less severe but global tree-ring downturn in the AD 1340s demonstrates that the Black Death had an environmental context. It is now known that 1349-1353 is another severe temperature anomaly in the ice records in Greenland. Archaeologists can now look forward to a developing 'climatic' backdrop for much of the last six millennia against which to fit their archaeological findings – if they can date them, of course. That said, back in 1974 Valmore LaMarche published a multi-millennial record of bristlecone pine ring widths from the White Mountains of California. Because these pines grew at altitudes over 3000m LaMarche reasoned that their ring patterns would be a good reflection of global summer temperature. His curve is still one of the best estimates of climate change for the last 5000 years and a copy of it should be on every archaeologist's wall.

A wider lesson is that extreme and sudden climate changes *do* occur, and not infrequently. When they do, environmental impacts have an immediate and often disastrous effect on human behaviour. Archaeologists are in a unique position to explain what such impacts have been, and so what might be again.

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Baillie MGL 2006 *New light on the Black Death: the cosmic connection*. Tempus, Stroud

LaMarche VCJ 1974 Palaeoclimatic inferences from long tree-ring records, *Science*, 183, 1043-8

Insects: sensitive indicators of climate change

Harry Kenward

The value of insects in tracking past ecology and climate change has become increasingly appreciated over the past few decades. Insects often have strict habitat requirements for survival, and many can fly, so they invade new areas quickly, much faster than plants, when conditions become suitable (as gardeners battling with lily beetle for example will know to their cost). For these reasons, and because beetles in particular are well-studied and preserved in quite large numbers in suitable anoxic waterlogged deposits, they are enormously useful in reconstructing aspects of the natural and human past.

The changing range of the nettle bug in Britain from the Roman period on. Artwork: Chris Evans

■ Rapid thaw

Beetles were critical in finding out just how quickly climate can change. It was work by Russell Coope at Birmingham that first showed that warming at the end of the Last Glaciation was very fast, with the

transition from a glacial regime to temperatures above those of the mid-20th century in Britain happening in a human lifetime at most (subsequent work hints that it may have taken only a few years). Other work has reflected the early Holocene optimum, when temperatures were a few degrees above those of the mid-20th century (we have to say mid-20th century rather than 'today' because climate is changing so rapidly, almost certainly as a result of our pollution. The analogy with the 1950 radiocarbon standard, necessitated by human contamination of the atmosphere with radioisotopes, is hard to miss.)

■ Temperatures in prehistory

The archaeological community is increasingly aware of the potential of biological remains for reconstructing human activity and living conditions, with insects an important part of the mix. Insects from essentially natural prehistoric deposits at archaeological sites such as the Somerset Levels have also been used for climate data, generally with conclusions that temperatures closely resembled those of the mid-20th century. There are hints of higher temperatures in the earlier parts of our interglacial, though ecological change, especially loss of forest and wetland, may have subsequently restricted or driven out insects, rather than climate change.

■ Urban bugs

People have assumed insects from urban sites were less reliable in reconstructing climate than those from natural deposits, because towns offer a protected environment and have probably always created 'urban heat islands', as they do today. This is probably true for species primarily associated with artificial habitats – grain and other storage pests, house insects, denizens of stables, and so on.

But some insects living in towns probably do carry a climate signal, for example distributions of beetles and bugs which lived on weeds in past towns can be meaningfully compared with those in modern contexts.

■ Warmth in York

Analysis of this kind has barely been started, but a few insects from urban archaeological sites hint at past climate change. The most notable is the nettle bug, *Heterogaster urticae*, a true 'half-wing' bug found almost entirely on stinging nettles. It also illustrates the difficulties of working on past climates in the changing world of today. In the 1950s, and through to the 1980s, the nettle bug was effectively restricted to the south-eastern and southern part of England. Yet it was repeatedly found in archaeological deposits in Northern England dating to the Roman and medieval periods, especially the Anglo-Scandinavian of York, suggesting appreciably higher temperatures. That there had been Roman and medieval warm periods was already generally appreciated, but the nettle bug hints at higher temperatures at other times.

