
Maritime and Intertidal Archaeology 2011

Introduction

The seas around the Welsh coastline contain an immeasurable wealth of archaeology and historical artefacts. This includes not only the remains of sunken or beached vessels, their cargo and armaments, but also features associated with the management of the coastline, such as harbour installations; the exploitation of the intertidal zone, such as fish weirs; and submerged landscapes, formerly dry land, usually dating from early prehistoric periods. Maritime archaeology presents the same essential components of the historic environment as does the terrestrial, yielding information with a different but complementary slant about our past. Our nation is hemmed by the sea on three sides, and our settlement patterns, transport and supply, technology, communications and politics, attitudes and eccentricities were influenced and fashioned to a large part by our coastline; thus maritime archaeology has an importance equal to the terrestrial and must play its part in the discipline of archaeological research if we are to understand fully what it is that makes Wales the country it has become.

Since the production of the original research agenda for this topic, substantial progress has been made in a number of key areas. Some questions and challenges raised in 2004 have been met or at least advanced while others inevitably have been posed. This paper attempts to highlight this progress, and suggests future directions for research and exploration.

Structure of this review

The first part of this review will briefly discuss developments which have taken place under key themes identified in the original research agenda

The second part comprises a revised priority list for research, including some original themes which appear still to be relevant.

A short summary of the current position and suggested priorities is given.

The final part comprises relevant bibliography, and includes new publications of significance.

Research agenda items against which progress has been made or is underway

Resource Quantification

1a. Maritime database – RCAHMW

In 2004, when the original topic paper for maritime archaeology was produced, the Royal Commission on the Ancient and Historical Monuments of Wales (RCAHMW) had only recently embarked upon the compilation of the maritime component of the National Monument Record of Wales (NMRW). The paucity of the record at that time was recognised as the primary weakness in the study of Wales' marine archaeology and, while its development was strictly not a research item in itself, it was accepted as a key requirement for a credible marine research agenda in Wales.

Since 2004, progress has been remarkable due mainly to the appointment of a full-time Maritime Officer in April 2007. A review of the existing record highlighted key sources to be accessed, and the key drivers in offshore development which would determine priority spatial areas of the record for enhancement. The stocktake produced three internal documents shared with Cadw– Review of Maritime Archaeology in Wales and Maritime Recording within the NMRW; an IT Strategy and Data Structure Specification to develop a portable database mirroring the NMRW with additional field for maritime recording; and a 5-year Maritime Project Plan.

The Project Plan identified 53 priority tasks, amongst which was to establish a reciprocal data-sharing agreement with the UK Hydrographic Office (UKHO) to facilitate the ground-truthing of the documented sites in the NMRW to the sites known on the seabed. Liaison with colleagues in England, Isle of Man and Ireland has established spatial extents as guides for data gathering and exchange. The Project Plan has been implemented through a major programme of data correlation (UKHO and NMRW) and compilation in conjunction with further archive research. The total number of records for shipwreck and aircraft downed at sea is now 5159. A small pilot of Seascapes Characterisation utilising historic digital charts sourced from the UKHO has also been undertaken as part of concept for the development of GIS layers required for WAG marine spatial planning (e.g. archaeological risk mapping).

The RCAHMW is also developing its strategy for the archiving of marine geophysics as works towards Trusted Digital Repository Status, fully mindful of the results generated by Cadw's other marine programmes (e.g. marine geophysics resulting from the monitoring of the wrecks designated under by the Protection of

Wrecks Act (PWA), and the research projects on Coal and Slate Wreck sites, both investigations being taken forward by Wessex Archaeology and the Nautical Archaeology Society).

1b. Research agenda priority

The continued improvement of the maritime database, and its representation of all forms of maritime archaeological features.

The maritime database should continue to expand with collection and curation of records generated both from its own initiatives and fieldwork undertaken by others. The collection and interpretation of data collected by other bodies, such as geophysical survey undertaken by offshore developers or nature conservation and other sea-bed managers, is important, especially since underwater archaeological survey is comparatively rare. The maritime database also fulfils an important function in providing information to other archaeological organisations for the purposes of development control and heritage management.

