

**From:** [Bush, Mark](#)  
**To:** [A303 Stonehenge](#)  
**Cc:** [REDACTED]  
**Subject:** RE: Updates for A303 Stonehenge  
**Date:** 24 May 2019 12:47:10  
**Attachments:** [image001.png](#)  
[image003.png](#)  
[Michael Parker Pearson short CV.docx](#)  
[Estimating flint artefacts in the WHS ploughsoil.docx](#)  
[PresentationMPP.pptx](#)  
[David Jacques CV Victoria.docx](#)  
[Bradley Short CV.docx](#)  
**Importance:** High

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Dear Sirs,

On behalf of the Consortium of archaeologists and the Blick Mead project, I wish to notify you of the individuals from this group who wish to attend Issue Specific Hearings on 5 and 6 June (as detailed below), and who will wish to speak or else be available to answer the committee's questions in their fields of expertise.

Victoria Hutton of Counsel will be representing this group at the aforementioned hearings, potentially alongside Peter Village QC, depending on other commitments.

#### 5 June

-  
Prof Mike Parker Pearson will be in attendance at this meeting and will be able to elaborate on his previous written submissions (re-filed by me with our submissions of 3 May 2019) concerning the archaeological heritage issues arising from the proposed locations of the eastern and western portals and the western dual carriageway section, as may be required by the panel. I have attached above a copy of Prof Parker Pearson's CV, from which the panel will note his unparalleled expertise and experience in the field of research in the Stonehenge WHS landscape. Prof Parker Pearson is also a key member of the A303 Scientific committee, and I would urge the panel to take advantage of his presence at the meeting on 5 June should it require clarification of any and all objections we have raised on these issues.

Also in attendance from the group to observe proceedings on 5 June will be Prof David Jacques (Director of the Blick Mead project), myself and my colleague, Mr Nigel Adams. Other members of the group who have registered as Interested parties in their own right may also have notified you separately of their wish to attend this meeting.

#### 6 June (morning)

-  
Prof Mike Parker Pearson will again be in attendance for this session, and he seeks permission to address the panel for up to 15 minutes on the key issues arising from the DAMS. He has prepared a Powerpoint presentation, attached above, which I would be grateful if you would make arrangements to display at the meeting to allow Prof Parker Pearson to illustrate his presentation, as was discussed at the Preliminary Meeting. I have attached a further document above prepared by Prof Parker Pearson setting out the bases of his calculations. Once again, Prof David Jacques, myself and Nigel Adams will wish to attend as observers from the group, probably alongside Dr Chris Bradley who is attending from Birmingham on this day mainly to assist the panel, if required, in relation the matters to be addressed in the afternoon session.

#### 6 June (afternoon)

-  
For the hearing addressing Blick Mead and the hydrology issues, both Prof David Jacques and Dr Chris Bradley will be in attendance to respond to the panel's questions as may be required. I attach CV's for both Prof Jacques and Dr Bradley above to confirm the credentials as experts in their respective fields, and once again I would urge the panel to take advantage of their presence at this meeting. Prof Jacques made a written submission as to the nature and significance of the Blick Mead archaeological site which was filed with my submission on behalf of the Blick Mead team on 3 May 2019, addressing the failures of Highways England to adequately risk assess the possible impact of the scheme on the local eater table at Blick Mead. He is also a witness of fact with regard to the dealings with Highways England and their agencies over this issue since early 2018, should disputes of fact arise at the meeting which the panel seek to resolve.

Dr Bradley has kindly agreed to step into the shoes of Prof Tony Brown, whose written submission

on the technical inadequacies of Highways England's water table monitoring at this site to date was also filed with my overarching submission on 3 May. Unfortunately Prof Brown is abroad on 6 June and unable to attend. However, Dr Bradley, as the panel will note from his attached CV, is equally qualified to assist the panel should it require clarification of these issues; he is familiar with the Blick Mead site and collaborated with Prof Brown over his submission.

Once more, both myself and Nigel Adams wish to be in attendance to observe proceedings, and it may be that Prof Parker Pearson will also wish to remain in attendance for the afternoon session (to be confirmed).

Kindly acknowledge safe receipt and in particular confirm that arrangements will be in place for Prof Parker Pearson to address the panel on 5 June by reference to his Powerpoint presentation.

Yours faithfully,

Mark Bush

(on behalf of the Consortium of archaeologists and the Blick Mead Project Team)

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**From:** A303 Stonehenge <A303Stonehenge@planninginspectorate.gov.uk>

**Sent:** 15 May 2019 12:12

**To:** Bush, Mark <mbush@dacbeachcroft.com>

**Subject:** RE: Updates for A303 Stonehenge

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Dear Mr Bush

I refer to our conversation yesterday.

The Examining Authority has confirmed that it's aiming to deal with material issues, including the portals, the cutting, the junctions, etc on the first day (5 June), and the procedural issues, including the DAMS, on the morning of the second day. Blick Mead hydrology would then be considered on the afternoon of the second day (6 June).

I hope this is helpful.

Kind regards

A303 Amesbury to Berwick Down Case Team

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**From:** Bush, Mark <[mbush@dacbeachcroft.com](mailto:mbush@dacbeachcroft.com)>

**Sent:** 13 May 2019 18:56

**To:** A303 Stonehenge <[A303Stonehenge@planninginspectorate.gov.uk](mailto:A303Stonehenge@planninginspectorate.gov.uk)>

**Cc:** Victoria Hutton [REDACTED]

**Subject:** FW: Updates for A303 Stonehenge

**Importance:** High

Dear Sirs,

Our ref: 20020700

Many thanks for your email below and details of the issue specific hearings. I note the cultural heritage hearings will be held on 5 and 6 June, and that the Blick Mead hydrology issues in particular will be heard on 6 June.

Can you please clarify, for practical reasons, whether this means that the archaeology and heritage issues arising from the western portal and dual carriageway will be addressed on 5 June?

I need to ask so the right experts attend on the appropriate days.

On the subject of the experts, can you advise the format of the Issue Specific Meetings, and whether you will be inviting the experts to address the panel, or simply to attend ready to answer questions from either the panel or the other IP's?

I note the requirement to notify you of our intention to attend by 24 May, and what issues we wish to address.

Kind regards,

**Mark Bush**

## **DACBEACHCROFT**

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**From:** Planning Inspectorate <[noreply@infrastructure.planningportal.gov.uk](mailto:noreply@infrastructure.planningportal.gov.uk)>

**Sent:** 08 May 2019 09:46

**To:** Bush, Mark <[mbush@dacbeachcroft.com](mailto:mbush@dacbeachcroft.com)>

**Subject:** Updates for A303 Stonehenge

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## **TR010025: A303 Stonehenge Updates**

Hi Mark Bush,

The Agendas for [ISH5](#), [ISH6](#) and [OFH3](#) have been published along with the Submissions for [Deadline 6a](#).

See [project page](#) for more information.