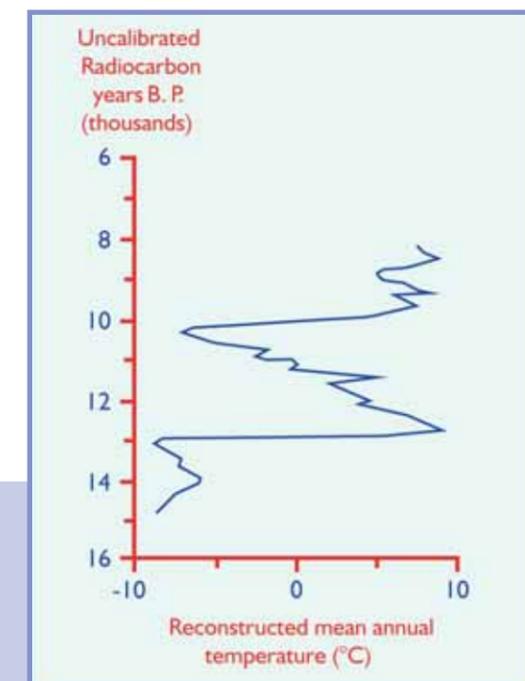
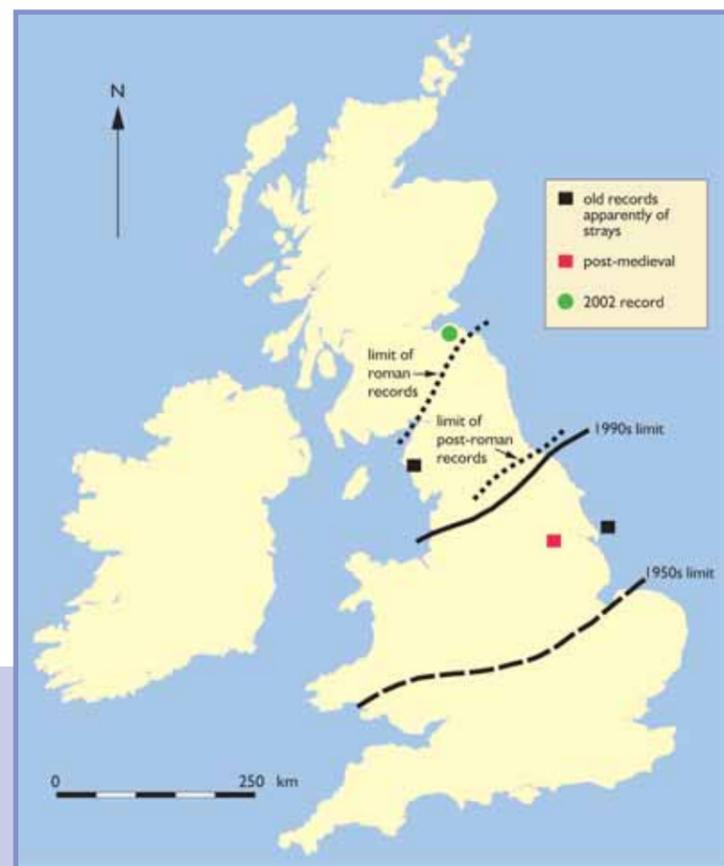
This nettle bug story has a twist which is all too relevant to modern concerns over global warming. Temperatures are undoubtedly on an upward trend, reflected in Britain in the northward movement of a whole range of insects including beetles, bugs, butterflies, moths and dragonflies. One of them is the nettle bug, which in the 1990s became very common again in Yorkshire after a gap of perhaps four centuries, and which has even reached Scotland.

■ Holocene picture needed

While there has been an immense amount of work on climatic reconstruction from insects in ice age

and interglacial natural deposits, comparatively little has been done on Holocene ones. This is a shame, because insects are probably one of the best sources of information about subtle climate change, as well as the environmental changes wrought by human activity. If we could just study more deposits dating over the past 10,000 years, and a large number of sites would eventually be needed, we could probably build up a picture as impressive as that for the Late Glacial. We are seeing massive change in insect fauna now, as species move north and new ones arrive in Britain from the continental mainland: but is this a significant pointer to potentially disastrous change, or just a part of a process that has always happened, with or without humans?

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Rapid temperature changes at the end of the last glaciation, based on insect remains. Data from Lowe and Walker 1997. Artwork: Chris Evans

CHRONOLOGICAL TOOLS FOR STUDYING HUMAN INTERACTION WITH PAST ABRUPT CLIMATE CHANGE

Simon Blockley, Christine Lane, Anna Oh

The influence of environmental change on humans has long been debated in archaeology, and in recent years researchers have been asking questions relating to very abrupt events. The Greenland ice core records, for example, have provided a valuable insight into the rapidity of past environmental change, documenting key transitions between extremes of cold and warm that could occur within a couple of decades. It is important to understand the mechanisms behind these climate changes, to predict future change, and to be able to use the record of the past as a test bed for models of the future. These climatic events are also the environmental backdrop for the later evolution and

adaptation of our species. It seems likely, for example, that Britain, along with Northern Europe, was subject to periods of pronounced population expansion and contraction during periods of climatic upheaval. Difficulties with very high precision dating, however, mean that we are not sure of the precise relationship between different records of climate change in the past, nor the evidence for human responses. Dating the events that occurred many thousands of years ago, to a precision of a couple of decades, is a tall order.

VOLCANIC ASH

These problems apply to many fields based on understanding past climate change, and one dating tool that is being widely adopted to help is tephrochronology. This technique is the use of volcanic ash (tephra) layers as a dating and correlation tool. In many cases explosive volcanoes can deposit ash layers thousands of kilometres from the source volcano. Often these layers are invisible to the naked eye meaning sediments have to be extensively tested for tephra. In many cases these tephra layers can be chemically correlated back to individual eruptions and dated using a variety of methods. The power of the technique rests on this dual potential: not only can a tephra layer provide a date for a site, but it can stratigraphically link numerous records, providing a framework for underpinning other chronologies.