There are relatively few practitioners in Wales who have specialist knowledge of underwater archaeology, and there is a need for professional training to build on the Maritime Workshop hosted by the RCAHMMW in October 2008 and to encourage collaborative research projects between organisation within key specialism and capabilities (e.g. marine geophysics) to ground truth the archaeological potential areas of seabed which begin to be identified through NMRW enhancement.

Resource Management

2a West Coast Paleolandscapes Project

The 2004 marine and coastal research agenda identified the urgent need for the mapping of submerged prehistoric land surfaces, particularly with regard to the Mesolithic coastline of Wales. The lack of any data on this crucial component of Welsh prehistoric archaeology was seen as a serious weakness both in our understanding of the early archaeology of Wales and in protecting this unknown resource from adverse impact by off-shore and coastal development

Following the innovative and ambitious 'mapping doggerland' project, the west-coast palaeo-landscapes project has recently begun to examine data from commercial companies to map the underwater landscapes between Wales and England. The project undertaken by the University of Birmingham, with input from the Welsh Archaeological Trusts (WATs) and the RCAHMMW, has gathered data from the Trusts' Historic Environment Records, National Monument Record and other sources of geophysical record

to provide evidence for the presence and activities of early ancestors across Wales in response to period of glacial amelioration. The University of Birmingham has reviewed large quantities of seabed geotechnical data (largely from sub-bottom profiling) to map geological forms and deposits which confirm the land bridge which once existed between Wales, Ireland, the Isle of Man and England and the river systems which once flowed across it. Of particular importance are the areas of offshore peat deposits which have the potential to reveal palaeo-environmental information.

This project has been completed and launched in March 2011.

2b Research agenda priority

Understanding and mapping the changing early landscapes now submerged or intertidal, and identifying areas of archaeological sensitivity and potential.

The information from the west coast palaeo-landscapes project should now be further interpreted and disseminated and extended with further investigation into the submerged landscapes of the Welsh coast. Given the vast scale of this enterprise, we should concentrate upon 'ground truthing' theoretical maps of the Welsh submerged coastline, through research projects on small areas of seabed, developing methodologies employed by the University of Bangor in its assessment of the Menai Strait or Seabed Prehistory (Wessex Archaeology).

We must also take advantage of the opportunities given by the development of appropriate mitigation measures in response to offshore development control. The seabed geotechnical assessments undertaken for engineering purposes should be curated by the NMR in such a way as to ensure their contribution to developing fuller understanding. Offshore developers should also be encouraged to contribute and recognised for the contribution to archaeological knowledge they are making via schemes such as the BMAPA Protocol for Reporting Underwater Finds and the forthcoming Crown Estate Offshore Renewables Protocol.

Resource identification and survey

3a Shipwrecks – location of sites and under-representational quality of protected sites

The fact that there are only six statutorily protected (designated) wrecks within Welsh waters is in no way representative of the total

resource and its importance in Welsh archaeology. The identification of suitable candidates for designation relies on desk-based research and survey – both underwater and in the intertidal areas. Whilst the terrestrial protection programme has marched on apace, systematically reviewing different classes of monuments and different time-periods, underwater survey has lagged behind. It is recognised that, although English Heritage has reviewed criteria for assessing the archaeological and historic importance of shipwrecks, the UK-wide non-statutory criteria used to assess wreck sites for designation through the Protection of Wrecks Act 1973 remain the most widely used. Cadw's recently published 'Conservation Principles, Policies and Guidance 2009 may give an additional steer.

The 2004 research agenda recognised the non-representational quality of the list of protected wreck sites and suggested that a programme to establish a more coherent list should be undertaken, by commissioning a study of traditional Welsh ships and boats of especial importance to Wales. Accordingly, vessels associated with the slate and coal industries were selected for study, industries of particular importance to north and south Wales respectively. Wessex Archaeology was firstly commissioned to undertake desk-based assessments of historic wrecks known to have been carrying these cargos at time of loss; this work was then followed by geophysical survey of clusters of the recorded sites to confirm their presence on the seabed and map their extent and condition. This programme of marine geophysics has planned four hitherto unknown coal wrecks and six relating to the slate trade, along with many anomalies which may be of archaeological interest. A marine geophysical survey of a navigation hazard close to the one of the centres of the slate trade, has identified three newly discovered wrecks, along with 60 anomalies of possible archaeological interest. This survey work will now be followed by an assessment of extant sites as candidates for statutory protection.