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## CHRISTOPHER BRADLEY

School of Geography, Earth and Environmental Sciences  
The University of Birmingham, Edgbaston, Birmingham, B15 2TT, UK

### Qualifications:

**PhD. Physical Geography, University of Leicester, UK, 1994;** 'The hydrology of a floodplain wetland, Narborough Bog, Leicestershire'. NERC Studentship

**MA. Physical Geography, Wilfrid Laurier University, Canada, 1990;** 'Water quality dynamics in meltwaters draining Peyto Glacier, Alberta' (with Distinction). WLU Graduate Scholarship.

**BA. MA. Girton College, Cambridge, 1988. 1991.** Ili in Geography Tripos.

### Current and previous academic appointments.

2007→ Senior Lecturer, School of Geography, Earth and Environmental Science.

1994-07 Lecturer in Geography & Environmental Science, University of Birmingham.

### Research Interests.

Dr Chris Bradley is an environmental hydrologist at the University of Birmingham. He has published ~45 peer-reviewed articles with an h-index of 18. CB is a former member of the national committee of the British Hydrological Society and has >20 years research experience from working in Europe, N. & S. America & SE Asia. His research interests include process-based modelling of surface-water – groundwater exchange in alluvial aquifers, and developing and applying new approaches to quantifying microbial contamination using fluorescence spectroscopy (EPSRC, NERC), and organic matter characterisation (Malaysian Government).

Chris Bradley was an expert witness at the Catfield Fen Public Inquiry (April 2016): assisting an interested party in the review of a licence for groundwater abstraction in the Ant Broads and Marshes, Norfolk, UK.

### Selected Recent Grants:

2018. MRC Confidence-in-Concept (CiC) Fund: 2018-2019. Formative research evaluation of slums and peri-urban areas of Karachi for Weaning Food Safety and Hygiene Intervention. £46,000.

2017. MRC Confidence-in-Concept (CiC) Fund and LES Impact funding: 2017-2018. Two year follow-up of Weaning Food Safety and Hygiene Intervention in the Gambia. £32,500.

2017. ESRC Impact Acceleration Account (IAA): 2017-2018. Development of the manual for the Weaning Food Safety and Hygiene Intervention in the Gambia and stakeholder engagement. £22,000.

2016. EU Cost Action: Preparatory Phase funding for Danubius-RI: pan-European distributed research infrastructure on river – sea systems: P-I: 140,000 Euros.

2015. NERC: FENAC/2014/05/005: Colloidal organic matter in an urban river: novel insights into storm flow dynamics and trace metal transport. P-I. ~£20,000.

2013. Knowledge Transfer Partnership. Development of new water quality sensor, with RS Hydro, Bromsgrove: £160,000: (8% of time) (KTP009263) (£130,000 funding provided from EPSRC / NERC).

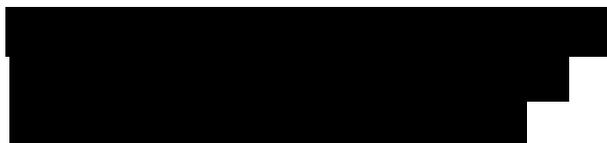
2013. EU Cost Action: DANube macroregion: Capacity building and Excellence in River Systems (basin, delta and sea) £35,000 (sub-contract from GeoEcoMar, Romania; U. Stirling) of total 1M Euros award (EU ref: 603805)

### **Selected Publications:**

- Croghan, D, AF van Loon, JP Sadler, **C Bradley**, & DM Hannah. 2019. Prediction of river temperature surges is dependent on precipitation method. **Hydrol. Proc.** 33: 144-159 doi: 10.1002/hyp.13317.
- Khamis, K, **C Bradley** & DM Hannah. 2018. Understanding dissolved organic matter dynamics in urban catchments: insights from in-situ fluorescence sensor technology. **Wiley Interdisciplinary Reviews** 5 (1) e1259; doi: 10.1002/wat2.1259.
- Khamis, K, **C. Bradley**, R. Stevens, DM Hannah. 2017. Continuous field estimation of dissolved organic carbon concentration and biochemical oxygen demand using dual-wavelength fluorescence, turbidity and temperature. **Hydrological Processes**, 31: 540-555. doi: 10.1002/hyp11040.
- Blaen, PJ, K. Khamis, CE. Lloyd, **C Bradley**, DM Hannah, S Krause. 2016. Real-time monitoring of nutrients and dissolved organic matter in rivers: capturing event dynamics, technological opportunities and future directions. **Science of the Total Environment**. 569, 647-660. doi:10.1016/j.scitotenv.2016.06.116
- Chapman, DV, **C. Bradley**, DM. Oliver, B. Horvath, T. Hein, J. Kováca, B. Trásy, P. Tanos, G. Várbió, IG Hatvani & I Liska. 2016. Progress in water quality monitoring and management in large rivers and catchments, with specific reference to the Danube River. **Environmental Science & Policy**. 64: 141-154. doi: 10.1016/j.envsci.2016.06.015
- Hamilton RL, M Trimmer, **C. Bradley** & G Pinay. 2016. Deforestation for oil palm alters the fundamental balance of the soil N cycle. **Soil Biology & Biochemistry** 95: 223-232. doi:10.1016/j.soilbio.2016.01.001
- Harun, S., A. Baker, **C. Bradley** & G. Pinay. 2016. Spatial and seasonal variations in the composition of dissolved organic matter in a tropical catchment: the Lower Kinabatangan River, Sabah, Malaysia. **Environmental Science: Processes & Impacts** 18: 137-150 DOI: 10.1039/C5EM00462D
- Habersack, H., T. Hein, A. Stanica, I. Liska, R. Mair, E. Jäger, C. Hauer & **C. Bradley**. 2016. The challenges of river basin management: current status and future prospects of the River Danube from an engineering perspective. **Science of the Total Environment** 543 (A): 828-845. doi: dx.doi.org/10.1016/j.scitotenv.2015.10.123
- Kettridge, N., **C. Bradley**, DM. Hannah & S. Krause. 2016. Challenging hydrological theory and practice. **Hydrology Research**, 47, 3, 543-544.
- Harun, S., A. Baker, **C. Bradley**, I. Boomer, E. Hamilton & GE Pinay. 2015. Characterisation of dissolved organic matter in the lower Kinabatangan River, Sabah, Malaysia. **Hydrology Research** 46 (3): 411-428 [IF: 1.1] doi:10.2166/nh.2014.196
- Khamis, K, J.P.R. Sorensen, **C. Bradley**, D.M. Hannah, D.J. Lapworth, & R. Stevens. 2015. In-situ tryptophan-like fluorometers: assessing turbidity and temperature effects for freshwater applications. **Environmental Science Processes and Impacts** 17: 740-752. doi: 10.1039/C5EM00030K
- Baker, A. **C. Bradley** & S.J. Pippis. 2013. Hydrological modelling of stalagmite  $\delta^{18}\text{O}$  response to glacial to inter-glacial transitions. **Geophysical Research Letters** 40, 12, 3207-3212 doi: 10.1002/grl.50555.
- Brown, AG., **C. Bradley**, TR. Grapes & I. Boomer. 2011. Hydrological assessment of Star Carr and the Hertford Catchment, Yorkshire. **Journal of Wetland Archaeology**, 11, 36-55.