GREENLAND TO MOROCCO

The Research Laboratory for Archaeology in Oxford is one of several research groups now actively searching lake and peat bog sites within Europe, as well as marine archives from the Mediterranean and Atlantic. We work with many collaborating laboratories, most notably the Centre for Quaternary Research at Royal Holloway. A recent highlight is evidence we have found tracing the Icelandic Vedde Ash much further south into Europe than previously thought, at least as far as the Swiss Alps, working on cores provided by colleagues from the University of Utrecht. This tephra is found in marine cores in the north Atlantic, in the Greenland ice cores and in numerous Atlantic seaboard terrestrial records. This widespread marker horizon is well dated in the Greenland ice core record to around 12,000 BP. In theory it is now possible to directly correlate records from the Greenland ice cores across the whole of the north Atlantic seaboard and as far south as Switzerland. Outside Europe we are testing the potential of this and other approaches for the Palaeolithic archaeology of North Africa, collaborating with Nick Barton in Oxford and Abdeljalil Bouzouggar, from INSAP, Morocco, who are working on important Palaeolithic sites in Morocco.

TRACING TEPHRA

Key questions we are testing include: what are the extents of tephra presence in Europe and around the

Mediterranean, and how well can we reliably date and correlate the tephras we find? Pleasantly the answer to both these questions lies partly in extensive fieldwork in amazing locations. We are examining as many suitable sites as possible over the next few years, focusing largely on environmental sites and Palaeolithic records. We are also testing methods for improving the correlations between tephras by sampling proximal deposits of ash and then tracing them further away from the source.

Over the next few years we have the opportunity to develop these methods and to test the applications to archaeology, supported by the Natural Environments Research Council on a large collaborative project, RESET (<http://www.rlaha.ox.ac.uk/R/reset.php?group=R>). This project is a collaboration between four universities and will integrate tephrochronology and other dating methods, to test the role of environmental forcing on key questions such as the replacement of archaic hominid species (eg Neanderthals) by our own.

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View from a cave site in Morocco, from a site prospecting trip



Christine Lane sampling volcanic ash deposits in an archaeological site



Ash layers embedded in a peat unit in Iceland



Tephra sampling in a cave site in Morocco – part of the RESET project

Lentils as climatic indicators?

Chris Stevens

Lentils – a crop of a warmer Britain?



Lentils had long been established as a crop within many parts of the ancient world, but it was the Romans who first brought them to Britain, their charred remains having been recovered from sites such as Colchester, London, and the fortress of *Isca*, Caerleon.

Today, lentil cultivation is usually favoured in those parts of the world with warm summers and milder winters, such as the Mediterranean. That the lentil is less suited to cultivation within the English climate has led archaeobotanists to suggest that during the Roman occupation it was imported to Britain, apparently corroborated by the fact that it is rarely found outside more Romanised settlements.

But what of the increasing number of Saxon and later finds of lentil from rural sites in central,

eastern and southern England? Dating from the later Saxon period up to the 13th century, these finds suggests local cultivation.

This proposition raises an intriguing question of climate change. A period of climatic warming (the medieval warm period) is known to have occurred between c. 800/900 AD to 1350, peaking towards the end of the 10th century. *Domesday Book* contains numerous references to vineyards in southern England.

The finding of lentils on rural English sites during this period, followed by a general absence after 1300 which is generally regarded as the lead in to the 'Little Ice Age', suggests a clear association of the cultivation of this crop with a warming of the climate that was recognised by opportune Saxon and early medieval farmers.

Chris Stevens
Wessex Archaeology

Cumulative impacts from offshore renewable energy

Jill Hind

A major component of government strategy for reducing CO₂ emissions is a move to renewable energy sources. Wind, wave and tidal power will be vital. The first offshore projects are now operational, there are experimental wave power devices in Scotland, and consent has been given for another wave energy test facility off Cornwall (WaveHub). Licences have been granted for several more offshore wind farms in strategic locations, including the Thames estuary, the north Wales to Liverpool Bay area and the Greater Wash.

These generation plants, like all developments, present risks to the environment, including the historic environment. A registered charity, COWRIE (Collaborative Offshore Windfarm Research Into the Environment), was established to promote, encourage and support generic environmental research, improve understanding of potential impacts and opportunities for their mitigation, and to raise awareness of marine renewable energy generation (www.offshorewind.co.uk). COWRIE has commissioned several projects relating to the marine historic environment; January 2007 saw publication of *Historic environment guidance for the offshore renewable energy sector*, prepared for COWRIE by Wessex Archaeology. COWRIE then commissioned Oxford Archaeology to prepare guidance on the cumulative impacts on the historic environment from offshore renewable energy.

Cumulative impact assessment is a requirement for Strategic Environmental Assessment (SEA) for wide areas, and for Environmental Impact Assessment (EIA) on projects, and appropriate mitigation strategies must be incorporated into planning decisions. Cumulative impacts on coastal and terrestrial areas must be considered as well as those in the marine environment itself. Traditionally the major impact has been visual, but as more information emerges about palaeoenvironmental deposits, these too have become increasingly important. One positive benefit is that surveys in

advance of development add to the knowledge base, but at the moment lack of understanding of the marine historic environment means that impacts such as changes to scour patterns and to environmental conditions are difficult to predict.