The Nautical Archaeological Society (NAS) has been commissioned to take this work further to disseminate the results to the wider community. The Society, with assistance from RCHMW, has selected wreck sites which may be appropriate for diver training and/or suitable for groups to research and survey under the Adopt-A-Wreck scheme.

The RCAHMW is also contributing to this study of coal and slate trade vessels through a programme of survey of intertidal targets identified through its aerial photographic work – for example, three slate schooners at Ynyslas and the wreck of a possible ketch barge engaged in the coal trade at Sully Island.

3b Research agenda priority

Studying and surveying underwater wrecks by theme or in certain locations, thereby increasing our understanding of the resource and ensuring the numbers of statutorily protected wrecks are more representative of the resource as a whole.

A key priority now is to continue pro-active survey, concentrating on further known shipping hazards and areas whilst also concentrating efforts on individual sites to assess suitability for designation. Recreational divers and volunteers will play a large role in this, and supporting them through continued support to the NAS will assist in achieving this aim.

The archaeological potential of the resource of aircraft (particularly military relating to the World Wars) downed at sea is still largely unknown. It has begun to be tackled by the RCAHMMW through its monument recording programme. As with shipwrecks, it is recognised that there are individuals who have already accessed a great deal of the primary resource materials. Again, there is great potential to involve volunteers in research and recording.

Several English studies have the potential to assist the formulation of Welsh approach to mapping the seabed and identifying areas of archaeological potential. Hence a review of the more relevant project reports will be undertaken in the near future (accessible via the Archaeological Data Service WWW site, see bibliography).

4a Typology of Welsh vessels

Shipbuilding and the use of ships and boats has historically been a major facet of life in coastal Wales, and the 2004 Research Agenda identified as a priority the study of Welsh vessels to establish any distinctive qualities they may have. The production of the desk-based assessment of coal and slate wrecks (see above) has provided a useful first step in the attempt to identify a typology of vessels built and utilised in Wales, particularly in the post-Medieval period, and the geophysical surveys undertaken on selected vessels and the proposed NAS work will continue this theme. The scale of this project is enormous and the slate and coal vessels study must be seen as merely one component of this, albeit an important one.

Smaller vernacular vessels (e.g. fishing vessels, sloops, barges, ketches, etc) rarely leave behind drawn plans and their type of ownership makes their losses less likely to be recorded; consequently they will inevitably be under-represented as identified wreck sites on the seabed. Also the maritime record of the NMRW is currently dominated by post medieval shipwreck information (ie. that which is most easily accessible from records). It is recognised that future programmes of work should target sources that may shed light on medieval and early periods.

In order to assess and disseminate the existing state of knowledge of Wales' maritime archaeology, as well as encourage further study, a new multi-author publication has been commissioned 'Reclaiming History from the Sea: Maritime Archaeology Around Wales' (RCAHMW) which includes at its core a chronology of ship types and their development from earliest time. It is likely that the volume will appear in 2012.

MORWOL (Institute of Welsh Maritime Historical Studies) is a new initiative by regular contributors to the *Maritime Wales* publication to promote maritime history, its research and the accessioning of maritime related artefacts/documents to museum collections/archives (e.g. along the lines of the Women's Archive of Wales, <http://www.womensarchivewales.org/>). It presents an opportunity for the archaeological community to engage with researchers who are continuing in the spirit of well-known maritime authors such as Aled Eames and Lewis Lloyd to publish material relating to seafaring and maritime communities.

4b Research agenda priority

Develop an enhanced understanding of the particularity of vessels designed for specific environments or industries, and assess known post-medieval wrecks and hulks for their potential to inform about technical advances in shipping.

The programme of studies which was initiated after the 2004 Research Agenda and which has resulted in the slate and coal wrecks studies (see above) should now be extended to cover different vessel types. The 2010 conference suggested that fishing vessels might be the next study to be undertaken and discussions as to how this should be implemented are now underway.

