

A303 Amesbury to Berwick Down

Secretary of State's Re-determination of the Application for Development Consent

Representation by the Consortium of Stonehenge Experts

1. The Consortium of Stonehenge Experts is a group of 22 senior scholars who have carried out internationally recognised research within the Stonehenge WHS within the last ten years or more. Most of us are employed by UK universities; many were employees of various universities or of English Heritage when doing that research. Seven of us are independent members of the Scientific Committee of the A303 Stonehenge – Amesbury to Berwick Down scheme.

2. The Consortium responded to the public consultation on 23 April 2018 and provided evidence to the Examining Authority on 5–6 July 2019, followed by a written response on 5 August 2019 to the Authority's request of 26 July 2019 for further information. The Consortium also gave further evidence at the Public Hearing on 21 August 2019. We trust that all of these representations will be taken into account in the redetermination process.

3.1. Our submission reports largely new information pertinent to the specific issues addressed by the inquiry, those fixed long ago when assessment started of this road proposal. That is: as sound archaeological knowledge changes and strengthens, the facts relevant to the assessment change; what was a fair or reasonable deduction from the facts even a very few years ago is no longer fair or reasonable now that the facts have radically changed. It must also change.

3.2. Alongside changing facts are also changing cultural values. This is very striking in relation to Stonehenge. Noticed and named in medieval times, the central stone setting – only 30 metres across – was for centuries the totality of what “Stonehenge” was understood to be. Then, and increasingly rapidly in recent decades and very recent years, has come the recognition that Stonehenge is a far larger entity than the stones alone (Chippindale 2004).

3.3. This broader vision is nowadays the view not just of specialist archaeologists, but of a wider public. Strong proof of this is evident in the British Museum's current major exhibition, *The World of Stonehenge*. The British Museum describes it as revealing the “secrets of Stonehenge, shining a light on its purpose, cultural power and the people that created it” not through new details of those central stones, but by its broader landscape and by items from right across Europe – from axes originating in the North Italian Alps, to the world's oldest surviving map of the stars. The exhibition has had a splendid reception. The *Guardian*'s cultural review (Jones 2022) ranked it with 5 stars of a possible 5 (which it does not often do), saying: “*The World of Stonehenge* is as magical as a great barrow full of glinting treasure. It hooks you with a wooden trident (two of these are on display) and plunges you into primal waters of the imagination. It is a knockout epic.”

3.4. Rather than addressing only the striking changes in the facts, therefore, the present review and re-assessment needs also to understand and reflect this striking change in cultural values in which the broader landscape becomes of radically greater importance in relation to the central stones.

4. Assessment of risk to harm of heritage assets. In the first decision the Secretary of State failed to recognize that individual heritage assets (alongside the destruction to the WHS) would be subject to physical destruction. Recently available evidence underscores the importance of these assets and demonstrates that they are demonstrably of equivalent significance to Scheduled Ancient Monuments. Therefore, as they are (in whole or in part) to be physically destroyed, their loss can only be considered as substantial harm.

5. Substantial harm to assets. Four heritage assets within the WHS are at risk of substantial harm:

- (a) remains of a large Beaker-period settlement with burials;
- (b) remains of a probable Early Neolithic settlement west of the Beaker-period settlement;
- (c) remains of a probable Early Neolithic settlement at the eastern portal;
- (d) remains of a Mesolithic settlement at Blick Mead.

6.1 Remains of a large Beaker-period settlement with burials. The Western Portal surface route cuts through the southern part of a very substantial Beaker-period site (Copper Age and Early Bronze Age *c.* 2450–1850 BC) west of Stonehenge, extending southwards from north of the Greater Cursus (Pollard *et al.* 2017: fig. 18.8a). Its northern area is *c.* 1,400m N–S by *c.* 300m E–W and its southern area is *c.* 800m E–W by *c.* 300m N–S (centred at 4104 1414). The northern area lies just outside of National Highways’ Study Area but the southern area lies directly on the path of the road cutting proposed outside the western portal. The Beaker-period settlement extends eastwards to the Beaker-cemetery barrow at Wilsford 1 (Heritage Asset 2018; Leivers and Moore 2008: 25–30). Moreover, a secondary Beaker burial inserted in the Wilsford 34 long barrow (Heritage Asset 2017) is located just to the south, at the edge of the known extent of the Beaker settlement area (and may lie within it). Details of the extent, character and date of both northern and southern areas were published by Prof. Joshua Pollard and colleagues in 2017 (see Figures 1 and 2 below; Pollard *et al.* 2017), based on previous research on surface distributions of prehistoric pottery and lithics (Richards 1990: figs 154c, 159) and geophysical survey and topsoil sieving (Gaffney *et al.* 2012; Parker Pearson *et al.* 2020: 59–61, 192–209).

6.2. Further confirmation of the extent, character and date of the substantial heritage asset of the southern area was obtained for National Highways by Wessex Archaeology’s 1% topsoil sieving on the proposed road line, together with their excavation of evaluation trenches and geophysical survey. Within the transect where the road line would cut through this heritage asset, topsoil sieving has recovered *c.* 2,850 artefacts of flint and prehistoric pottery (Highways England 2019a: figs 11.46, 11.47). Geophysical survey here for National Highways has identified a dense distribution of magnetic anomalies interpreted as sub-surface features, variously pits, scoops, tree holes and other depressions (Wessex Archaeology 2017a, b, c; 2018). Equivalent extensive geophysical features in the eastern part of the WHS (Linford *et al.* 2015: figs 4,12) are confirmed by excavation (Roberts *et al.* 2020) to include Neolithic pits and a human burial. Machine-digging of evaluation trenches on a 2% sample across the Beaker-period settlement has revealed these sub-surface features to be densely distributed (on average, 2–4 in every 10m x 10m) and for them to include pits, postholes, human burials and natural features (Highways England 2019a: figs 11.14–11.44). Most of the latter were left unexcavated but excavations elsewhere in the WHS show that many of these natural features may have acted as natural traps or depositional contexts for prehistoric artefacts (*e.g.* Parker Pearson *et al.* 2020: 88–91, 136–61, 225; De Smedt *et al.* in press: Trenches 3, 11, 13, 14, 17, 21).