COWRIE guidance to be published in 2008 will provide a framework through which historic environment specialists and the principal developers can identify potential sources of cumulative impact and suggest appropriate mitigation. It is essential that historic environment specialists are involved in the process as early as possible and that there is effective communication between specialists from different disciplines: the guidance shows how this can happen at each stage of the assessment process. Effective mitigation relies on the monitoring process so that new information can be incorporated into work practices and future planning.

There is currently little guidance on assessment of cumulative impacts on the historic environment for terrestrial archaeology, and so the methodology proposed for offshore projects might prove to have a wider application for environmental assessment in general.

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Oxford Archaeology 2007 *Draft guidance for assessment of cumulative impact on the historic environment from offshore renewable energy*.
Commissioned by COWRIE Ltd
www.offshorewind.co.uk/KnowledgeBase/CIARCHReport.aspx

Wessex Archaeology Ltd 2007 *Historic environment guidance for the offshore renewable energy sector*. Commissioned by COWRIE Ltd
www.offshorewind.co.uk/Downloads/archaeo_guidance.pdf



Piling and archaeology: English Heritage guidance note

Jim Williams

Before joining English Heritage I was developing project designs to look at construction impacts on archaeological remains for the Department of Civil and Structural Engineering at the University of Sheffield. This focused on piling impacts, and as an archaeological science advisor it was clear that guidelines on the subject were needed. With Jane Sidell and Ian Panter I began work on a guidance note, with detailed analysis of piling techniques and their impacts on archaeological deposits.

Impacts from displacement piles

Following a paper by Martin Biddle at the 1994 IFA conference which highlighted the potential damage caused by displacement piles (those driven straight into the ground, forcing soil aside) there was a backlash against these in favour of replacement piles (where a core of soil is removed). However, little research was directed towards understanding the impacts from displacement (or any) piles. There were few documented examples of piling impacts, and the best examples remained those published by Biddle. Archaeologists have convinced themselves

that there is little point excavating adjacent to old foundations because of the damage caused during their installation, and so avoid collecting data on specific construction impacts.

We have therefore used results from engineering projects and field-scale tests. These demonstrate that, despite variations in layer composition and thickness, and pile shapes, the zone of deformation stayed roughly the same, with an impact four times the area of the pile. Understanding this zone of deformation has been crucial for development of the guidelines, and allows us provide sufficient information for local authority officers to make informed decisions.

Future foundation reuse

At the 2006 IFA conference in Edinburgh, I summarised my recent involvement with an EC 5th Framework project investigating reuse of foundations, called RuFUS (www.reuseoffoundations.com). A key element of that project is future-proofing, so that foundations can be reused in the future. This includes retention of relevant information relating to those foundations. As archaeologists we should be particularly keen to see this on sites where, as part

of the mitigation strategy, piling has been undertaken to leave archaeological remains *in situ*. It seems paradoxical that a site is significant enough to be preserved but that adequate records of the location, load and other technical details are not kept. In the guidelines we recommend storage of such information within the HER or site archive. Perhaps we should now think about how to collect data relating to all preservation *in situ* schemes utilising piled foundations since implementation of PPG16.

The guidance is available in hard copy from customer@english-heritage.org.uk or can be downloaded from www.helm.org.uk.

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Protecting wreck sites

Mark Dunkley

As part of a wider initiative to assess the state of all designated historic assets, English Heritage is seeking to understand current management patterns upon England's Protected Wreck Sites, their likely future trajectory and how that can be influenced to ensure their significance is maintained. The identification of risks to such sites will be key to how they are managed. As wreck sites may contain the remains of vessels, their fittings, armaments, cargo and other associated objects or deposits, they may merit legal protection as they contribute significantly to our understanding of our maritime past.

- trajectory: an assessment of the management regime and whether the monument's condition remains stable or is experiencing unmanaged or inappropriate decline.

We will also monitor the medium risk category since it is at this point that action can be taken to prevent future damage, decay or loss, which is better than trying to repair it. A free copy of the *Handbook* is available from maritime@english-heritage.org.uk.

Further information on Protected Wreck Sites is available on www.english-heritage.org.uk/maritime

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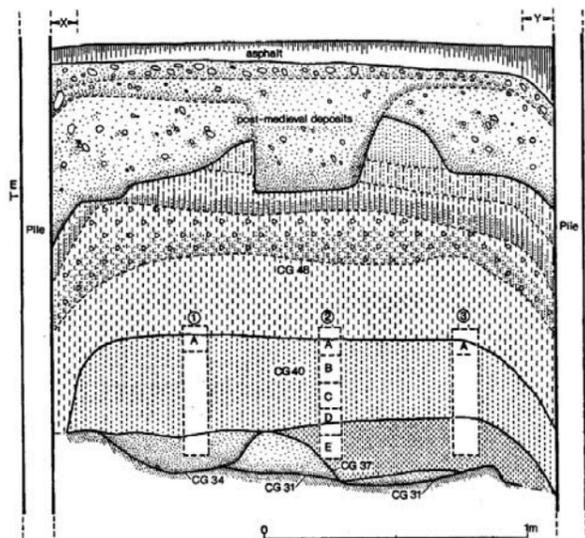
P.S. IKUWA3: *The Third International Congress on Underwater Archaeology* The Third International Congress on Underwater Archaeology (IKUWA3) is to be held in London in July 2008. Further information is available from <http://www.ikuwa3.com/index.php>.