The formulation of Welsh typologies and assessment of site significance may use as models studies undertaken elsewhere. For example, in 2008, Wessex Archaeology undertook a review of monument class descriptions; it also established principles for the

selection of significant wrecks within aggregate dredging areas for determining special mitigation measures such as exclusion zones, or recording and recovery (Wessex Archaeology, 2008, project number 5383). Whilst no systematic work has yet taken place, improvements to the NMRW maritime record together with new survey information are helping to provide a starting point.

The numerous known wrecks, along with known foreshore and intertidal hulks, provide a massive reservoir of potential information. It is likely that much of the survey of local vessels will be undertaken by local volunteers – both divers and non-divers – to whom the professional archaeologist will continue to be indebted. A systematic review of the RCAHMW aerial photographic collections and the continued coastal flying at times of lowest tides by the RCAHMW will contribute additional targets for intertidal hulk surveys to the NAS to take forward as training sites.

5a Historic ports and harbours.

The 2004 Research Agenda suggested that Trade and Settlement – the study of ports, harbours, wharfage, estuaries and supply routes – would be a useful priority for research. Consequently Cadw has funded a number of studies designed to further this research theme. A pan-Wales study of Welsh ports and harbours project was carried out by the four Welsh Archaeological Trusts in an attempt to quantify and identify both discrete sites and wider areas of archaeological potential within major ports and harbours. The reports generally collated available information, bringing together references to archives held by others as well as information gained from previous coastal surveys. Limited fieldwork was undertaken to verify the desktop work.

Two larger scale projects have been undertaken on The Milford Haven Waterway and Crossing the Menai Strait (Dyfed and Gwynedd Archaeological Trusts respectively). The former report produced a series of GIS tables highlighting areas of archaeological importance, and these were supplied to the harbour authority as well as other interested parties. The latter focussed on features on the coast used historically for marine crossing.

These studies have resulted in a series of publications useful both for research but also for development control during proposals for port development or dredging.

5b Research agenda priority

To continue the study to cover all major ports and harbours in Wales, and to examine not only at a landscape, extensive scale, but also at a more intensive, site-specific scale in areas most likely to be at risk from development or natural processes.

While the study of the major inland waterway (Milford Haven) and most of the historic ports and harbours have now been examined, the study of wharfage, docks and supply routes coastal and riverine awaits further work.

Outreach, awareness-raising and training

6a The Nautical Archaeological Society, Arfordir and the role of volunteers

Underwater survey and data collection is very dependent on the efforts of sports divers with an interest in historical sites. Many of these have received training from the Nautical Archaeological Society, which is the major body providing training for interested amateurs in the field of maritime archaeology. Cadw has for many years provided support to the NAS, to provide training courses in Wales and to encourage members to carry out active survey and take part in schemes like 'Adopt a Wreck'.

A more recent coastal project, entitled 'Arfordir' has been funded by Cadw since 2009. A pan-Wales project, it encourages groups and individuals to take part in monitoring their own stretches of coastline, looking for archaeological and historic features, surveying them and monitoring the effect of coastal erosion. The volunteers receive training and support through the Welsh Archaeological Trusts, and is now taking place across the majority of the Welsh coastline.

Both of these initiatives rely on harnessing the goodwill and enthusiasm of interested volunteers, and, in turn, we must ensure that the programmes deliver something for them as well as providing information back to heritage bodies.

6b Research agenda priority

To study and monitor changes in the maritime archaeological resource by encouraging appropriately trained volunteers to participate in maritime and coastal archaeology, and to develop closer links between terrestrial, inter-tidal and underwater projects.

The 'Arfordir' project and the training courses provided by the NAS represent a significant opportunity to link the work of different

volunteer groups. 'Arfordir' aims to monitor change on coastal sites, while the NAS work with amateur diving groups encourages repeated dives on submerged wrecks to provide information about their changing condition. Information about change is clearly information which can be used for management purposes, and to inform future courses of action at sites deemed to be particularly important or interesting.

Further Research Agenda Priorities

While several of the priorities suggested in the original 2004 Agenda have been taken forward, as detailed above, others have received less attention. In addition, since 2004, awareness of new priorities has arisen.

Study of Estuaries as major access points for shipping and settlement

The work of the Severn Levels Research Group has demonstrated the archaeological potential of the ever changing dynamic tidal estuaries. We might seek to extend the work undertaken during the Cadw funded Coastal Survey of Wales to more intensive studies of selected estuaries - The Dee and Milford Haven at the larger scale and the smaller Dyfi, and Taf/Cywin might be considered.