6.3. The combined archaeological evidence, published between 1990 and 2019, from surface prospection, geophysical analysis, topsoil sieving and evaluation excavations reveals these buried remains to constitute a substantial heritage asset within the WHS: remains of a large Beaker-period settlement with burials. These remains form the southern part of a much larger settlement area with a maximum extent of 2km N–S x 300m E–W, making these the largest known remains of a Beaker-period settlement anywhere in Europe (*cf* Gibson [ed.] 2019).

6.4. At no stage in the assessment process was there recognition by National Highways of this substantial heritage asset. This is despite its being discussed in detail at a meeting of the Scientific Committee and by representations made to the Public Hearing. This is also despite the discovery by Wessex Archaeology during evaluation excavations at the western portal of a crouched Beaker burial with a unique shale cylinder and awl, as well as a Beaker infant burial and multiple Beaker pits and tree-throws with Beaker pottery (National Highways 2021).

6.5. Under current plans for the scheme, an area of *c.* 57,000 sq m will be destroyed within the WHS at and in the approach to the western portal. Despite proposed archaeological mitigation procedures, an estimated 380,000 lithics as well as prehistoric pottery in the ploughsoil would be machined off. Over 80% of an estimated number of *c.* 1700 sub-surface features would be destroyed without excavation. The mitigation strategy falls short of ‘preservation by record’ and would result in substantial harm to this heritage asset.

6.6. This heritage asset can be considered as of national and even international significance, despite plough-degradation of the topsoil which will have displaced artefacts from their original contexts and destroyed shallow features such as house floors. Yet studies of the effect of ploughing on artefacts in the ploughsoil (*e.g.* Hinchliffe and Schadla-Hall 1980; Roper 1976; Lewarch and O’Brien 1981; Ammerman 1985; Haselgrove *et al.* 1985; Schofield 1991; Navazo and Díez 2008) conclude that, on relatively level ground like that of the WHS, these are moved only short distances back and forth by the plough rather than transported substantial distances from their points of origin. Thus the spatial and geographical distribution of artefacts in the ploughsoil is likely to reflect their original spatial patterning to within a metre or two. Full 100% recovery of their distributions by metre squares may provide high-definition information about patterns of discard relating to activities both synchronous and sequential. When compared with the spatial distribution and clustering of pits and other subsoil-cut features, it may be possible to identify from this spatial patterning the locations of lost and ephemeral structures such as houses in order to reconstruct the character and extent of the settlement and its buildings.

6.7. This heritage asset meets all eight of the criteria for designation as a Scheduled Ancient Monument:

- a. the **finds** already made are exceptional, including a Beaker burial with a unique shale artefact (National Highways 2021), and the very dense ploughsoil assemblage (Highways England 2018a). The site’s density is unmatched anywhere in the WHS except for the scheduled sites of Durrington Walls Neolithic settlement and West Amesbury henge);
- b. the **survival** of buried features in pits and tree-throw holes (Highways England 2018a) and shallow hollows (thousands of these latter features have been detected by geophysics across the WHS; they may be preserved patches of undulating buried ground surface or have formed artefact-traps like many of the tree-throw holes);

- c. the significance and rarity of such sites of this **period** (Gibson 1982; 2019). Beaker and Early Bronze Age settlements are much less well known than those of any other period of British prehistory, from the Neolithic to the Iron Age;
- d. the **rarity** of such prehistoric settlements of this size, since the remains of hamlets or villages of this size are otherwise unknown in England for this period (Gibson 2019);
- e. the **diversity** of burials and settlement remains on this site, since the co-presence of Beaker settlement and funerary sites is unique. The Beaker inhabitation area is overlooked by (and indeed may well have extended to) the Beaker cemetery barrow at the north end of the Winterbourne Stoke barrow group (Heritage Asset 2007, Barrow 10; Bax *et al.* 2010), and is inter-visible with the Wilsford 2b Beaker barrow (Heritage Asset 2022) on the high ground at the western end of the Normanton Down barrow group.
- f. the **potential** of this site for providing evidence of the spatial and chronological organisation of activities within this settlement area (by plotting distributions of ploughsoil assemblages; see above);
- g. the site's **fragility and vulnerability** to continued degradation and damaging development. With so much of the site's remains in the ploughsoil, fragile materials such as ceramics are highly susceptible to erosion and all materials are vulnerable to any disturbance of the ground surface;
- h. the site has exceptional **group value** on account of its proximity to Stonehenge and the round barrow cemeteries of Winterbourne Stoke Crossroads and Normanton Down. It is likely to have been contemporary with constructional Stages 3 & 4 at Stonehenge, during the Beaker period and Early Bronze Age (Darvill *et al.* 2012). It may even have been where people lived while building these two stages of Stonehenge. In addition, the site lies close to two of the most significant Early Bronze Age round barrow cemeteries in Britain (Winterbourne Stoke Crossroads and Normanton Down; Colt Hoare 1812; Needham *et al.* 2010) and may also have been where the mourners and barrow-builders lived while burying the dead in these illustrious places.

7.1. Remains of a probable Early Neolithic settlement west of the Beaker-period settlement. The Western Portal surface route cuts through a dense distribution of stone tools and lithics likely to be the remains of an Early Neolithic settlement (*c.* 3800–3400 BC; centred on 4101 1414; Figure 3). Surface finds from this heritage asset include a stone axe fragment (Richards 1990: fig. 157) and flint blades, scrapers, retouched pieces and cores (Highways England 2019b: fig. 5.14). The axe fragment and flint blades are suggestive of a date in the Early Neolithic. This heritage asset is at least 50m N–S by 100m E–W. Most of it falls within the path of the road proposed outside the western portal.

7.2. This heritage asset will be destroyed by the scheme. Archaeological mitigation will achieve only partial recovery of these remains; only the asset's western extremity has been designated for enhanced topsoil sampling (Area 3 in Highways England 2019b: fig. 5.13) but, as with the Beaker-period settlement above, more than 80% of artefacts in the topsoil and 80% of sub-surface features will be lost without record or left unexcavated before destruction.

7.3. At no stage in the assessment process was there recognition by National Highways of this heritage asset; it is not listed in their gazetteer of archaeological assets.

7.4. Although this heritage asset is relatively small compared to the Beaker-period asset east of it, it lies between the two major upstanding monuments (Winterbourne Stoke G1 & Wilsford G34) as the northern part of the densest concentration of Early Neolithic long

barrows (first burial mounds) known in Britain. It is of national significance because of this potential association of settlement-associated activity with a major complex of Early Neolithic funerary monuments.