We have therefore developed a *Risk Management Handbook* which assesses risk systematically by gauging information against a set of standard terms. This Handbook describes a methodology to be adopted by English Heritage, contract archaeologists, Licensees and others engaged in the risk assessment and risk management of England's Protected Wreck Sites. It is anticipated that the methodology will be refined and eventually extended to the non-designated wreck resource.

Three broad factors have been considered when assessing risks

- condition: the current condition of the wreck, whether in optimal condition, generally satisfactory, generally unsatisfactory or having extensive problems
- vulnerability: natural and anthropogenic influences

Farrier Street, Worcester, again! This image was used by Martin Biddle to highlight damage caused by displacement piling; sadly few other examples of piling impacts have been collected, and this remains one of the best recorded examples of damage. © Worcestershire Archaeological Society and Worcestershire Historic Environment and Archaeology Service



This image shows quite clearly that replacement (rotary bored) piles can cut quite cleanly through archaeological remains without significant impact on the adjacent areas. Image from Gresham Street, London. © MoLAS



Student's Recording the Swash Channel Protected Wreck Site, Poole Bay. Photograph: Bournemouth University

Lost at sea: New study of plane crash sites

Euan McNeill

Thousands of planes have crashed into the sea around Britain, many during the second world war. At the time, planes and crew were presumed lost for ever. But today they are being found, by divers and, increasingly, in dredging for gravel and other aggregates.

The crash sites of military aeroplanes are given automatic protection under the 1986 Protection of Military Remains Act. The problem is that their location is rarely known and, as archaeologists have been discovering, some wrecks thought to be ships have turned out to be aeroplanes. Much of the sand and gravel used in Britain's construction is gathered by dredging out at sea, and one unexpected result of

a recent scheme to report the discovery of shipwrecks and other finds of interest to archaeologists by dredgers has been the routine identification of plane crash sites, sometimes with human remains.

Graham Scott of Wessex Archaeology explained 'staff on board the dredgers and on the wharves where the aggregates are processed are helped to identify archaeological finds so they know when to call in archaeologists. A web based reporting system means that there is prompt expert feedback. Even when finds are only identified on the wharves it is still possible to track back where the gravel was dredged from.' Planes identified this way include a Fleet Air Arm Supermarine Attacker, one which is either an American B-25 or P-51 bomber, and a German Junkers JU-88 bomber. Many families today are still touched by this issue. It represents a challenge, both ethical and logistical, for the marine aggregate industry and heritage professionals.

The marine aggregates operators follow a protocol that requires an Exclusion Zone to be set up around the site to prevent further dredging. The possible presence of the crew and passengers and also unexploded munitions are assessed. This can put large areas of the seabed out of bounds, so further work is done to narrow this down.

A preliminary study of the issue by Wessex Archaeology has been commissioned by English Heritage, funded through the Aggregate Levy Sustainability Fund. Wessex Archaeology are now asking individuals and organisations with records or specialist knowledge of aircraft crash sites or losses at sea to come forward with any information they have, and also to use the project blog.

For further information see <http://blogs.wessexarch.co.uk/aircraftcrashsitesatsea>

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Part of a Supermarine Attacker from off the Sussex coast, examined during one of our British Marine Aggregates Producers Association (BMAPA) Awareness Programme sessions. Photograph: Elaine A Wakefield, Wessex Archaeology

Part of a German saddle drum magazine for a MG15 machine-gun from a crash site off the Suffolk coast, probably of a Henkel He. 111 bomber.



Black Environment Network conference

Jane Evans

BEN

This year's BEN (Black Environment Network) conference was held in London at 'Roots and Shoots,' a charity providing vocational training for young people from London's inner city. Delegates reflected a range of cultural backgrounds and interests, from community workers to bat conservationists. BEN conferences provide a reminder that archaeology is one aspect of the environment that can improve people's quality of life and mutual understanding.

The heritage sector was well represented, with Richard Fitzherbert of the Historic Houses Association (an exhibition on slavery at Tissington Hall), Taja Sidhu of the BEN Discover Heritage project (connecting groups to Scotland's natural and built heritage), Angela Dove of Heritage Link (engaging diverse groups in heritage), Andrew Fitzpatrick of Wessex Archaeology (the sinking of the SS Mendi, a forgotten contribution to WW1), Sajida Aslam of the National Trust West Midlands (interpretation at National Trust sites), and Rachel Hasted of English Heritage (introducing the 'Sites of memory' publication). For me however it was non-archaeological presentations that were most inspiring. There are so many approaches to reaching out to community groups, and ideas we could learn from. A tour of gardens established by the Bankside Open Spaces Trust culminated at Tate Modern community garden. This incorporated artefacts gathered from the river bank, under the supervision of archaeologist Fiona Haughey, and used to make decorative mosaics.

