

<p>Institution: The University of Huddersfield</p> <p>Unit of Assessment: 30 History</p>
<p>Title of case study: Battlefield Archaeology and New Methods for the Identification, Understanding and Conservation of Historic Fields of Conflict</p>
<p>1. Summary of the impact</p> <p>University of Huddersfield research into new interdisciplinary methods for systematic archaeological examination has led to significant advances in the identification and subsequent conservation of historic battlefields. The work has influenced policy and practice at English Heritage, informing key changes in its National Heritage Protection Plan, and has been used to help safeguard famous sites such as Bosworth and Hastings. It has also shaped policy in other countries – including Belgium – where it has been described as “the basis for the development of a governmental vision” regarding battlefield sites – and has raised wider public awareness of battlefield archaeology through high-profile media engagement.</p>
<p>2. Underpinning research</p> <p>Battlefields have a major archaeological dimension, with their investigation an essential tool both for understanding the events that occurred on them and for the framing of conservation management strategies to ensure their future survival. Research completed at Huddersfield has pioneered an interdisciplinary methodology for systematic archaeological examination of battlefields.</p> <p>Dr Glenn Foard (Reader in Battlefield Archaeology, University of Huddersfield, 2010-present; previously County Archaeologist, Northamptonshire County Council, 1995-2002, and Archaeological Consultant, 2002-2010) led this work in studies on major battlefields in the UK and Europe. Foard extended approaches first developed in the US to tackle the more complex problems and deeper history of warfare in Europe.</p> <p>In his work at Naseby, Northamptonshire, Foard was the first to apply the methods of the English landscape school – interdisciplinary study incorporating history, archaeology and geography, as conceived by renowned landscape historian WG Hoskins – to reconstruct battlefield terrain as a context within which to understand documented action. Moreover, at Grafton Regis, Northamptonshire, Foard extended this methodology to the first systematic archaeological metal-detecting survey of a European field of conflict and first use of a geographic information system (GIS) to integrate evidence of battle archaeology with terrain and action. At Edgehill, Warwickshire, Foard undertook Europe’s first battlefield-wide systematic archaeological survey with GIS and a Global Positioning System (GPS) integrated to enable fully digital recording and analysis.</p> <p>Building on these methodological advances [4], an interdisciplinary team led by Foard went on to locate England’s most famous lost battlefield at Bosworth, Leicestershire. This involved the first-ever full systematic survey of a 15th-century battlefield [2, 3]. Although begun in 2004, the final stages of fieldwork, the understanding and analysis, and writing up, were undertaken at Huddersfield, where the methodology is now being extended and disseminated [1]. This includes an AHRC-funded CDA with English Heritage on 17th-century siege sites; undertaking exemplar battlefield surveys in Flanders; and work at Hastings to identify the archaeological signature of 11th-century battles.</p> <p>The work at Bosworth also uncovered the first large-scale physical evidence of gunpowder weapons’ use on Europe’s medieval battlefields [3, 5]. Bosworth yielded 34 “round shot” – solid projectiles fired from artillery – a total exceeding that so far amassed during the archaeological survey of all other battlefields of the period. Experimentation in collaboration with Cranfield University has confirmed firing evidence, identified on the surface of lead rounds, can indicate the type and construction of the guns which fired them. This suggests battlefield archaeology might be able to chart, chronologically and geographically, the replacement on the battlefield of breech with</p>

Impact case study (REF3b)

muzzle loading and wrought-iron with cast-bronze and cast-iron guns.

Interdisciplinary research to further this line of investigation is now under way. Supported by a British Academy grant, Foard has studied the internal ballistic properties of surviving 15th-century guns across Europe. Since neutrons (unlike X-rays) penetrate lead, non-destructive experiments to determine interior structure of battlefield projectiles, many of composite construction, have been undertaken with grants to University of Huddersfield, after peer review, of neutron beamtime (grant equivalent of c. £111,000) at Switzerland's Paul Scherrer Institute and France's Institut Laue-Langevin.