## PROFESSOR DAVID JACQUES, FSA - CURRICULUM VITAE

ADDRESS  
TELEPHONE  
E.MAIL



### ACADEMIC and TEACHING

2013 - Professorial Research Fellow in Archaeology, University of Buckingham (Humanities Research Institute). Teaching – PhD, MPhil, MA and Associate students

2013 - Tutor in Archaeology (ICE), University of Cambridge. Teaching – undergraduates and non graduates.

2001 - Associate Lecturer, Open University (History of the English Language, Classics/Archaeology). Teaching second year undergraduates.

### DEGREES

	<u>University</u> <u>Degree</u>	<u>Subject</u>
1999	Cambridge MPhil	Archaeology
1989	Sussex PGCE	English
1986	Middlesex BA (Hons)	English language and Literature

### AWARDS

- 2016 Professorial Research Fellowship (University of Buckingham)
- 2013 Elected Fellow Society of Antiquaries (FSA).
- 2010 Open University Tutor of the Year Award.
- 1997 Fulbright Teaching Scholarship.

## PRIZES, HONOURS and MARKERS of ESTEEM

- 2019 - National Geographic commission TV documentary on the impact Blick Mead has had on understanding the establishment of the early Stonehenge landscape.
- 2018 - Blick Mead Project awarded *Current Archaeology's* 'Research Project of the Year Award 2018'.
- 2018-16 - Awarded Santander Research and Mobility grants (Blick Mead).
- 2017 - Awarded Dennison Grant (Blick Mead).
- 2013 – Awarded major £150,000 grant from Frick Foundation (Blick Mead field work and post excavation expenses).
- 2011- Invited by Fulbright Commission to meet President Barack Obama due to being co-awarded 'Outstanding UK Fulbright Alumni of the last 60 years'.
- 2009- Land Registry Research Grant (Blick Mead).
- 2005-present Project Director for Blick Mead Project.
- 2005-6 - Set up a charity to build a school library in Gogasheni, Republic of Georgia, and connect it to the national grid. BP became interested in the idea of spreading library provision across Georgia and subsequently invested \$12 million in the Georgian education system in 2006-08. The bulk of the provision was focused on creating school libraries in rural areas close to the TNK pipeline and connecting them to power supplies.
- 2005 - Education Consultant for the World Bank in Republic of Georgia.
- 2004-2007 - Awarded Open University Research Associateship in Archaeology.
- 1999 - Awarded Wolfson College Research Prize, University of Cambridge.
- 1999 - Awarded Dorothy Garrod Grant, Archaeology Department, University of Cambridge.

## PRESENT GRANT APPLICATIONS

2019 - Heritage Lottery Fund grant application for £300,000 for Blick Mead Project (Heritage at Risk Metric).

## PUBLICATIONS

## MONOGRAPH

Jacques, D. Davis, G (Eds) 2019. 'Stonehenge: A Landscape Through Time', Oxford: Peter Lang.

Jacques, D. Ridgeway, V. Phillips, T (Eds) 2017. 'Blick Mead: Exploring the 'first place' in the Stonehenge landscape', Oxford: Peter Lang.

## BOOK CHAPTERS

Jacques, D *et al.* 2019. 'About Time for the Mesolithic near Stonehenge: New Perspectives from Trench 24 at Blick Mead, Vespasian's Camp, Amesbury', in Boric, D Antonovic *et al.*, *Holocene Foragers in Europe and Beyond* (papers presented at the 9th international conference on the Mesolithic in Europe MESO 2015), Oxbow Books, forthcoming 2019.

Jacques, D. 2017. 'The Blick Mead Mesolithic Project', in Rowley-Conwy, P; Halstead, P and Serjeantson, D (Eds) 'Bone Man: - Hunter, Fisherman, Fowler and Zooarchaeologist', Oxford: Oxbow. 185-199

## ARTICLES – Journals and magazines

Rogers B, Montgomery J, Jacques D *et al.* 2018 "*Isotopic analysis of the Blick Mead dog: A proxy for the dietary reconstruction and mobility of Mesolithic hunter-gatherers*", *Journal of Archaeological Science* 24, 712-720.

Jacques, D, Lyons, T and Phillips T. 2017 "Blick Mead: Exploring the 'first place' in the Stonehenge landscape", *Current Archaeology* 324, 18-23

Jacques, D and Phillips, T. 2014, "*Mesolithic Homebase Discovered at Stonehenge*", *WAHN* 107 7-27

Jacques, D, Phillips, T and Lyons, T. 2014, "Return to Blick Mead", *Current Archaeology* 293, 25-29.

Jacques, D; Phillips, T and Lyons, T. 2012, 'Vespasian's Camp: the Cradle of Stonehenge?', *Current Archaeology* 271, 28-33.

Jacques, D; Phillips, T and Clarke M. 2010, 'A Reassessment of the importance of Vespasians Camp in the Stonehenge landscape', *PAST* 66, 11-14.

## ONLINE ARTICLES

Jacques, D; 'Early Britons: Have we underestimated our ancestors?' 2015, *BBC* <http://www.bbc.co.uk/news/science-environment-33963372>

Rogers, B. *et al* 'Stable Isotope Analysis of the Blick Mead Dog: A Proxy for the Dietary Reconstruction of Mesolithic Hunter-Gatherers' 2015.  
<https://www.dur.ac.uk/resources/archaeology/pdfs/BlickMeadDogToothPoster.pdf>

## CURRENT ROLES AND RESEARCH

I am the director of the University of Buckingham's Blick Mead Archaeology Project. Blick Mead is situated C. 2.3 km from Stonehenge and since 2013 the project has discovered a Mesolithic residential and occupation area with the longest continuous sequence of radio carbon dates of any archaeological site in North Western Europe (7960-4041 cal BC) and the oldest dwelling found in the World Heritage Site. The radiocarbon dates tie Blick Mead to the construction of the earliest monuments at Stonehenge in the 9-7<sup>th</sup> millennia BC, as well as to the later establishment of the landscape's ritual character in the early Neolithic (c. 4000 BC) and late Neolithic (c.2500 BC). The data set from the site challenges existing paradigms about the reasons for the creation of the Stonehenge landscape (e.g, Parker-Pearson 2015, 43 - "*Blick Mead may have been ..somewhere that people returned to as a place of origin. Over the centuries and millennia it was used, this place would have become the centre of a network of paths leading towards it from many parts of southern Britain. Just as all roads led to Rome, so these paths led to the future site of Stonehenge.*").

## Estimating flint artefacts in the WHS ploughsoil

1. There are three areas within the WHS where the DAMS (Detailed Archaeological Mitigation Strategy) involves machining off ploughsoil containing prehistoric artefacts:

Western Portal (c.57,300 square metres)

Eastern Portal (c.39,750 square metres)

Rollestone Corner (c.6,250 square metres)

2. Evaluation of ploughsoil at a 1% sample has revealed variable densities in each area and within each area. Results are published as maps of 1m x 1m test pits and artefact numbers, initially in a presentation to the Scientific Committee on 18 December 2018 and as *Stage 4 – Archaeological Evaluations: Review of Ploughzone Lithics and Tree-hollow Distributions* on 17 May 2019.