Angela Dove presented a selection of quotes that could be discussed in group work. One, 'Diversity, the art of thinking independently together,' (Malcolm Stevenson Forbes) seems particularly pertinent to IFA, as the broadening scope of the profession forces us to redefine ourselves. Archaeology depends on diversity, in the range of skills and interests required to bring any project to

completion. We therefore need to be continually challenging ourselves if we are failing to engage with a wide cross section of the community. A delegate hinted at one problem 'I feel challenged by this term "hard to reach groups". Maybe the heritage sector just isn't effective in finding ways of reaching us.'

Perhaps we are the "hard to reach group"!

A taster session of BEN training, run by consultant Max Ghani and Saleem Oppal of BEN, showed how perceived difficulties of widening access, such as language, cultural sensitivities or just not knowing who to approach, can be overcome. This would make an excellent IFA professional training seminar.

I encourage anyone who is involved in outreach or training to find out more about BEN (<http://www.ben-network.org.uk/>). Broadening involvement in heritage is not just about ticking boxes and widening the customer base. This conference illustrated how much our profession stands to gain, how much we have to offer, and how this is refreshing and fun.

Jane Evans
Freelance specialist
cjrompot@waitrose.com

Mosaic under construction at Tate Modern Community Garden. Photograph: Synthia Griffin, Curator Family & Community Programmes, ©Tate Modern



New members

ELECTED	Member (MIFA)	Associate (AIFA)	Practitioner (PIFA)	Affiliate	Student
	Caroline Earwood	Sophia Adams	Steve Brown	Elsbeth Alphey	Alex Allen
	Jonathan Gill	Anne Boyle	Laura Cassie	Andrea Borgius	Amy Barsby
	James Gossip	Tom Davies	Jane Harris	Gemma Bradley	Lloyd Bosworth
	Graeme Kirkham	Robert De'Athe	Alison Kelly	Steve Burch	Ashley Coutu
	Kenneth Lönnqvist	Peter Dudley	Gareth Rees	Caroline Butler	Erica D'Amico
	Minna Lönnqvist	Carole Fletcher	Sian Reynolds	Benjamin Carroll	James Doeser
	Richard Massey	Taleyna Fletcher	Freddie Scadgell	Denis Carter	Chris Ferguson
	Jacqueline Pearce	Marika Fourie	Georgina Slater	Ian Clarke	Tara Fidler
	Jane Richardson	Michael Fradley	Claire Statter	Genevieve Close	Anna Finesilver
	Stephen Upex	Teresa Gilmore	Mark Tidmarsh	Robert Elliott	Georgette Gormley
	Gary White	Jane Phimester	Daniel Watkeys	Rupert Goulding	Janelle Harrison
		Alexandra Pickstone		Claire Halls	Paul Holmes
		Mary-Anne Sloane		James Hare	Alison Klevnäs
		Thomas Small		Matt Johns	Caroline Mawer
		Robert Travis		David Lang	Margaret McCartney
		Sophie Watson		Ellen McInnes	Helen Meadows
		Jennifer Wylie		Barbara Mills	Philip Parker
				Katrina-Rhianno Nicholas	Sascha Priewe
				Roy Nicholls	Anya Rardin
				Steven Rathgay	Dianne Scullin
				Peter Reed	Daniel Stirland
				Karen Rogers	Shanna Streich
				Slawomir Szyszka	Emily van Haersma Buma
				Peter Twinn	Adam Waite
				Scott Vance	
				Debra Wallace	
				Richard Whyte	

TRANSFERS	Member (MIFA)	Associate (AIFA)	Practitioner (PIFA)	Affiliate	Affiliate (cont)
	Mark Allen	David Gilbert	Graham Arnold	Catherine Barton-Jones	John Macken
	John Mabbitt	Samuel Harrison	Charlotte Coles	Boel Bengtsson	Zsolt Magyar
	Andrew Manning	Teresa Hawtin	Elise Fraser	Nicola Bettley	Gary Manning
		Jason Mole	Gina Jacklin	Daniel Brace	Carol Mansfield
		Felix Riede	Avis Lloyd	Rebecca Briscoe	Panagiota Markoulaki
		Andrew Sage	Jane Lloyd	Chloe Brown	Eloise Markwick
		Matthew Smith	Simon Reames	David Brown	Catrin Matthews
				Sophie Butler	Sarah McNaughton
				Jill Campbell	Jeffrey Mikamo-White
				George Carstairs	Mark Mitchell
				Aiji Castle	Bryan Moore
				Deborah Charlton	Gemma Mutch
				Eleanor Collier	Aisling Ni Labhrai
				Meredith Coney	Lucy Parker
				Richard Constable	Melanie Partlett
				Kerry Dean	David Pearce
				Jonathan Dudley	Zara Pryce-Maher
				Bruce Dunsmore	Rebecca Riley
				Matt Edmonds	Graham Ritchie
				Edward Fitzgerald-Clark	Sarah Ritchie
				Asuka Gamo	Hayley Roberts
				Peter Gane	Michael Shaw
				Oliver Good	Meryl Shriver-Rice
				Amy Gray Jones	Rachel Simmons
				Christopher Green	Kathryn Smith
				Sue Hanshaw	Rachel Smith
				Lucie Hawkins	David Sorapure
				Joanne Hawkins	Jason Stewart
				James Howe	Nyssa Venthem
				Miles Hutchinson	Katharine Walker
				Karl Jones	Sarah Ward
				Victoria Kew	Angela Wesley
				Emma Knight	Hannah White
				Elizabeth Logan	Suzanne Wood
				Lynne Lowrie	