8.1. Remains of a probable Early Neolithic settlement at the eastern portal. The Eastern Portal surface route cuts through a distribution of stone tools and lithics likely to be the remains of an Early Neolithic settlement (*c.* 3800–3400 BC; centred on 4141 1421; Figure 4). Surface finds from this heritage asset consist of flint blades amongst a relatively light distribution of lithics (*c.* 3.6 per sq m; Highways England 2019b: figs 5.15, 5.16). Evaluation excavations were carried east of this heritage asset but not within it. Geophysical survey results suggest a similar density of sub-surface features to elsewhere within the WHS.

8.2. This heritage asset will be destroyed by the scheme. Archaeological mitigation will not include further recovery of artefacts in the topsoil and will investigate only a small percentage of the sub-surface features.

8.3. At no stage in the assessment process was there recognition by National Highways of this heritage asset; it is not listed in their gazetteer of archaeological assets.

8.4. Dating and characterisation of this heritage asset are not as certain as the two assets described above. It has not received the extent of evaluative investigation that the other two have. Consequently its significance is difficult to establish from the available evidence. However, remains of Early Neolithic settlement activity are rare and have enhanced significance within the WHS with its exceptional monumental landscape of this period.

9.1. New archaeological and palaeoenvironmental results from Blick Mead. Analyses of sediments from the Mesolithic hunter-gatherer site of Blick Mead (Figure 5), beyond the eastern portal, are only now available after the Secretary of State's decision in 2020. The findings can be placed within a chronological framework built on new OSL, radiocarbon and relative archaeological dating. They show that Blick Mead existed in an open clearing in deciduous woodland, exploited by aurochs, deer and hunter-gatherers for approximately 4000 years until *c.* 4000 BC. This study demonstrates that these sediments can provide suitable samples for successful environmental assaying using *sedDNA* (sedimentary ancient DNA), provided they survive within a stable depositional environment where the water table has not been affected.

9.2. A 20m borehole survey was conducted across the floodplain close to Blick Mead in 2019 (Figures 6a, 6b). This confirmed the presence and extent of prehistoric horizons from the basal late Pleistocene chalk deposits to the late Mesolithic period, beneath Bronze Age peat, with no evident contamination of aDNA from later human activity.

9.3. Over 2 million raw sequence reads of aDNA could be identified to 41 botanical taxa of which 11 were identified to species level, 20 to genus and 10 to family level (Figure 7). These results show a high degree of correspondence with pollen and spore analysis, with 21 taxa shared with the pollen assemblage. The Blick Mead sequence reveals the development of a floodplain-edge clearing (Figure 8), with a pre-existing damp meadow environment that was then exploited for grazing by large ungulates, as indicated by taxa representing disturbed, nutrient enriched ground.

9.4. Blick Mead's location, within one of the most archaeologically rich river valleys in the UK, is not an isolated environment in the Stonehenge landscape, but part of a series of more

open areas along the chalkland floodplain which have yet to be discovered. The importance of the site in the Mesolithic is attested to by its vast and diverse collection of Mesolithic struck flint, some of which, such as a slate projectile point, may have originated from more than 100 km away.

9.5. Managing and maintaining the local water table in this area is clearly crucial since this zone preserves an archive of the landscape over the entire Holocene, and is the only semi-continuous record that we could hope to have in the WHS. The preservation of the *sedaDNA* within the sediment at Blick Mead has been enhanced by the local waterlogged conditions, which have limited DNA degradation to some extent and aided in maintaining a secure stratigraphy from which to sample. This will be preserved as long as the hydrological regime of these sedimentary traps remains unaltered (see below).

9.6. Without the survival of sedimentary ancient DNA and pollen from Blick Mead, maintained by water table levels over millennia, the many new insights gained since 2020 into Blick Mead's prehistoric environment would have been lost. In addition, its environs have not been explored to the full and the chance will be lost if the present tunnel scheme disturbs the water table and interferes with the hydrological regime.

9.7. The hydrological regime of the Blick Mead site and the Eastern Portal area.

Archaeological analysis of organic remains preserved in sediments has been revolutionized by recovery of molecular 'fossils' such as aDNA and also lipid biomarkers (fats etc.) alongside traditional remains such as artifacts, structures, pollen, snails, beetles *etc.* (Brown *et al.* 2022).

9.8. However, the preservation of these molecular fossils requires the sediments to remain within the permanently saturated, or at least seasonally, saturated zone. As yet we do not fully understand the taphonomy of these remains BUT we do know that they are best preserved under of low REDOX conditions and where there is no or minimal leaching (as happens above the water table). This makes the hydrological conditions of the WHS of critical importance in areas that have the potential for such preservation which includes the eastern tunnel portal area.

9.9. Hydrological conditions were addressed in the initial submission but, as argued at the original hearing in June 2019, Highways England's assessment and studies do not provide enough reassurance that the site of Blick Mead will not be damaged as they reveal that there is insufficient understanding of the hydrology of the site. The main areas of concern remain:

- (a) a lack of understanding and modelling of the horizontally elevated permeability associated with the Whitway/Stockbridge Rock/Barrois Horizon zone as highlighted by Dr G.M. Reeves (submission to Planning Inspectorate ref. TR010025-001706 ([REP9-045](#))). This causes uncertainties in the effects on the springs not only at Blick Mead but also to the south;
- (b) a lack of modelling of shallow groundwater flows both before and after the works incorporating the full design of drainage works and any infiltration or runoff ponds;
- (c) a lack of appropriate modelling at high sensitivity to model seasonal water table fluctuations at the site and groundwater levels below 68m OD which would damage the archaeological resource. This should also include climate change scenarios as changes in precipitation and evapo-transpiration could also make the site more vulnerable and cannot be divorced from the changes to the hydrological catchment caused by the tunnel and associated works;
- (d) a failure to undertake a Tier 4 assessment despite the uncertainties revealed in the Highways England assessment (Highways England 2018b).

9.10. All these points were made in the Report to the Planning Inspectorate in 2018. Indeed, these concerns are also relevant to other areas of potential hydrological impact to the north of the present A303 and this is why this area is included in a new project (summarized below).

9.11. Buried landscapes of the Avon Riverside and the Mesolithic of the Stonehenge area – a new AHRC-funded project. Based largely upon the recent research done at Blick Mead, a new project will begin in August 2023, funded by the Arts and Humanities Research Council (AHRC; award AH7W002868/1) and led by Prof. Tony Brown, assisted by Profs. Vince Gaffney, Chris Gaffney, David Jacques and Mike Parker Pearson. Its aim is to investigate the pre-Stonehenge environment of the eastern fringe of the WHS including the area around the Eastern Portal, through coring and by further applying the new techniques of molecular analysis of sediments.