3. No absolute numbers are given in these documents. I have had to estimate the numbers of flints from the sizes of the bubble plots for each test pit (*Archaeological Evaluations* Figures 5-11 to 5-16), choosing the average number for each category (e.g., 0, <5 [2.5], 5-10 [7.5], 11-15 [13], >15 [17.5]). The upper limit of >15 (given in the *Archaeological Evaluations* document of 17 May) compresses a lot of variation, since the 18 December document shows that some of the test pits in the Western Portal area produced 20-30, 30-40 and >40 flints; as a result, I have merged the two data sets to get an impression of the overall totals of flints recovered by test-pitting.

4. I have added up the numbers of test pits in each of the three Proposed Archaeological Mitigation Areas within the WHS. I have then added the numbers of these test pits in each flint-number category (0, <5, 5-10...>40). This allows me to estimate the approximate number of flints recovered on the 1% sample within each Proposed Archaeological Mitigation Area. That total number of flints can then be divided by the total number of test pits within each of the three Proposed Archaeological Mitigation Areas to give average densities per square metre for each of these. Average density can then be multiplied by the number of square metres in each Proposed Archaeological Mitigation Area to provide an estimated total of flint artefacts within the ploughsoil.

5. Calculations of lithics in the ploughsoil:

Western Portal

0	48 test pits	0
<5	260 test pits	650 flints
5-10	56 test pits	420 flints
11-15	12 test pits	150 flints
15-30	15 test pits	375 flints
31-40	25 test pits	875 flints
>40	9 test pits	380 flints
Total	425 test pits	2850 flints

Average density 6.7 per sq m x 57,300sq m = 383,910

Rounded down to 381,000 to allow for the prior recovery of the 1% sample of c.2850 flints.

Eastern Portal

0	4 test pits	0
<5	112 test pits	280 flints
5-10	16 test pits	120 flints
11-15	9 test pits	112 flints
>15	1 test pit	17 flints

Total 146 test pits 529 flints  
Average density 3.6 per sq m x 39,750sq m = 143,100  
Rounded down to 142,000 to allow for the prior recovery of the 1% sample of c.529 flints.

Rollestone Corner  
0 8 test pits 0  
<5 39 test pits 95 flints  
5-10 11 test pits 80 flints  
11-15 2 test pits 25 flints  
Total 58 test pits 200 flints

Average density 3.4 per sq m x 6,250sq m = 21,250  
Rounded down to 21,000 to allow for the prior recovery of the 1% sample of c.200 flints.

**The estimated total of flint artefacts in the ploughsoil within the three Proposed Archaeological Mitigation Areas is 544,000.**

6. The *Archaeological Evaluations* document of 20 May sets out a proposal to increase the ploughsoil test-pit sample in five localities, three of them within the Western Portal. The aim is to raise the sample from the current 1% to 4% (test pits at every 5m). These are proposed for three of the potentially denser parts of the scatter, where numbers per sq m are likely to be between 15 and 50. With a possible average of 33 flints per sq m, it might require a further 1,300 test pits (covering a total area of 10,800 sq m – almost 20% of the area of the Western Portal PAMA) simply to lower the number of unretrieved and unrecorded flints to c.500,000.

7. The *Archaeological Evaluations* document further specifies that test pit sampling could be increased in any of the five localities to 100%, if decided on during works through consultation with HMAG/WCAS. Of course, this would have to be a considerable area to make a meaningful reduction in the numbers of unretrieved and unrecorded flints below 500,000. It is simply not credible that the current proposed strategy will allow the vast majority of the half-million lithics to be recovered and studied.

8. Of the half a million lithics, the vast majority are likely to be flakes and other worked items of little intrinsic importance. Yet 100% sampling is necessary for any and all areas facing destruction for three main reasons:

- a) The value of undiagnostic flakes and other such material lies principally in providing fine-detailed spatial plots of scatter patterns to potentially identify activity areas (middens, likely house areas etc.).
- b) Previous research on flint distributions in the WHS suggests that c.1.4% (c.7,000 items) of the half-million flints would consist of diagnostic and significant artefacts such as arrowheads, scrapers and other tools. It is important to recover as many of these as possible, to provide evidence of dating and activity patterning in different parts of the PAMAs.
- c) Thirdly, entire phases of occupation (e.g. Mesolithic, Early Neolithic, Late Neolithic etc.) may be identifiable only through artefacts in the ploughsoil; some phases may not be represented by a single sub-ploughsoil pit or feature.

These are the three main reasons why researchers within the Stonehenge & Avebury WHS routinely recover ploughsoil lithics as a 100% sample.

Mike Parker Pearson

21 May 2019

## Michael Parker Pearson FBA FSA FSA(Scot) MCifA PhD

### Appointments

2012-present	Professor, Institute of Archaeology, University College London
2005-2012	Professor, Department of Archaeology, University of Sheffield
1990-2012	Lecturer, Department of Archaeology, University of Sheffield
1984-1990	Inspector of Ancient Monuments, English Heritage

### Qualifications

1985 PhD in Archaeology, King's College, Cambridge

### Recent awards and prizes

2017 UK Archaeological Research Project of the Year  
2016 Samuel H. Kress Alumnus Lecturer for the Archaeological Institute of America  
2011-2012 Samuel H. Kress Lecturer in Ancient Art for the Archaeological Institute of America  
2010 UK Archaeologist of the Year *and* Archaeological Research Project of the Year

### Research grants

Since 1991 I have obtained £2,730,087 as leader of numerous archaeological projects, funded by grants from the Arts & Humanities Research Council (3), British Academy/Leverhulme (7), British Institute in Eastern Africa (1), Google (1), National Geographic Society (9), National Museum of Wales (1), Robert Kiln Trust (1), Natural Environment Research Council (5), Nuffield Foundation (1), Royal Archaeological Institute (6), Society of Antiquaries of London (9), the Prehistoric Society (2) and Society of Antiquaries of Scotland (1). The major grants are:

Stones of Stonehenge	2012-2019 National Geographic & other funders	£144,538
Feeding Stonehenge	2010-2013 Arts & Humanities Research Council	£785,518
Stonehenge Riverside	2006-2010 Arts & Humanities Research Council	£498,241
Beaker People Project	2005-2009 Arts & Humanities Research Council	£531,079
Outer Hebrides settlement	1991-2012 Historic Scotland	£517,901
Madagascar Androy project	1991-2001 National Geographic & other funders	£109,238

### Esteem

Fellow of the British Academy (since 2015)  
Keynote speaker and invited lecturer at many international venues and conferences 2000-2019.  
Arthur Holly Compton Memorial Lecturer, Washington University St. Louis, spring 2013  
Dalrymple Lecturer, University of Glasgow, autumn 2013  
Visiting Professor, University of Aarhus, spring 2012  
Prehistoric Society vice-president (2006-2009) and Council member (1999-2005)  
Member of A303 Stonehenge Scientific Committee (2017-2019)  
Member of English Heritage's Archaeological Advisory Panel on Stonehenge 2005-2012  
Fellow of the Society of Antiquaries of London (since 1991) and of Scotland (since 1996)  
Member of the Chartered Institute for Archaeologists since 1989

**Publications** 23 books, 144 peer-reviewed scientific papers, 70 other published articles.

My Stonehenge research has generated 5 books and over 70 scientific papers, including:

Parker Pearson, M., Sheridan, A., Jay, M., Chamberlain, A., Richards, M.P and Evans, J. (eds) 2019. *The Beaker People: isotopes, mobility and diet in prehistoric Britain*. Prehistoric Society monograph. Oxford: Oxbow.