Members news

IFA is delighted to welcome two new organisations as registered archaeological organisations (RAOs).

Hampshire & Wight Trust for Maritime Archaeology/ Maritime Archaeology Ltd

HWTMA is a charitable trust which was formed in 1991 to promote interest, research and knowledge of maritime archaeology and heritage. Our core activities, which include a research-led field programme, education and outreach initiatives and a wide range of representation and promotion, are based in the Solent and adjacent south coast areas. Archaeological research projects include work on submerged prehistoric landscapes, shipwrecks, foreshore hulks, waterside infrastructure sites and maritime cultural landscapes. Further details of our work can be found at www.hwtma.org.uk

In response to growing demand for commercially led maritime archaeological services, Maritime Archaeology Ltd (MAL) (www.maritimearchaeology.co.uk) was established in 2004. The company provides marine heritage-related services. All profits generated from MAL are used to support the work of HWTMA.



HWTMA divers at work

Members news



Historic environment service, Cornwall County Council

The service began in 1975 as Cornwall Committee for Rescue Archaeology, changed to Cornwall Archaeological Unit in 1987 and took its current title in 2002. Our web name is Historic Cornwall, www.historic-cornwall.org.uk. We have always been both Curator and Contractor. This was originally a response to geographical isolation but is now a clear preference. The county has benefited by being able to retain a significant reserve of staff expertise and by creating projects that fulfil planning conditions as well as addressing knowledge gaps and new research. An in-house project team allows us to retain and absorb new information that better informs our advice and information service.

We protect the distinctive culture and historic character of Cornwall through advising local authorities and partner organisations on matters relating to the historic environment, including management, conservation, development control, policy, and strategy ensuring that the County Council fulfils its statutory duties and manages the heritage assets in its care delivery of Headline Actions in Cornwall's Community Strategy carrying out projects for research and providing information,

Phoenix Mine (Bodmin Moor) in the snow, part of the Cornish Mining World Heritage Site.
Photograph: © Cornwall County Council

advice and interpretation on historic sites and buildings implementing the Cornish Mining World Heritage Site Management Plan

Jane Evans, MIFA 2224

Next May Jane will be participating in UNICEF's 'Trek for the children of Peru' to raise money for UNICEF. A number of IFA members will have worked on archaeological projects in Peru; others will have worked with Jane over the past 25 years; some may just relish the image of a small, middle aged, Roman pottery specialist having to go outside and do some hard graft! If you would like to sponsor her this can be done securely online at www.justgiving.com/cjaneevans or contact her on 01684 567131 or cjrompot@waitrose.com

Obituary

Robina McNeil, MIFA 709, FSA

1950-2007



Robina started in archaeology at Carn Euny as a teenager in 1968, and then took a degree at the Institute of Archaeology, UCL. Later, with her first husband Bevis Sale, she ran excavations in the Po valley foothills on Bronze Age settlement sites. In Britain they both worked for the Clwyd-Powys Archaeological Trust in its early years. After some time in Chester she became freelance, excavating and publishing sites in North Wales and Cheshire. Her work at Nantwich was particularly significant, revealing timber *wich* houses (domestic factories for boiling brine to produce salt) from the 12th century. She was involved when Lindow Man was discovered and took many of the iconic site photographs.

She moved to Manchester in 1987, as Senior Field Officer within a small professional archaeological team based in the University of Manchester. She recognised the historic potential of Manchester, in particular the major monuments of the Industrial Revolution, and much of her work thereafter was geared to enhancing awareness of the importance of Manchester to world heritage as the first integrated industrial city.

The Manchester team grew, eventually providing jobs for over 500 long-term unemployed. She undertook an enormous range of field projects and became the County Archaeologist for Greater Manchester. Key projects included survey work at

the army range on Holcombe Moor, where she helped to chart and preserve one of the best relict industrial landscapes in the country, and Staircase House, Stockport, one of the last medieval urban houses surviving within the conurbation. Her creativity was evident when she used Lego bricks to model the development of the house and devised an accessible history, with stick people to explain its changing form and functions. She was passionate about exploring historic buildings and architecture and was the editor of the Greater Manchester Heritage Atlas. She was also editor for IFA's Buildings Archaeology Group, where her belief in an archaeological approach to buildings was contagious.