9.12. The AHRC's support of this project reveals some concern accepted by the AHRC panel that these sediments could be lost or damaged, rendering this question impossible to answer in the future. Underlying this project is the belief that the WHS should continue to provide a full natural archive of sediments and soils as well as archaeological structures artifacts and finds.

9.13. It remains a fact that the appropriate monitoring of Blick Mead, at the correct spatial and temporal scale, has not been undertaken and so we cannot be any more assured of a lack of hydrological impact than was given in the report of 2018.

10. Conclusions.

10.1. Large Beaker-period settlement with burials. A major heritage asset on the road line at the southern portal has gone unrecognised and not even provided with an asset number by National Highways. This omission is all the more glaring since a plan and description of it were published by leading Stonehenge archaeologists in a peer-reviewed book in 2017 (Pollard *et al.* 2017: fig. 18a; see Figures 1 and 2). This is a large Beaker-period settlement, much of which lies within the road line outside the western portal. Demonstrably a heritage asset, further investigations of it for National Highways have subsequently revealed exceptionally dense concentrations of artefacts and the presence of human burials, one of which contains a unique artefact (Highways England 2019a; National Highways 2021).

10.2. This major heritage asset meets all eight criteria for designation of national importance as a Scheduled Ancient Monument: these include its rarity, its period in prehistory, its diversity of settlement remains and burials, its group value with Stonehenge, its survival of graves and other cut features, its vulnerability, and its potential for understanding of the lives of Stonehenge's builders of its third and fourth stages of construction.

10.3. The proposed scheme would cause the loss without record of *c.* 360,000 artefacts from this heritage asset, along with the destruction of *c.* 1,300 buried natural features (tree-throws *etc.*), many of which are likely to contain further artefacts and other remains of this heritage asset. This can only be considered as substantial harm.

10.4. Remains of probable Early Neolithic settlements west of the Beaker-period settlement and at the eastern portal. Two further heritage assets are identified as concentrations of artefacts in the topsoil, as the result of topsoil sieving (Highways England 2019b: figs 5.14, 5.15, 5.16; see Figures 3 and 4). The presence of flint blades and a stone axe

fragment suggest dating to the Early Neolithic (*c.* 3800–3400 BC). Neither of these heritage assets has been given an asset number. Settlement sites of this period are rare and likely to be of national importance. Both assets lie on the road lines beyond both the eastern and western portals and will be wholly or substantially destroyed by the proposed scheme. These heritage assets will suffer substantial harm.

10.5. Hydrological impact on the Blick Mead Mesolithic site and the Eastern Portal area.

The Blick Mead heritage asset and its environs contain the only semi-continuous sequence of waterlogged palaeoenvironmental deposits in the WHS. The significance of these deposits as an archive for preserving evidence of the prehistoric landscape and environment has only now become to be appreciated with the recovery of sedimentary DNA. If the proposed scheme goes ahead, it will disturb the water table and interfere with the hydrological regime in ways that may cause this precious aspect to be damaged, compromised or even lost as a result of dewatering or widely fluctuating water levels.

10.6. National Highways' assessment and studies of the hydrology and of the likely impact of the proposed scheme provide insufficient reassurance that the heritage asset of Blick Mead will not be damaged. Current understanding of the hydrology of the site is insufficient due to a lack of appropriate modeling and a failure to carry out the full range of assessments. Without such investigations, the Blick Mead site is vulnerable to hydrological changes caused by the scheme which would cause substantial harm to this heritage asset.

10.7. **Overview.** Three heritage assets, at least one of them demonstrably of national importance, will be substantially harmed by being entirely or substantially destroyed with insufficient record since they lie within the road line.

A fourth heritage asset (Blick Mead Mesolithic site, probably also of national importance) is at risk of substantial harm because of the scheme's uncertain impact on the hydrology, affecting preservation of waterlogged remains.

It strains credibility that none of these four have been identified as numbered assets by National Highways, especially because two have been known about through their documentation in publically-available, peer-reviewed publications prior to 2018.

This is clear evidence of National Highways' continuing failure to properly assess the risk to harm of these four heritage assets and undermines any claim that the proposed scheme will cause less than substantial harm to such assets.

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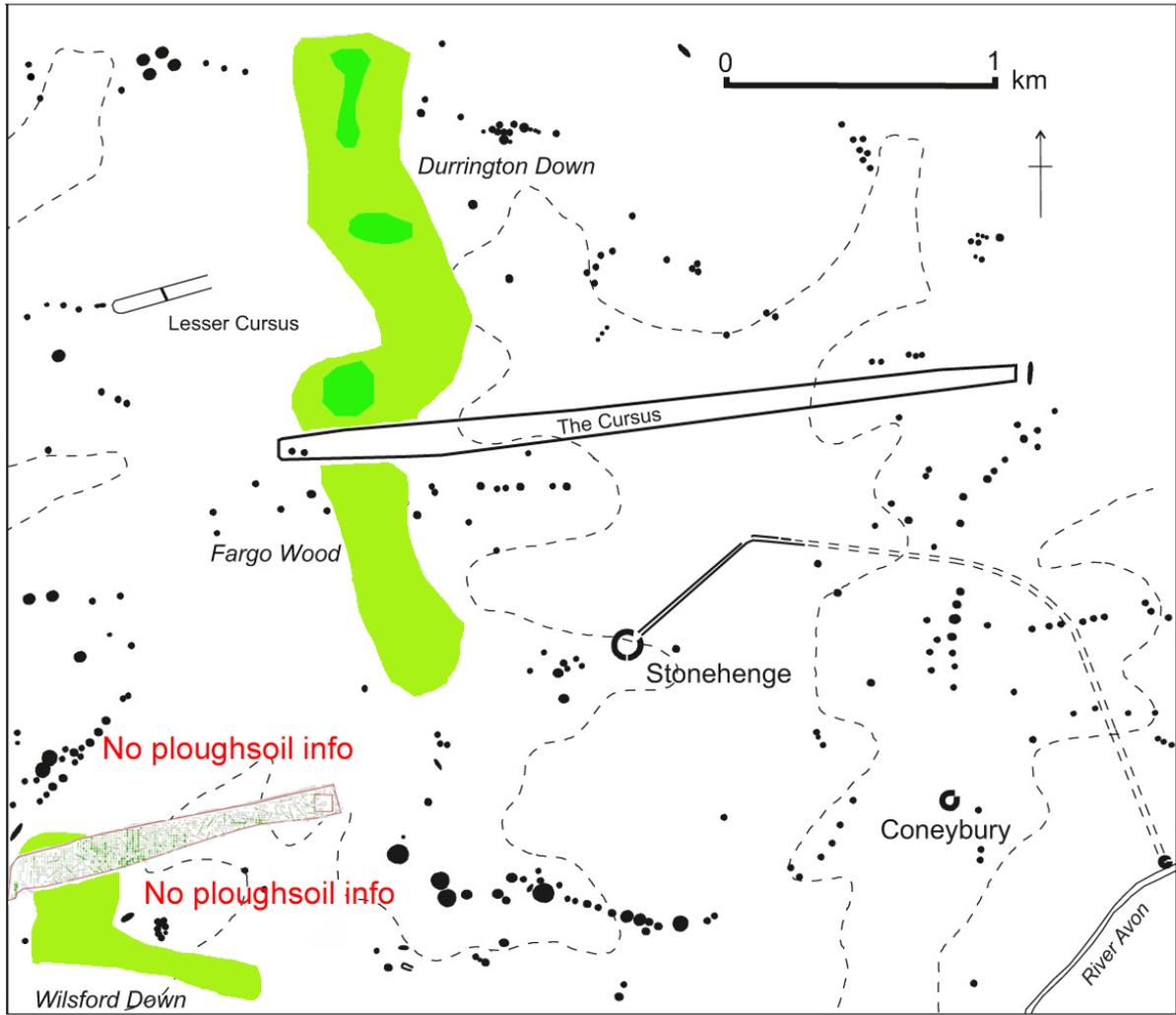


