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**Refresh of the Welsh Research Agenda  
for Palaeolithic & Mesolithic Archaeology 2016**

Prepared by a working group formed of:

Dr Martin Bates, University of Wales, Trinity Saint David  
Professor Martin Bell, University of Reading  
Dr Ian Brooks, Engineering Archaeological Services Ltd.  
Dr Astrid Caseldine  
Dr Andrew David  
Dr Rob Dinnis, University of Edinburgh  
Richard Hankinson, Clwyd Powys Archaeological Trust  
Dr George Nash, University of Bristol  
Dr Rick Schulting, University of Oxford  
George Smith  
Elizabeth Walker, Amgueddfa Cymru – National Museum Wales (Co-ordinator)

With further input from:

David Maynard, Landsker Archaeology  
Catherine Rees, CR Archaeology  
Rose Roberts, Bangor University  
Una Tregaskis, Bangor University

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## 1. List of relevant recent research undertaken since 2010

### a) Field survey, and assessment of lithic collections

- Penpant, Solva, Pembrokeshire. Survey of field and surface fieldwalking.
- Ramsey Island, Pembrokeshire. Surface fieldwalking.
- Llangwm, Pembrokeshire. Surface fieldwalking.
- Cleddau valley, Pembrokeshire. Surface fieldwalking
- Milford Haven – Brecon pipeline. Field survey and excavation.
- Bardsey Island (Ynys Enlli), Llyn, Gwynedd.
- Penrhosfeilw Common, Anglesey. Assessment of lithic surface collections
- Cophill Farm, Howick, Chepstow, Monmouthshire. Surface fieldwalking.
- St Fagans, Cardiff. Surface fieldwalking.
- Bishopston Valley Caves, Gower, Swansea.
- Cathole Cave rock art survey, Gower, Swansea. Discovery and recording of Palaeolithic rock art.
- Lydstep, Pembrokeshire. Recording of Mesolithic peat deposits and human footprints.
- Banc Wernwgan, Mynydd Du.
- North-East Wales. Preliminary assessment of the region's caves.
- Goldcliff East. Recording of lithic scatters and human, bird and animal footprints.

### b) Excavation/evaluation

- Penpant, Solva, Pembrokeshire. Excavation of test pits.
- Craig Rhos-y-Felin, Pembrokeshire. Excavation of Mesolithic hearths.
- Milford – Brecon pipeline. Excavation of sites of Mesolithic age along pipeline route.
- SPACES Project, Pembrokeshire. Excavation has generated new Mesolithic <sup>14</sup>C dates.
- The Esso Refinery near Hook, Pembrokeshire. Excavation has generated new Mesolithic artefacts.
- Snail Cave rock shelter, Llandudno, Gwynedd. Excavation of a Mesolithic site.
- Garreg Hyldrem rock shelter, Llanfrothen, Gwynedd. Excavation of a Mesolithic site
- Waun Llanfair, Conwy. Environmental evidence of upland vegetation changes and possible human influence in the 6th millennium BC.
- Cathole Cave, Gower, Swansea. Excavation prior to grilling and recording of an historic standing section (Walker *et al.* 2014).
- Long Hole, Gower, Swansea. New study of old collections and test

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excavation in 2012.

- Ffynnon Beuno Cave, Tremeirchion, Denbighshire. Ongoing excavations at Ffynnon Beuno (2011-present) have demonstrated some intact deposits in the cave's eastern fissure passage, and have retrieved material lithic and bone material from the spoil heap in front of the cave (Conneller & Dinnis 2012).
- Upper Meirchion Cave, Denbighshire. Small-scale test excavations have been undertaken to determine extent of past undocumented excavation during the 19<sup>th</sup> Century (Dinnis and Ebbs 2013).
- Llanarmon Cave, Denbighshire. A site known to have previously yielded Mesolithic material during poorly documented early 21<sup>st</sup> Century excavations (Dinnis *et al.* in prep.).
- Excavations at various Gower caves (Schulting *et al.* 2013).
- Kendrick's Cave, Llandudno. Evaluation trenching prior to grilling.
- Llanfaethlu, Anglesey. Excavation of a Neolithic site with evidence for Mesolithic settlement and lithic artefacts.