3. References to the research

Outputs:

1. Foard, G, and Morris, R (2012): *The Archaeology of English Battlefields*, York, Council for British Archaeology (In REF 2); evidence of value: EH agreed to fund this publication after peer review; Council for British Archaeology agreed to publish; review in British Archaeology: 'this excellent book... marks a coming-of-age for battlefield archaeology in England'
2. Foard, G (2012): *The Battlefield Archaeology of the English Civil War*, Archaeopress (In REF 2)
3. Foard, G, and Curry, A (2013): *Bosworth 1485: A Battlefield Rediscovered*, Oxford, Oxbow (In REF 2); evidence of value: Oxbow agreed to fund publication; peer reviewed.
4. Foard, G, Janaway, R, and Wilson, A (2010): The Scientific Study and Conservation of Battlefield Artefact Assemblages, AHRC/EPSRC Science and Heritage Programme [http://www.heritagescience.ac.uk/Research_Projects/projects/Projectposters/Conservation_of Battlefield Archaeology project report](http://www.heritagescience.ac.uk/Research_Projects/projects/Projectposters/Conservation_of_Battlefield_Archaeology_project_report). Evidence of value: in November 2013 EH took up key recommendations of the report, advertising a Collaborative Doctoral Partnership within the National Heritage Protection Plan: 'Understanding the impacts on significance of archaeology in agricultural regimes' (NHPP 2D1)
5. Bosworth battlefield survey specialist reports and primary data published online by the Archaeology Data Service http://archaeologydataservice.ac.uk/archives/view/bosworth_hlf_2011/

Grants:

1. Awarded to G.Foard, University of Huddersfield (Principal Investigator) & Dr S.Walton (Co-Investigator); 'Origins of Firepower: Characterising Europe's earliest surviving small field artillery and hand guns'; British Academy; 1/7/2010 - 30/6/2012; £7,300
2. Overall grant (€60,000) awarded to Ename Expertisecentrum voor Erfgoedontsluiting vzw, Hoge Mote, De Biesestraat 2, 9600 Ronse, Belgium (lead organisation), of which €19,690 sub-contracted to G.Foard, University of Huddersfield (Co-investigator) to lead and write up the field investigation; Oudenaarde Battlefield Survey; Flanders Heritage Agency; 14/6/2011 – 30/09/2012.
3. Awarded to G.Foard, University of Huddersfield; 'Hastings Battlefield Project'; EHEH; 3/6/2011 – 1/12/2012; £5,000
4. Overall grant to Ename Expertisecentrum voor Erfgoedontsluiting vzw, Hoge Mote, De Biesestraat 2, 9600 Ronse, Belgium (lead organisation), of which €15,325 sub-contracted to G.Foard, University of Huddersfield (Co-investigator); 'Lafelt Battlefield Survey'; Flanders Heritage Agency; 01/04/2013 – 31/12/2013
5. Awarded to G. Foard, University of Huddersfield (lead supervisor); AHRC Collaborative Doctoral Award for 'Establishing a methodology to unlock the archaeology of attack on siege sites: a case study from 17th Century England'; 0/1/2012 – 29/09/2016; AHRC £54,250 & English Heritage £6000

4. Details of the impact

Studies at Huddersfield pioneered interdisciplinary methods for the systematic examination of historic battlefields, augmenting researchers' capacity to resolve longstanding questions of military history. They also revealed archaeology's value in identifying threats to battlefield survival, allowing design and targeting of conservation management strategies or recording action on major UK and European battlefields.

The Head of the Strategic Planning and Management Division at English Heritage (EH) has acknowledged that Foard's work has "had an impact on professional practice", noting: "Managers and curators have a better feel for how to target work and resources and how to identify those areas that have greater significance than others. It is therefore easier to identify the degrees of harm identified in the National Planning Policy Framework." [a] An example of this, locating Bosworth enabled EH to revise the registered boundary and, with Leicestershire County Council (LCC), commission a Conservation Management Plan – a UK first [b, c].

In 2010, at Huddersfield, Foard completed the first detailed assessment of risks to England's battlefields. This EH-commissioned study employed understanding from the research to assess threats and conservation needs at Stamford Bridge, Northallerton, Boroughbridge, Towton, Adwalton Moor, Halidon Hill and Newburn Ford. Foard's report now guides their management, shaping decisions by EH, local authorities and the Battlefields Trust. Action includes the revision of Adwalton Moor's registered boundary, conservation management at Towton and initiatives by the Battlefields Trust on threats at Newburn [d].