Figure 1. Areas of Early Bronze Age settlement in the Stonehenge landscape (after RCHME 1979, Richards 1990 and other sources). From Pollard et al. 2017: fig. 18.8a.

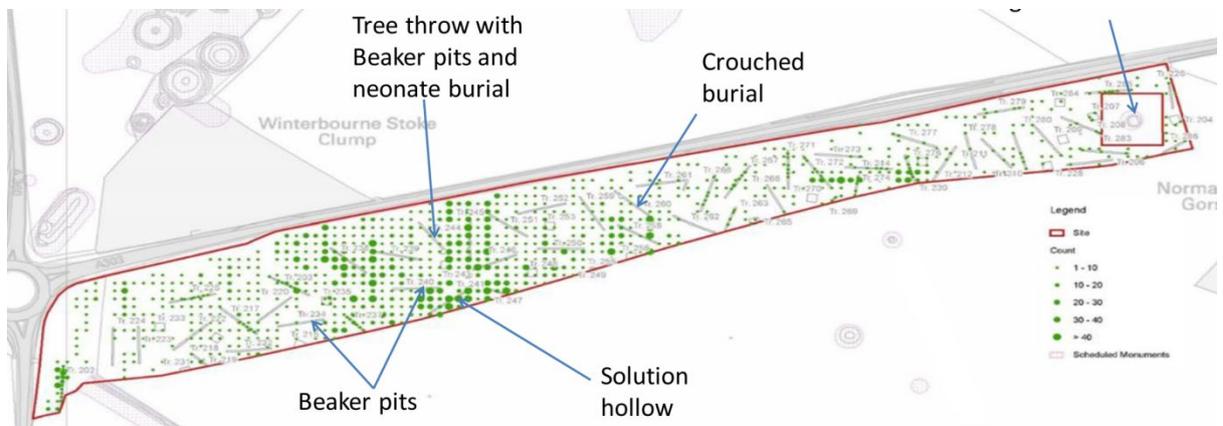


Figure 2. Western portal: features and worked flint distribution. The Beaker-period

settlement is the area of high-density lithics (in green) amongst which are Beaker burials and pits. From Highways England 2018a.

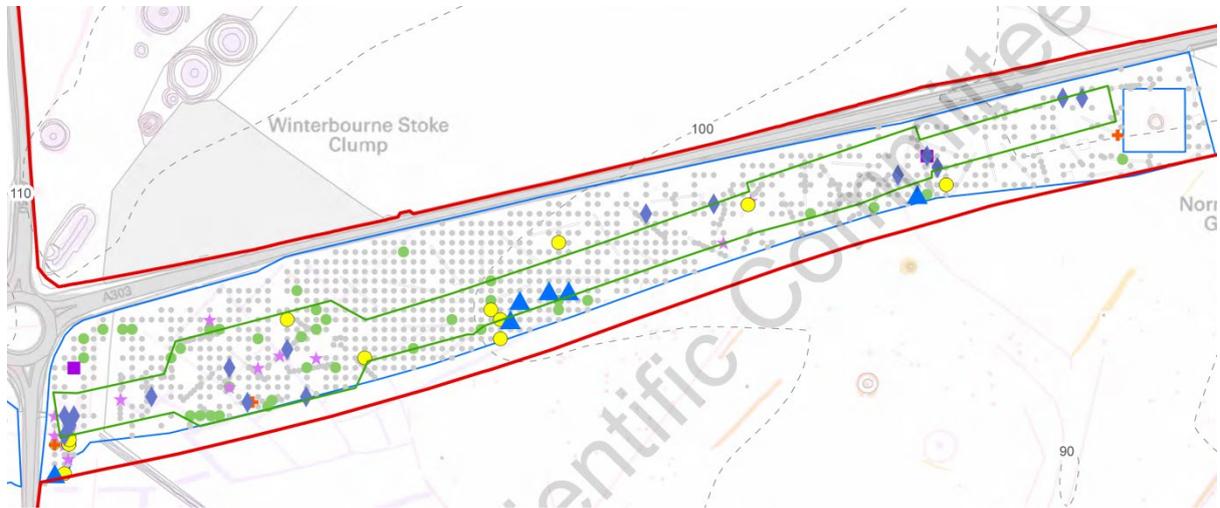


Figure 3. Western portal: worked flint distribution showing the likely Early Neolithic heritage asset as indicated by the clusters of flint blades (blue diamonds), retouched pieces (pink stars) and scrapers (green circles). From Highways England 2019: fig. 5.14.