### c) Analysis

- Lower Wye Valley and southern Welsh Marches. Provenancing of Mesolithic material from the: PhD research, LA-ICPMS? In progress: Tom Elliot, University of Worcester.
- Paviland Cave, Gower, Swansea. Publications dealing with the Paviland assemblage, and new (2011) study of technical pieces housed in Oxford (published in Dinnis, 2015).
- Cae Gwyn Cave, Tremeirchion, Denbighshire. Study of the old collection of lithics from the caves (Aldhouse-Green *et al.* 2015).
- The use of caves and karst landscapes during the Mesolithic in south western Britain, in progress: Caroline Rosen, University of Worcester.
- AMS 14C dating and stable isotope analysis of Late Mesolithic human remains from Foxhole Cave, Gower (Schulting *et al.* 2013).
- Hoyle's Mouth Cave and Little Hoyle Cave, Pembrokeshire. Lithic artefacts in museums in Manchester, Bristol, Tenby and Cardiff. In progress: Elizabeth Walker.

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**2) The relevance of the research to research frameworks. Have questions been answered/partially answered? Did the research set out to answer that question?**

*a) Colonisation and recolonization*

- Bardsey Island (Ynys Enlli): Mesolithic use of boats and possible deep water fishing.
- The establishment of a link between Paviland and Long Hole with a basis in the archaeological material (Dinnis 2012) strengthens the notion that human absence was more characteristic of Upper Palaeolithic Britain than human presence.

*b) Settlement patterns and settlement histories*

- Excavations of cave sites in North and South Wales set out to determine how extensive the survival of deposits containing both archaeological and environmental evidence is for these periods.
- Snail Cave rock shelter: Seasonal patterns of coastal exploitation.
- Garreg Hyldrem: Seasonal patterns of coastal exploitation.
- The field research and lithic analysis of sites in central Pembrokeshire (Cleddau valleys) addresses the apparent bias towards coastal settlement in the later Mesolithic, and attempts to compare lithic signatures from coastal sites with those newly detected further inland. The potential of the valley floor sites to address environmental context, chronology and economy is very apparent – if not yet confirmed.
- Projects at Ramsey, Penpant, Llangwm and along the course of the Milford – Brecon pipeline have extended the distribution and characterisation of both early and late Mesolithic settlement (as identified by lithic material), partially addressing this theme.
- Chronology (the production of a reliable framework of scientifically obtained age-estimates) is all but entirely lacking. Mesolithic period radiocarbon dates obtained from projects with objectives in later prehistory have incidentally extended the potential distribution and timing of Mesolithic activity into the Preseli area, but this remains uncharacterised.

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c) *Identifying the chronologies, cultural relationships and human behaviours of the occupants of Wales during stages of the Early Upper Palaeolithic and seek comparisons with evidence from elsewhere in Britain and Europe*

- This has been done for the Long Hole, Paviland Cave and Ffynnon Beuno/Cae Gwyn collections: Dinnis 2011 *Anthropologica et Præhistorica*, Dinnis 2012 *Lithics*, Dinnis 2012 *Antiquity*, Aldhouse-Green *et al.* 2015, Dinnis 2015.

*d) Applying new technologies and new techniques.*

- Lower Wye Valley and southern Welsh Marches. Provenancing of Mesolithic material: PhD research, lithic sourcing, raw materials, organisation of technology and analysis including geochemistry, in progress: Tom Elliot, University of Worcester.
- Strontium isotope analysis of Mesolithic and Neolithic teeth from Foxhole Cave, Gower (Rick Schulting, University of Oxford)
- New dating using ultrafiltration of faunal remains from Hoyle's Mouth and Little Hoyle Caves, Pembrokeshire (Elizabeth Walker, National Museum Wales).