Parker Pearson, M. with Pollard, J., Richards, C., Thomas, J. and Welham, K. 2015. *Stonehenge: making sense of a prehistoric mystery*. York: CBA.

Parker Pearson, M. 2012. *Stonehenge: exploring the greatest Stone Age mystery*. London: Simon & Schuster.

Parker Pearson, M., Pollard, J., Richards, C., Welham, K. Casswell, C., French, C., Shaw, D., Simmons, E., Stanford, A., Bevins, R.E. and Ixer, R.A. 2019. Megalithic quarries for Stonehenge's bluestones. *Antiquity* 93: 45-62.





Worked flint distributions in ploughsoil (from Richards 1990. Stonehenge Environs Project. English Heritage)

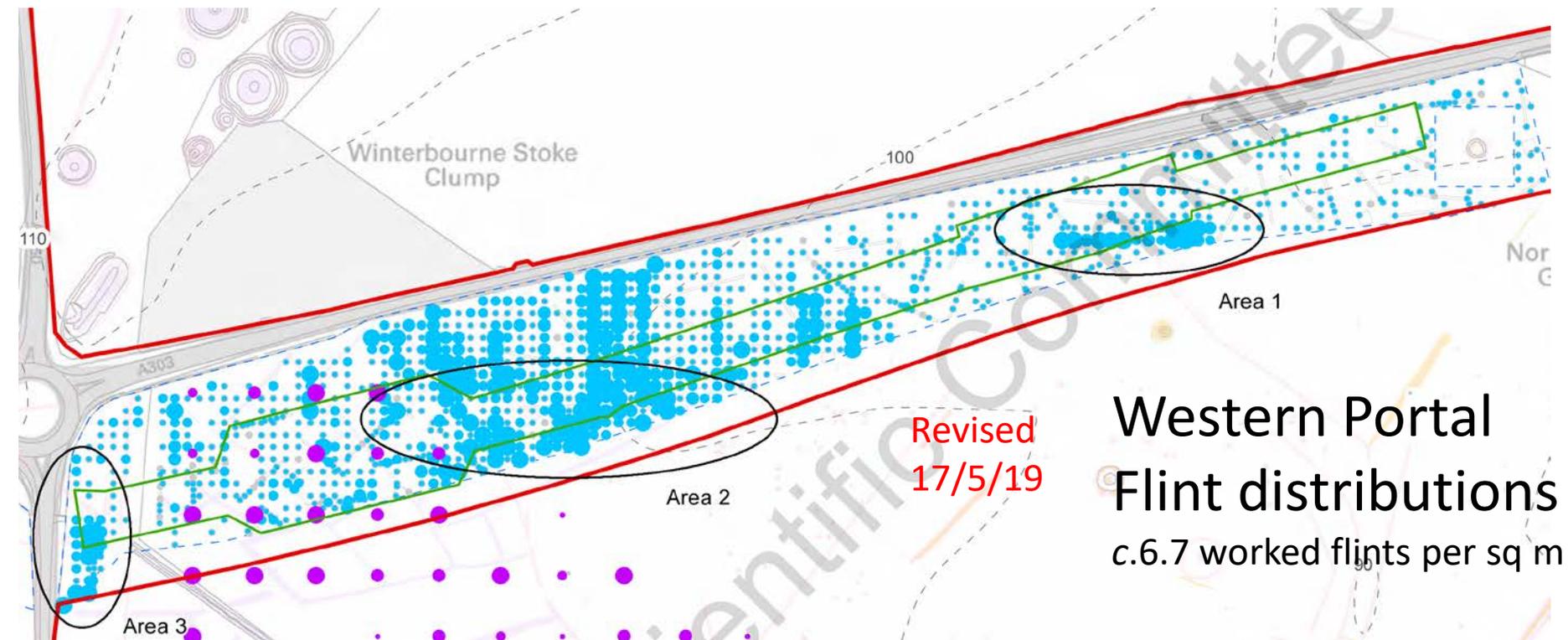
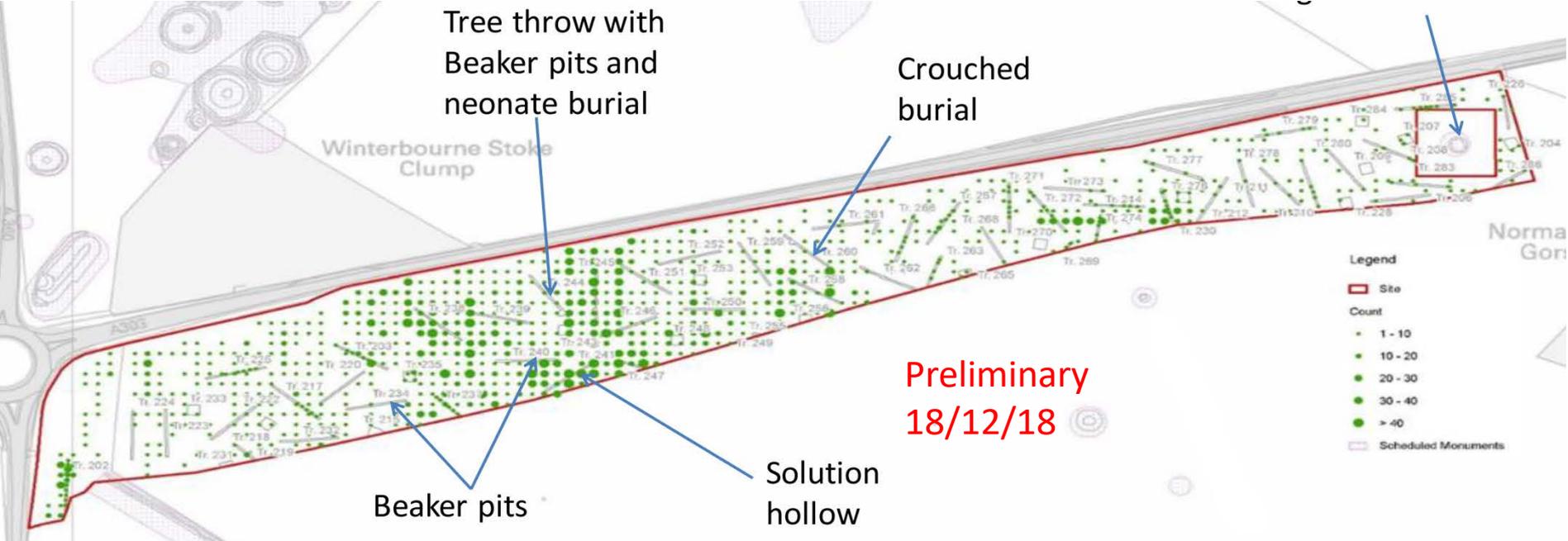
# What's wrong with the Draft Archaeological Mitigation Strategy?