- Welsh Lakes

Studies of lakes in Scotland and Ireland demonstrate the potential of lakes for understanding of prehistoric and later settlement and exploitation. There has been some intensive site based work – such as at Llangors, Llyn Cerrig Bach and Llyn Fawr and Llyn Padarn and Peris but lacustrine archaeology of Wales may be considered under studied. An initial feasibility study designed to survey and explore the use of these inland waters might be productive. The role of the lakes of North-West Wales within the slate industry would be an important component of the more general study of that industry.

- Trade and Supply: Historic Bridging and Crossing Points and Wharfage

The discovery of a well preserved medieval masonry wharf at Skenfrith in the riverside silts adjacent to the castle, another possible site at Roman Caerleon and of ancient bridges at

Caldicot and Chepstow adds another dimension to our understanding of how trade and supply routes to high status defensive sites and settlements worked with the hinterland. Such discoveries are probably always going to be chance finds, but opportunities during development and excavation in likely positions should be grasped.

- Marine and Coastal Industry and its impact within Settlement

A new Research Agenda priority is the study of marine and coastal industry and its impact on character of settlement. Some industries have completely disappeared and some may only ever have been associated with slight tangible infrastructure.

Industries such as ship building, ship supply industries (eg. sail and rope making), installations for trade and control (eg. storage depots, warehouses, customs houses) and the development of sea-side tourism might form a series of studies, and timely given the current rate of coastal development. Understanding the impact that the development of such marine industries exerted on the character of historic towns and appreciating the extent to which this impact may continue to be reflected within settlements long after the demise of the industry itself, could be a useful component of planning control.

Summary Statement on the Revised Research Agenda for Wales: Marine and Coastal Archaeology.

The seas around the Welsh coastline contain an immeasurable wealth of archaeology and historical artefacts. This includes not only the remains of sunken or beached vessels, their cargo and armaments, but also features associated with the management of the coastline, such as harbour installations; the exploitation of the intertidal zone, such as fish weirs; and submerged landscapes, formerly dry land, usually dating from early prehistoric periods. Maritime archaeology presents the same essential components of the historic environment as does the terrestrial, yielding information with a different but complementary slant about our past. Our nation is hemmed by the sea on three sides, and our settlement patterns, transport and supply, technology, communications and politics, attitudes and eccentricities were influenced and fashioned to a large part by our coastline; thus maritime archaeology has an importance equal to the terrestrial and must play its part in the discipline of archaeological research if we are to understand fully what it is that makes Wales the country it has become.

Since the production of the original research agenda for this topic, substantial progress has been made in a number of key areas. Some questions and challenges raised in 2004 have been met or at least advanced while others inevitably have arisen to greater prominence.

The Research Agenda for 2011 should include the following priorities:

1. Continuing to improve the maritime database, and its representation of all forms of maritime archaeological features.
2. Surveying, mapping and understanding palaeo-landscapes now submerged or intertidal, and identifying areas of archaeological sensitivity and potential.
3. Studying and surveying underwater wrecks by theme or in certain locations, thereby increasing our understanding of the resource and ensuring the numbers of statutorily protected wrecks are more representative of the resource as a whole.
4. Enhancing the understanding of the particularity of vessels designed for specific Welsh environments or industries, and assessing known post-medieval wrecks and hulks for their potential to inform about technical advances in shipping. Fishing vessels have been suggested as the next focus for study.
5. To continue the study to cover all ports and harbours in Wales, and to examine their commercial relationship with their hinterland not only broadly at a landscape scale, but also at a more intensive, site-specific scale in areas most likely to be at risk from development or natural processes.
6. To study and monitor coastal change in the archaeological resource by encouraging appropriately trained volunteers to participate in maritime and coastal archaeology, and to develop closer links between terrestrial, inter-tidal and underwater projects.
7. The study of estuaries as major access points for shipping and settlement
8. The study of Welsh lakes, especially with regard to their use and exploitation within industry, trade and settlement.
9. Historic bridging and crossing points and wharfage associated with supply and trade at historic sites and settlements.

10. The development of different marine-based industries within coastal settlements, and their impact on the character of towns and villages