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### **3) Amendments to the research questions adopted by the 2011 review**

#### a) Colonisation and recolonization

- The pattern of human presence and absence across Wales at specific times is a theme that requires further elucidation. There is some relevance in the above publications.
- Targeted survey of inland locations to counterbalance coastal bias, e.g. investigation of river and lakesides, rock shelters.
- Systematic mapping of earlier coastlines and identification of possible focal points or areas for Mesolithic exploitation, such as river mouths, inland salmon runs.
- By improving sampling strategies on sites it would be possible to gain a broader record of earlier prehistoric activity at a site. For example, improved sampling and sieving could lead to an improved dataset for the earlier periods. Such data would enable researchers to address questions of site continuity through time.
- Future research should investigate the differential use of landscapes. This should enable a picture to be obtained about the relationships between sites and the different tasks that the people may be undertaking at specific places. This should also consider regional comparisons and different environmental responses to the landscape at different times.

#### b) Chronology

- The topmost priority must surely be the establishment of a chronological framework for human activity in Wales and for its environmental context. It is integral to all the other themes, for both the Palaeolithic and the Mesolithic, and needs to be singled out. Within such a theme, one could no doubt propose sub-themes, such as:
  - Consolidating knowledge of the timing of human and animal presence in Wales during the Palaeolithic
  - Establishing the timing of initial Holocene colonisation
  - Tracking change in lithic technologies throughout the Mesolithic, focusing on transitions between Early>Late Mesolithic and Late Mesolithic>Neolithic
  - Refining the chronological framework for environmental change (sea level, vegetation, sediments, geomorphology)
  - Application of scientific techniques to extend the range of dating (e.g. OSL, <sup>14</sup>C ultrafiltration) as well as its refinements (e.g. Bayesian analysis).

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- Whilst there may still be some potential for the dating of archived material, the dependent priority must be the scientific dating of newly identified stratigraphic sequences where artefacts, structures, and evidence for environmental change can be securely linked. Options for this in the Palaeolithic are clearly extremely limited, but the exposure of new sequences in caves and the readiness to exploit chance indicators of open-air sites, as well as exposures of Pleistocene alluvial sequences in valleys. Particular attention should be given to Pleistocene sediment exposures in coastal situations especially in the Severn Estuary where several finds of Palaeolithic artefacts have been made in intertidal contexts. Ideally these would be supported by enhanced education/training of professional and local communities to help in the recognition and exploitation of such rare occurrences.
  - In the Mesolithic the existing and recognised potential for establishing a chronology is rather greater. Despite the acknowledged potential of intertidal sites, there needs to be focus also on the exposure and dating of terrestrial sequences, in river valleys and likely upland topographies, with precedence given to the dating of sequences rather than sites of mixed lithic signatures where stratigraphy is absent or unclear. Wetland edge contexts offer particular potential for the establishment of datable sequences. Geoarchaeological investigations are needed to identify the key topographic and sedimentary contexts in which Mesolithic activity is likely to occur. To achieve this, there are two preliminary requirements: *prospection* and *ground-truthing*. [which also contribute to at least '*Settlement patterns and settlement histories*' and '*applying new technologies and new techniques*'].

### c) Prospection

- Applicable to the Palaeolithic, e.g. for locating undiscovered sediment traps.
- Extend field reconnaissance into under-researched areas. Recent experience from central Pembrokeshire indicates that this can be extremely rewarding, capable of quite radically extending settlement distributions.
- To achieve more than occasional and very local results, field reconnaissance needs to be activated as widely as possible. For this to be effective, suitable expertise and enthusiasm must be disseminated more widely amongst professionals (including commercial archaeologists) as well as in local communities [e.g. through PAS etc].
- Target such explorations using predictive modelling/GIS, supplemented with input from aerial and satellite remote sensing (and with seismic techniques in the offshore zone).
- And supplement this with ground-based remote sensing where appropriate, to identify settlement sites where stratigraphy may survive (e.g.

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palaeochannels). If present, organic preservation would be at a very high premium, potentially opening a huge window on our knowledge of the period.