Her commitment to preservation led to many battles, especially in central Manchester. Some of these contests were lost but those that were won served to re-establish in the public mind the unique role of the area, in industrial history, agriculture, politics and social change.

Robina was aware of the need to build partnerships at all levels. She worked enthusiastically with local groups to develop 'Dig Manchester', the largest community archaeology venture in the country. She recognised too that awareness of the importance of the historic environment to economic regeneration and social cohesion was necessary, and played a key role in development of the European Route of Industrial Heritage – the pan-European scheme to develop site tourism – as well as on the World Heritage Committee of ICOMOS-UK. She sought to convey the importance of urbanism as a positive force by organising urban sessions for the European Association of Archaeologists. She was passionate about her own city, working to promote Manchester as a World Heritage Site at the time of her death, and was proud of successes such as the display of the medieval Hanging Bridge within Manchester Cathedral Visitor Centre where she was Cathedral Archaeologist.

She is survived by her second husband Brian Ayers, County Archaeologist in Norfolk.

John Walker with contributions by Brian Ayers and Bevis Sale

Dear Editor

The future of the Institute of Field Archaeologists

I would like to support wholeheartedly IFA's initiative in proposing a complete re-think on the future of our Institute. The historic environment world is now very different compared to 25 years ago.

Encouraged by IFA, the heritage professions have been converging for several years now, but my own experience on the DCMS Heritage Protection Review Steering Group has led me to believe that our sector has reached a tipping point. In many ways the Heritage White Paper has settled for the next generation some crucial relationships: between protection of the historic environment and the needs of economic development; between the heritage sector and the wider community; and the duties of Government, English Heritage and local authorities

Perhaps most important is the implicit cross cutting thread that runs through the White Paper that our sector is now firmly the *Historic Environment Sector*, and also part of the wider *Heritage Sector* that includes archives, local studies libraries and museums as well as the historic environment. Thus we should now see ourselves as historic environment practitioners with particular expertises in (for example) archaeological techniques, historic buildings analysis, palaeoenvironment, geotechnics, artefact studies, architectural history, conservation works, documentary research etc.

Two important services that IFA, IHBC, ALGAO and English Heritage can together render the emerging historic environment sector are to reorganise our historic environment institutions, and to better define what local authority historic environment services should be providing. In times of change, organisations need to become more focused, more effective and more visible. Our sector is small and fractured. It is fractured into archaeology and buildings because its institutions were built to reflect prevailing historic legislation and the 1974 reorganisation of local government. The Heritage White paper will unify the former and the current round of local government changes the latter. The world is changing beneath our feet. In Cornwall we may have a unitary authority with a unified Historic Environment Service. The county council pays fees for membership of professional institutions. It is however quite beyond me to explain why the new authority should pay for two overlapping institutions, as well as for ALGAO.

My strong recommendation to Council is that they consider creating a new professional institute that will oversee professional standards, register historic environment organisations and lobby for the professions within the historic environment world. Naturally this

would be best formed out of a merger of IFA and IHBC but if this is not possible then we must consider IFA going it alone. In addition, a new public sector historic environment services association should also be formed out of ALGAO and part of IHBC that would represent the interests of local authority/public sector/curator historic environment services. This will create a clearly defined and inclusive professional institution that will in time (perhaps) become a chartered institute and will deal with professional standards and training. The association, on the other hand, will deal with the issues around the delivery of services. The logic of this seems wholly convincing. We are but small fish in a very large pond.....we need to shoal together. The government has shown that it has very little sympathy with sectors that cannot get their act together.

We are acutely aware that many local authority historic environment services are under threat from budget cuts and barbarism, and yet we have no yardsticks to measure what any particular area can expect of its HE services. We also have no means of measuring what resources are needed to carry out these services. We are at the mercy of budget decisions based variously on the skills, persuasiveness, incompetence or prejudices of individual officers and councillors. Virtually all other parts of local authority services know more or less what they are expected to deliver and have nationally agreed funding formulae against which they can bid. If we are to deliver HPR then we must have a means of assessing need, based on standard national criteria for measuring the heritage resource of an area, and the degree of development and change (and therefore workload) in an area, and an agreed list of duties and responsibilities of local authority historic environment services. As you are aware we are using a list in Cornwall that has been compiled with help from IFA, ALGAO and IHBC members in Cornwall and the South West, as well as IFA and IHBC members in Scotland.

There is a strong case to be made for the whole sector to work together in reorganising itself and agreeing what services it should be delivering against an agreed financial resources scale. I would hope that IFA, along with IHBC, ALGAO and English Heritage will address, with renewed urgency, these important issues on behalf of the sector. Perhaps we can then hope to have professional yardsticks against which we can judge our individual conducts (via a new institute) and service performance yardsticks against which we can judge our collective performances(via a new association).

**Nicholas Johnson MBE, MA, Bsc, MIFA, FSA,
Historic Environment Manager, Cornwall County
Council**

More comments on this (and other) issues are welcome for this page (Ed).