Over 90% of Neolithic-Early Bronze Age remains are in the ploughsoil (rather than in features below it) in the WHS – we have known this for more than 30 years

For more than 10 years, archaeologists researching within the WHS have recovered those finds by 100% retrieval by hand-digging and sieving the ploughsoil to recover finds and to plot their spatial distributions (to reveal patterns of discard and settlement activity)

The A303 Stonehenge Scientific Committee has recommended that equivalent standards are applied for archaeologists digging within the WHS, whether as universities or commercial contractors – ploughsoil test-pitting (at 1% sample) was carried out at the Committee's request to evaluate artefact distributions and densities but the DAMS does not prescribe 100% sampling, as would be in line with WHS research standards

Over **half a million** worked flints and other prehistoric artefacts within the ploughsoil will be **bulldozed without record or recovery** by the proposed 'mitigation' strategy within the WHS – this is an unacceptable level of damage to the resource and loss of information about Stonehenge's prehistoric past



# Western Portal

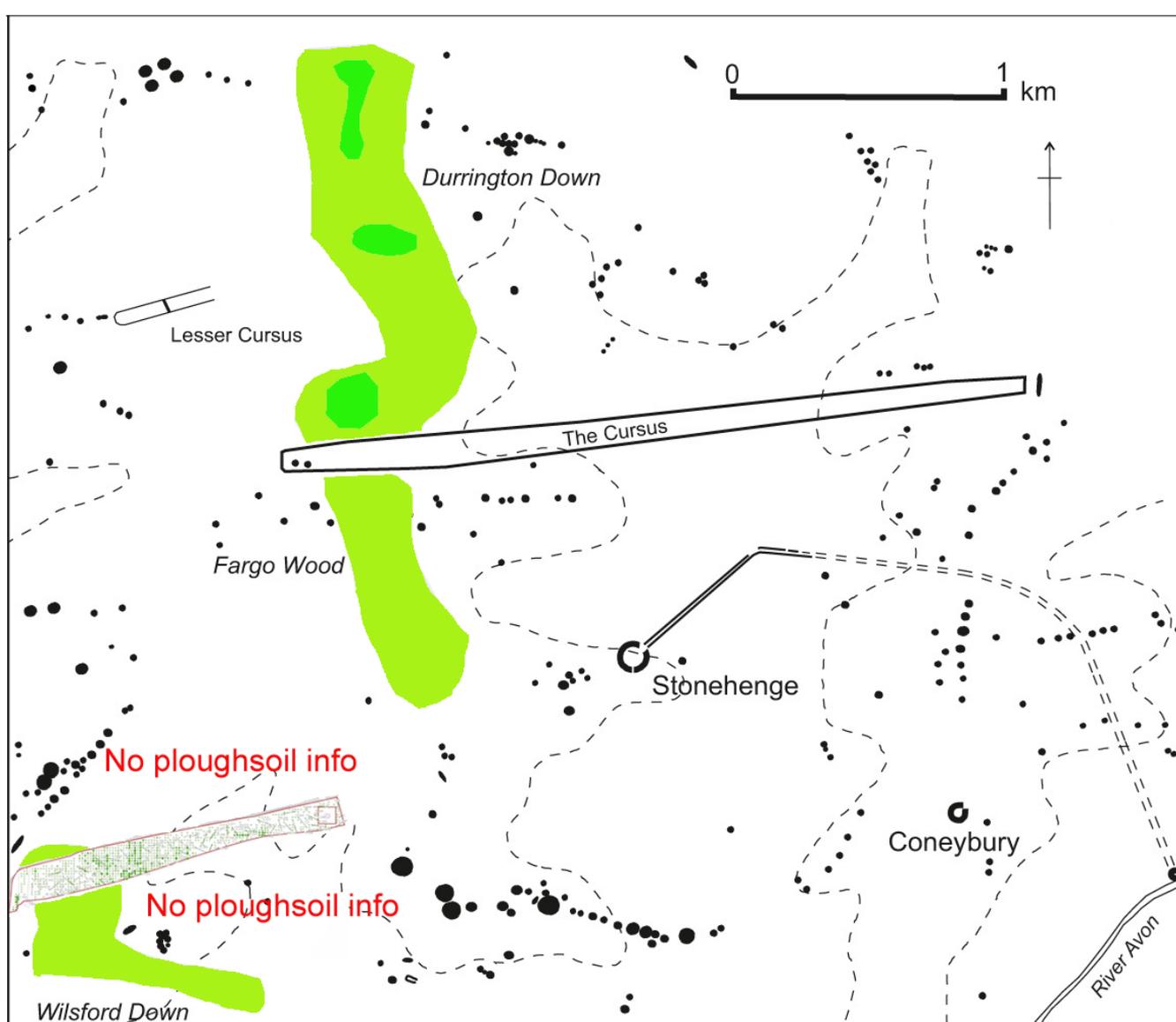
Flint densities are unusually high in certain parts of the evaluation corridor, compared to densities from test pits elsewhere within the WHS

Some test pits produced over 30 worked flints per square metre – this is unusually high, comparable to densities in the known Neolithic settlement beneath Durrington Walls

With associated Beaker-period finds, the Western Portal scatter is likely to be a Copper Age-Early Bronze Age settlement of the Beaker people c.2450-1800 BC

The sharp contours in varying flint densities suggest that spatial dislocation by ploughing has not been severe, enabling high-definition 2-D mapping from 100% recovery to potentially reveal distributions relating to middens/rubbish heaps, house sites and spatial organisation

Site name	<i>West Amesbury</i>	<i>The Cuckoo Stone</i>	<i>Durrington Walls Southern Entrance</i>	<i>Fargo Plantation</i>	<i>Western end of the Greater Cursus</i>	<i>Eastern end of the Greater Cursus</i>	<i>The Northern Avenue Extension</i>	<i>The Palisade Field and Stonehenge Down Palisade</i>	<i>South of Woodhenge</i>
Worked flint density per m <sup>2</sup>	33.66	22.05	56.75	5.79	6.56	9.17	10.59	12.35	16.28