- Undertake a survey of caves along the limestone cliffs of the south Gower Coast in search of LUP rock art and historic graffiti.
- Human and animal footprints of Mesolithic date have now been found on several sites in the Severn Estuary and west and north Wales they represent a key resource for identifying past human activity and ecology. Submerged forests of Mesolithic date are widespread in Wales they represent areas of preserved Mesolithic land-surface with great palaeo-environmental potential and are often associated with artefacts. In the case of both footprints and submerged forests techniques for their rapid recording need to be refined and potential sites monitored following storms.

### d) Ground-truthing

- Follow up the discovery of surface collections of lithic artefacts with coring, test pitting, and trial trenching to confirm, characterise and sample stratigraphic sequences. Area excavation to follow, if appropriate, to contribute to other themes (e.g. *social organisation, action and belief systems*, etc).

### e) Artefact analysis

- *Discrete lithic assemblages*: these are badly needed, from stratified and dated sites (see above), to help overcome the very limited conclusions that can presently be drawn from the lithic analysis of surface collections of mixed ages. This should lead to a more refined characterisation of Mesolithic toolkits as they evolved through time, allowing (for example) more confident interpretations of settlement patterns based on lithic signatures alone (for example, allowing better-informed evaluation in advance of commercial development).
- A more highly resolved typology would also identify chronological/functional markers of significance, and allow the recognition of material influences from outside Wales (e.g. Irish Sea region, France).
- To re-evaluate artefacts and the document archive from various libraries and museum collections, including artefacts and documentation that are held in the British Museum and the National Museum of Wales.
- *Functional analysis*: the functions of stone tools characteristic of the Mesolithic in Wales remain very poorly understood – if at all. If suitably preserved assemblages can be recovered, functional analysis supported by

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programmes of experimental archaeology should be attempted. Such work should aim to understand the functions of, for example, denticulate scrapers, truncations, burins, awls, notched pieces and utilised flakes/blades; the functions of pebble tools such as ground-stone axeheads and bevelled pebbles also need to be elucidated. Knowledge of the use of these tools would allow more informed interpretation of wider subsistence and perhaps social issues.

- *Raw materials analysis*: there remains scope for projects which can comprehensively map and characterize primary and (some) secondary geological sources of lithic artefacts, and attempt to match the two using their respective petrographic/chemical signatures. As flint is not the only raw material used for knapped tools, such studies should also be applied to chert, quartz and other materials. Such research might help understand:
  - Direction of movement of social groups
  - Definition of spheres of influence and/or social territories
  - Identification of pre-Neolithic quarrying
  - Identification of non-Welsh sources
  - Identification of offshore sources
- To create a full database of where raw materials occur in the landscape and to apply the data to identify and seek to understand raw material procurement strategies.

### *f) Continue to locate the Research Agenda for Wales within wider British and European contexts.*

- This remains highly relevant (see above) with, for example, links established between EUP lithic collections from Wales and those from Belgium and France.

### *g) Continue to promote the need to consider a potential Palaeolithic and Mesolithic resource.*

- It is essential that developers understand the potential for there to be a Palaeolithic and Mesolithic resource and that investigation is undertaken of deposits of such age. It will mainly be through future developer funded work that new sites, particularly of Mesolithic age, may be recognised.

**4) Research justification – use of the existing research framework has been used for example as a means of justifying research/funding.**

- It has been cited in the:
  - Snail Cave rock shelter evaluation
  - Bardsey Island (Ynys Enlli) project
  - A grant application to obtain funding for AMS dates for Hoyle's Mouth Cave from Cambrian Archaeological Association
  - A grant application to the Cambrian Archaeological Association to fund research at Cutty Bridge
  - In a proposal to Cadw for funding for the Cathole Cave excavation project
  - Part Cadw-funded project, looking at the geochemistry of possible pigments within Cathole Cave
  - Cadw funded evaluation at Kendrick's Cave
  - In a proposal to Cadw for the Penpant project.