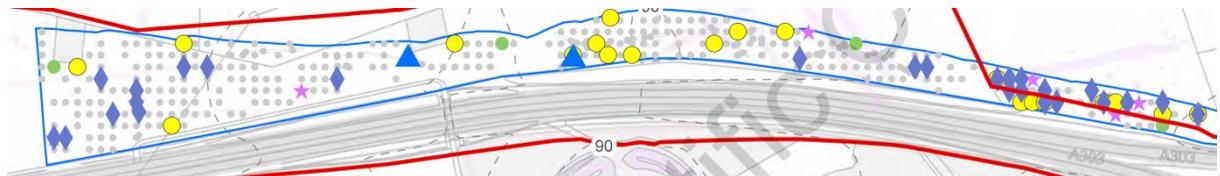


Figure 4. Eastern portal: worked flint distribution showing the likely Early Neolithic heritage asset as indicated by the cluster of flint blades (blue diamonds) at the far left. A similar cluster to the far right lies largely outside the proposed road line so is not so much at risk. From Highways England 2019: fig. 5.16.

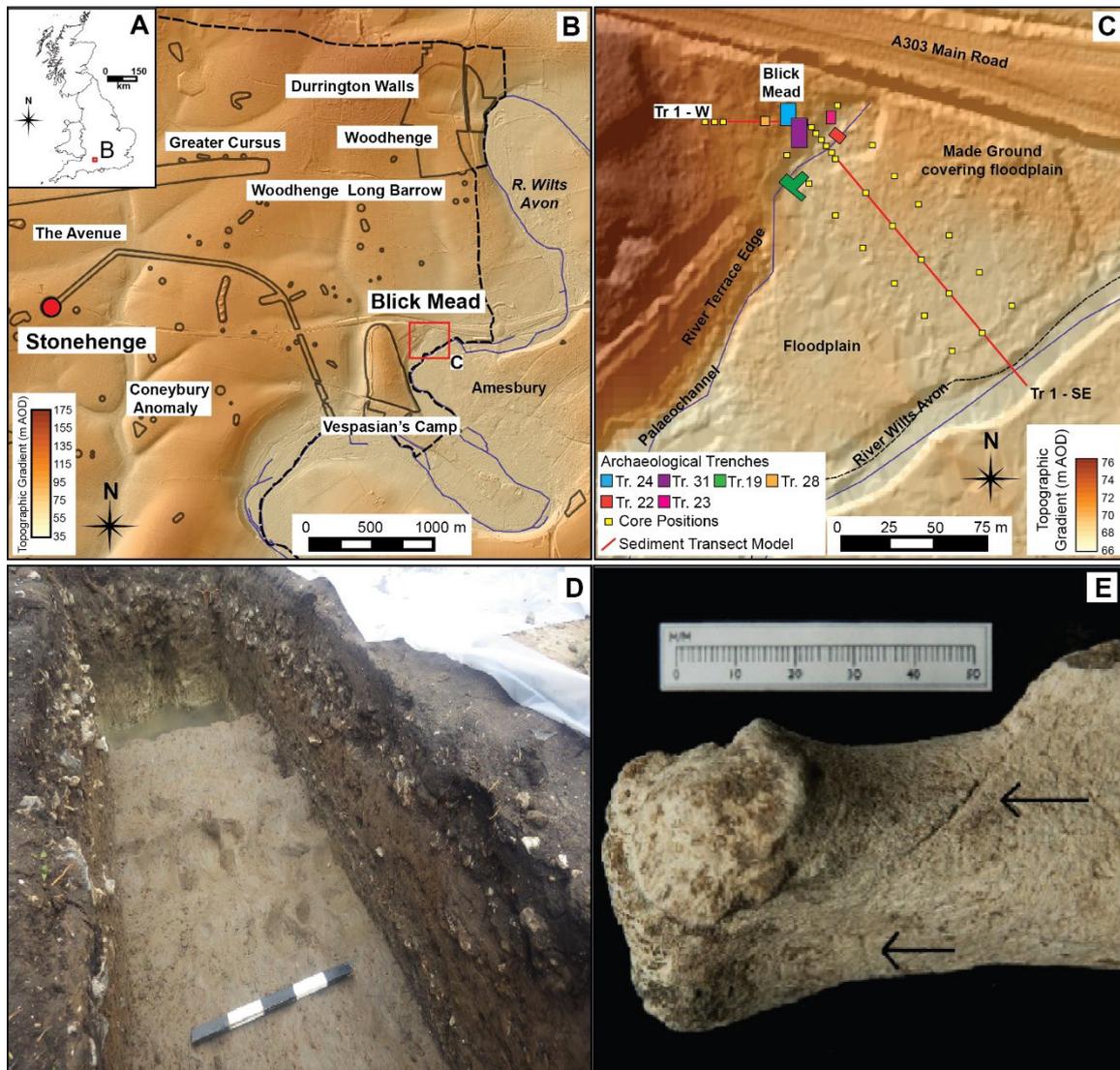


Figure 5. Location, setting and key archaeology at Blick Mead. A: UK location of the Stonehenge Environs. B: Eastern section of the Stonehenge World Heritage Site with key archaeological sites. Basemap 1m Lidar DTM topographic gradient over Hillshade Model (Environment Agency 2017). C: Location of the Blick Mead Site on the edge of the Wiltshire Avon floodplain with archaeological trenches and positions of sediment cores and transect (see Figure 6). Basemap 1m Lidar DTM topographic gradient (SU14SW; SU14SE) over Hillshade Model (Environment Agency 2017). D: Position of in-situ auroch hoofprints within the Mesolithic alluvium (Photo D. Jacques). E: Evidence of butchery cut marks on auroch faunal remains (Photo B. Rogers)