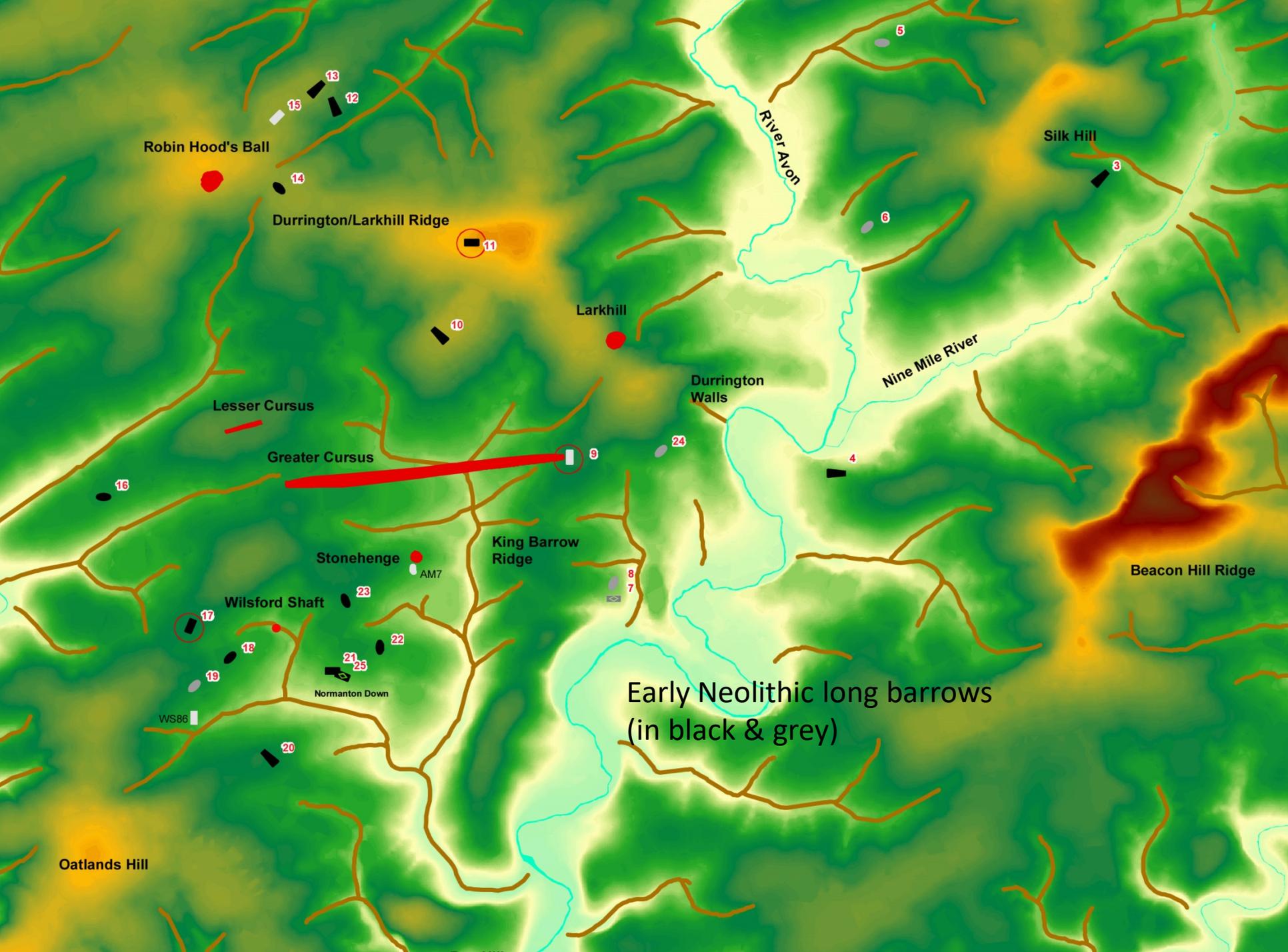
Part of potentially the largest Beaker settlement cluster in Europe

Same period as constructions of Stonehenge:  
**Stage 3** 2480-2280 BC  
**Stage 4** 2280-2020 BC

**What was it?**  
 Stonehenge builders' settlement?  
 Barrow builders' camps?  
 Ceremonial gathering places?

From Pollard *et al.* 2017 Stonehenge in the age of first metals. *Neolithic Europe*. Oxbow.

We need to preserve it or no one will ever be able to answer the above questions. If the project goes ahead, this will not be possible.

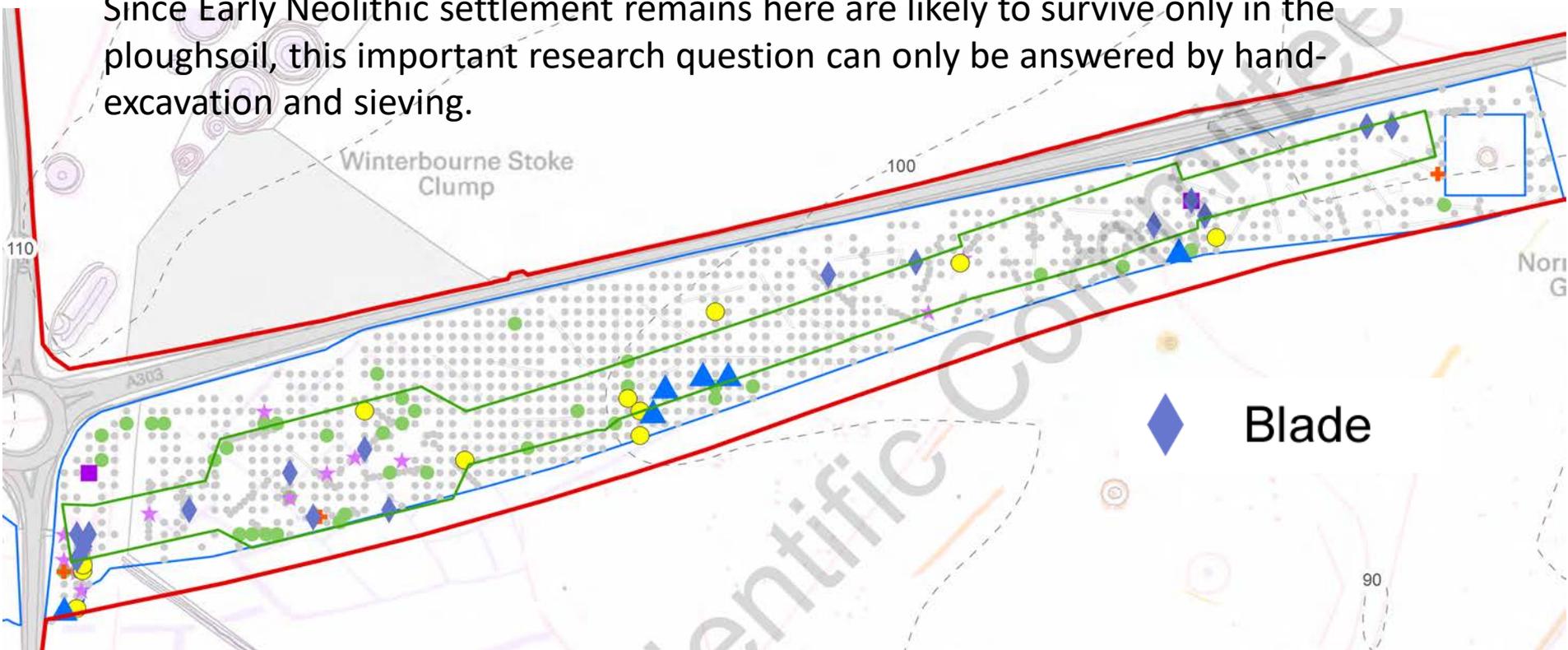


# Western Portal

At least 9 Early Neolithic long barrows are known in this locale, making it the densest concentration of these burial mounds in Britain