In 2011, following recommendations in the 2010 report and the draft of Foard & Morris 2012, for the first time EH allocated £127,000 in the National Heritage Protection Plan for work on historic battlefields over four years and prioritised a review of all Battlefield Register boundaries [e]. Moreover, Foard's Edgcote assessment, for the Battlefields Trust, was instrumental in 2013 in EH registration of that battlefield, securing modification of the HS2 route to minimise impact on the site and ensuring appropriate archaeological investigation prior to construction.

At Hastings in 2011-2013 EH funded the extension of the survey methodology to 11th century evidence and assessment of EH's conservation management of the site. This revealed major contamination by re-enactment and other public events, resulting in guidance of international relevance regarding use of historic battlefields, leading EH to reconsider practice at Hastings.

In 2013 Foard's research into modern agriculture's damaging effects on metal artefacts in the topsoil led EH to apply one of its AHRC Collaborative Partnership awards to establish the scale and nature of these impacts, to guide mitigation measures through agri-environment mechanisms.

Foard's work has also influenced conservation policy in Belgium. In 2011-2012 Flanders Heritage Agency allocated €60,000 for an exemplar survey at Oudenaarde led by Foard. In 2013, for the Agency, Foard collaborated in studying Lafelt battlefield. The Head of Department of Heritage Research and Protection has described the collaboration with Foard as "vital to the Flemish Heritage Agency", with the Oudenaarde and Lafelt reports providing "the basis for the development of a governmental vision and policy regarding Flemish battlefield sites older than WWI" [f]. Foard also advised the archaeological service in Saxony-Anhalt, Germany, on survey of the threatened Lutzen (1632) battlefield.

The research, through high-profile media attention, raised public awareness of battlefield archaeology and showed how evidence can be explored using modern scientific methods. Leicestershire's Assistant Director, Communities and Welfare, has noted that the Bosworth Project "changed the way the site is interpreted and communicated to the public" and "together with the new exhibition at Bosworth, improved visitor figures" – from 38,380 in 2008/2009, before site discovery, to 43,420 in 2010/2011, after discovery, and projected to reach 57,000 in 2013/2014 (based on first six months at 34,427) after dissemination of the research [g]. The Head of EH's Strategic Planning and Management Division has stated: "Foard's work at Bosworth, predictably,

Impact case study (REF3b)

attracted considerable public attention, generating real national cultural impact, and has helped to reinforce the importance of protecting these places for the wider public.” [a]

A Time Team Special: The Wars of the Roses focused on the Bosworth investigation and attracted 1.6m viewers when first screened in 2011 [h]. In addition, in 2013 the Bosworth success led Videotext Communications to commission Foard to direct new fieldwork at Hastings for the 1066 Time Team Special. Also in 2013, media coverage led to high-profile talks at Chalke Valley History Festival; a Royal Armouries VIP event at the Tower of London; and, funded by the National Parks Service, at the Fields of Conflict Conference, Columbia, USA. It also persuaded the Battlefields Trust to collaborate with Foard in seeking HLF project funding to advance understanding, conservation, interpretation and public access for all sites of the Wars of the Roses.

5. Sources to corroborate the impact

- a. Head of Strategic Planning and Management Division, English Heritage. (Impact on the work of English Heritage and the wider Historic Environment sector in England).
- b. Bosworth Conservation Management Plan, LCC. Available on request. Bosworth Field Project.
- c. Conservation Management Plan for the site of Northampton Battlefield, Northampton Borough Council. Available on request.
- d. Foard, G (2010): High-Risk Battlefields Management Strategy: Yorkshire & the Humber & North East Regions. For English Heritage. Available on request. Commissioning resulted from success of our battlefields research. Report now informs conservation management action on the seven sites.
- e. EH National Heritage Protection Plan 4E1
<http://www.english-heritage.org.uk/professional/protection/national-heritage-protection-plan/plan/>
Influenced by the assessment of Battlefields at Risk and the draft of Foard & Morris 2012.
- f. Head of Department of Heritage Research and Protection, Flanders Heritage Agency.
Impact of battlefield surveys at Oudenaarde and Lafelt on Flemish government heritage policy.
- g. Assistant Director, Communities and Wellbeing, Leicestershire County Council. Bosworth Field Project.
- h. Time Team Special: The Wars of the Roses (first broadcast March 16 2011, 8.00pm, Channel 4)
<http://www.channel4.com/programmes/time-team-specials/episode-guide/series-6/episode-3>