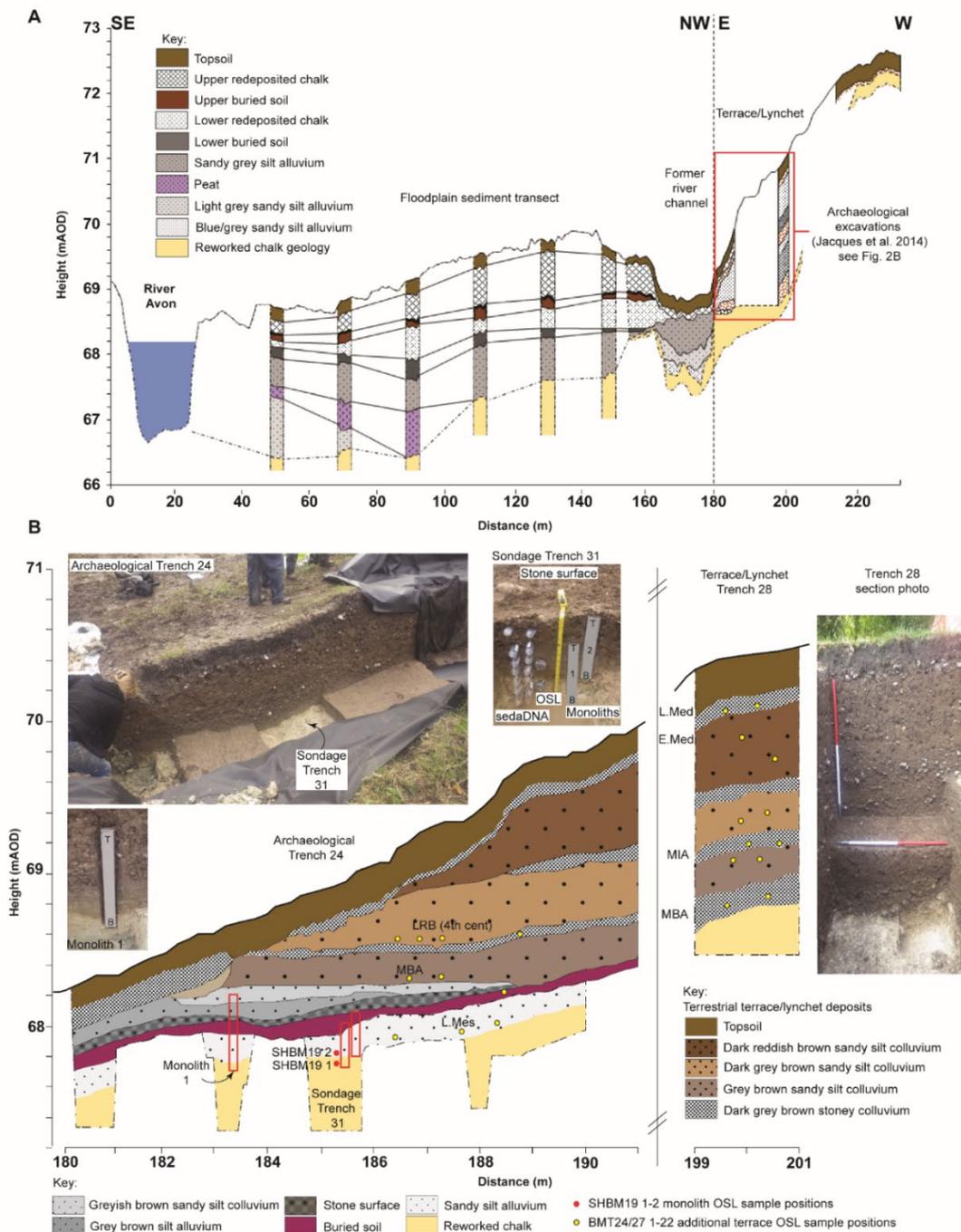


Figure 6. A: Reconstructed sediment transect model across the floodplain of the Wilshire Avon between Blick Mead and the present river (see Figure 5). Transect shows extent of basal reworked Pleistocene gravelly chalk, fine grained alluvial deposits, peat deposits, extent of floodplain edge palaeochannel and buried soils associated with 18th and 19th century landscaping of Amesbury Abbey and construction of A303 road in the 1960s. B: Detailed section drawing of fluvial-terrestrial interface between floodplain and Middle Bronze Age to late medieval lynchet. Section details the extent of basal reworked Pleistocene gravelly chalk, Mesolithic alluvium (containing auroch hoofprints), buried soil, stone surface as well as locations of sampling points in sondage 31, position of OSL and C14 dates (all S. Hudson)