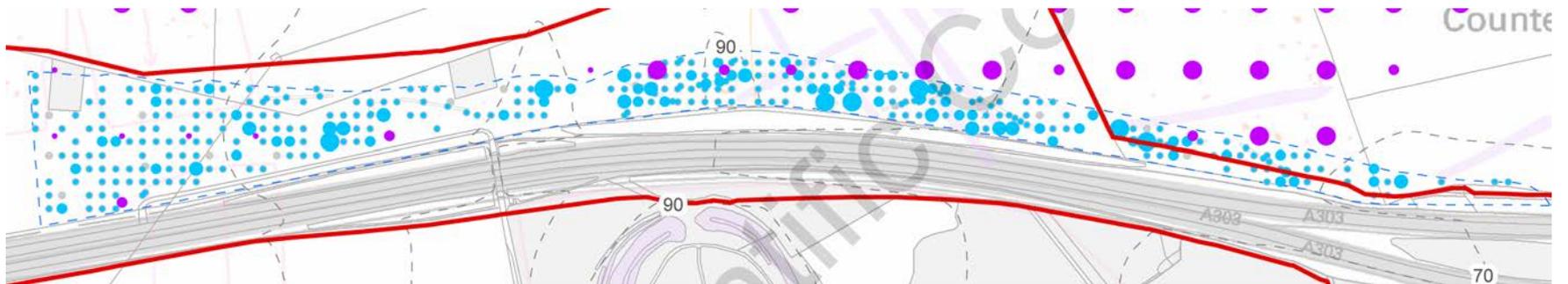
Suspected Early Neolithic flint blades from 1% sample sieving in this area raise the possibility of Early Neolithic activity around the tombs – were Early Neolithic people also living in this locality? Or were these the result of sporadic visits?

Since Early Neolithic settlement remains here are likely to survive only in the ploughsoil, this important research question can only be answered by hand-excavation and sieving.





Preliminary  
18/12/18

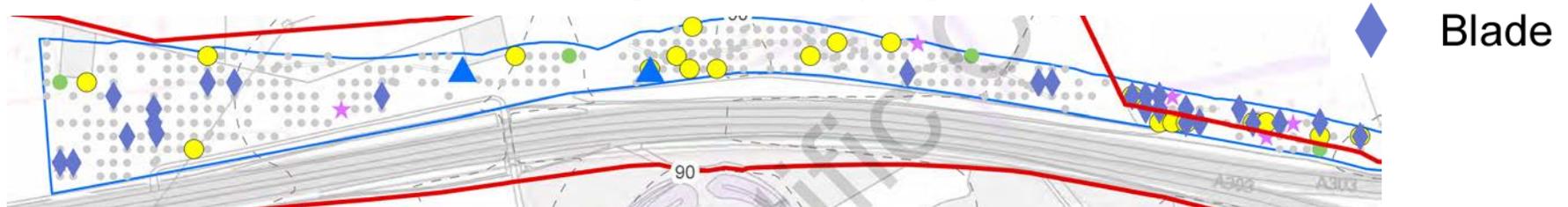


Revised  
17/5/19

Eastern Portal  
Flint distributions  
c.3.6 worked flints per sq m

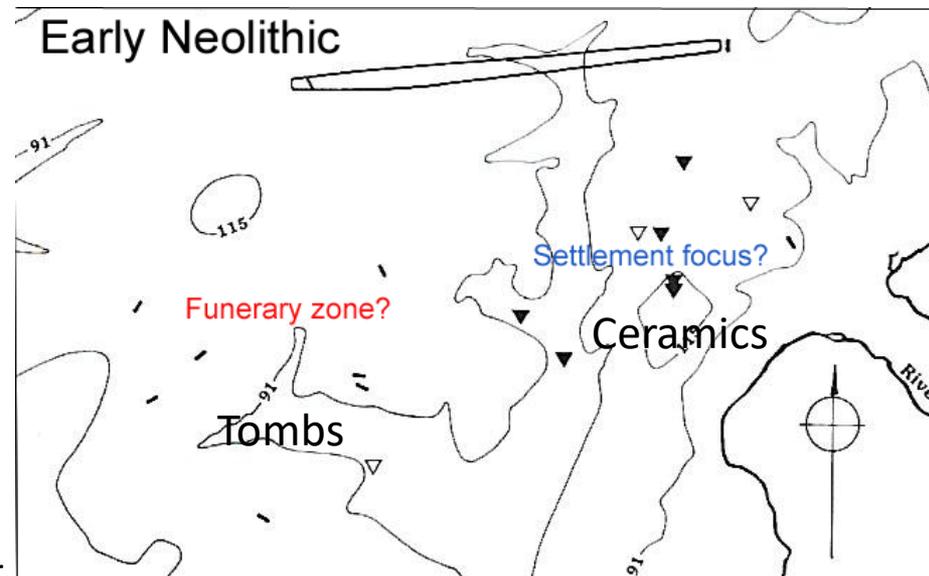
# Eastern Portal

Early Neolithic flintwork has been found in the ploughsoil particularly in the western half of this corridor, during the 1% sampling for evaluation



Since this is an area with few long barrows, was it more of a settlement area rather than a funerary zone like the Western Portal area? Or was there no difference in flint-related activities between the two areas? Total recovery (100% sieving) of ploughsoil remains can help answer this question

Bulldozing the ploughsoil will destroy the evidence without record



From Richards 1990. *Stonehenge Environs Project*. English Heritage.

Excavation of all sub-ploughsoil features within the WHS should be 100%:  
Pits, ditches, postholes, stakeholes, solution hollows (to the pre-Holocene levels)

This includes tree hollows (proposed to be sampled at 12.5% - should be 100%)

An important research question is the extent to which, and how and when tree hollows were used for deposition in the Neolithic.

Are there differences in Early Neolithic use of tree hollows between the Western Portal and the Eastern Portal? Was woodland use different in the funerary zones? For example, were Early Neolithic ceramic depositions in hollows confined to the eastern part of the WHS?



A tree hollow within the eastern part of the WHS, containing Early Neolithic ceramics, flints, charcoal & animal bones

# Summary

Most of the WHS's prehistoric remains are in the ploughsoil, preserving spatial information about a long-term palimpsest of settlement and other activities in relation to Stonehenge and surrounding monuments

Archaeological researchers in the WHS routinely sieve and hand-excavate ploughsoil as a 100% sample in order to recover these remains – the same rules should apply to commercial contractors

The DAMS makes no such arrangements. It would cause over half a million prehistoric flints and other artefacts to be bulldozed and lost without record

The DAMS also fails, as a result, to address two major research questions:

1. Densities of flints outside the Western Portal suggest the existence of a large Beaker-period settlement here, potentially a campsite for the builders of Stonehenge Stages 3 and/or 4. It is potentially part of an exceptionally large Beaker-period settlement cluster, nearly all of which survives only in the ploughsoil
2. Suspected Early Neolithic flint distributions in ploughsoil outside Western and Eastern Portals raise key research questions about activity among the long barrows and away from them – a place of the ancestors and a place of the living?

Finally, nothing less than 100% excavation of **all** WHS sub-ploughsoil features is acceptable.