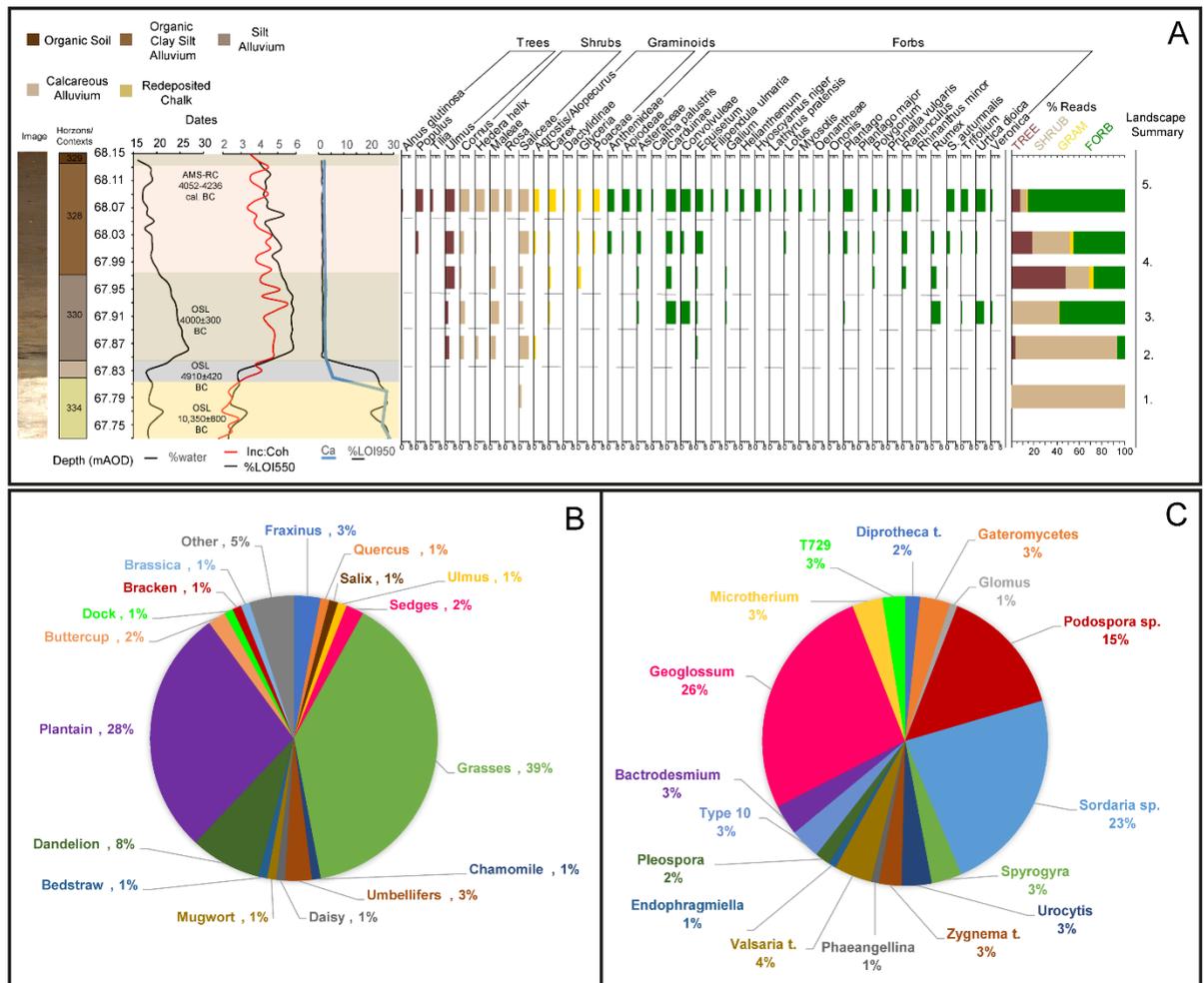


Figure 7. The combined lithostratigraphic and environmental data from Blick Mead. A: Selected lithostratigraphic data defining the main archaeological contexts and their associated dates. Shown alongside the full plant sedaDNA assemblage displayed as a histogram of the number of PCR replicates and taxa appeared in from 1-8 as well as a composite of total read percentages. The landscape summary determined from the plant sedaDNA evidence is as follows. 1- Willow woodland within floodplain. 2- More open local landscape with willow in floodplain alongside elm and increased shrubs on terrace edge. 3- Open local landscape with slight decrease in wood/shrub taxa, increases in wetland forbs and first appearance of sedge taxa. 4- Continued open local landscape with increased woodland and graminoid diversity, alongside increasing dryland forb community. 5- Continued open local landscape with clear increases in wet and dry woodland, graminoid and forb diversity. B: Pollen assemblage taken from the Mesolithic layers of Trench 19 (see text). C: Fungal and algal spore assemblage from the same samples (S. Hudson)

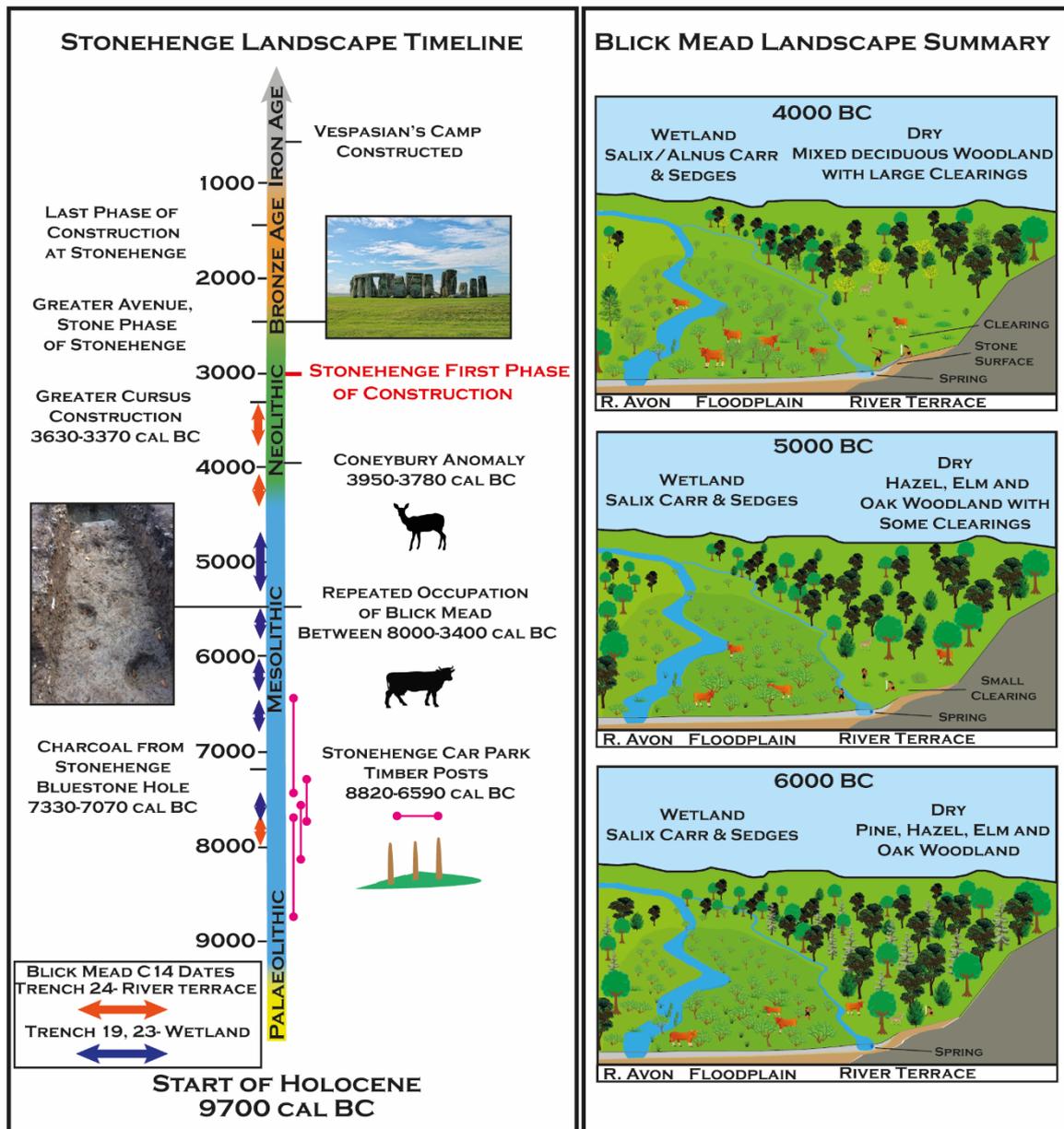


Figure 8. A: Timeline of the Stonehenge landscape, including radiocarbon dates from Blick Mead and other significant Stonehenge WHS archaeological sites. B: A representation of the development of vegetation history at Blick Mead based on the palaeoenvironmental data (S. Hudson)

References

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