

Dorchester Palisaded Enclosure, Greyhound Yard and Church Street, Dorchester, Dorset

Radiocarbon Dating and Chronological Modelling

Peter Marshall, Alex Bayliss, Michael Dee, Irka Hajdas and Susan Greaney



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Summary

Radiocarbon dating and chronological modelling of samples from the Dorchester palisaded enclosure, recovered from excavations at Greyhound Yard and Church Street, Dorchester, Dorset were undertaken in support of a PhD funded by the AHRC through the South, West and Wales Doctoral Training Partnership at Cardiff University undertaken by Susan Greaney. The results suggest that the Dorchester palisaded enclosure was constructed in *2470–2430 cal BC* (*95% probability*) and probably in *2490–2360 cal BC* (*68% probability*).

Contributors

Peter Marshall, Alex Bayliss, Michael Dee, Irka Hajdas and Susan Greaney

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Front cover image

The Neolithic post-pits in Trench C/F showing the earlier pit 4695 cut by post-pit 4540 (Woodward et al. 1993, plate 11). © Wessex Archaeology.

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Dorset Museum, High West Street, Dorchester, Dorset, DT1 1XA

Historic environment record

Dorset Historic Environment Record, Dorset History Centre, Bridport Road, Dorchester, Dorset, DT1 1RP

Date of research

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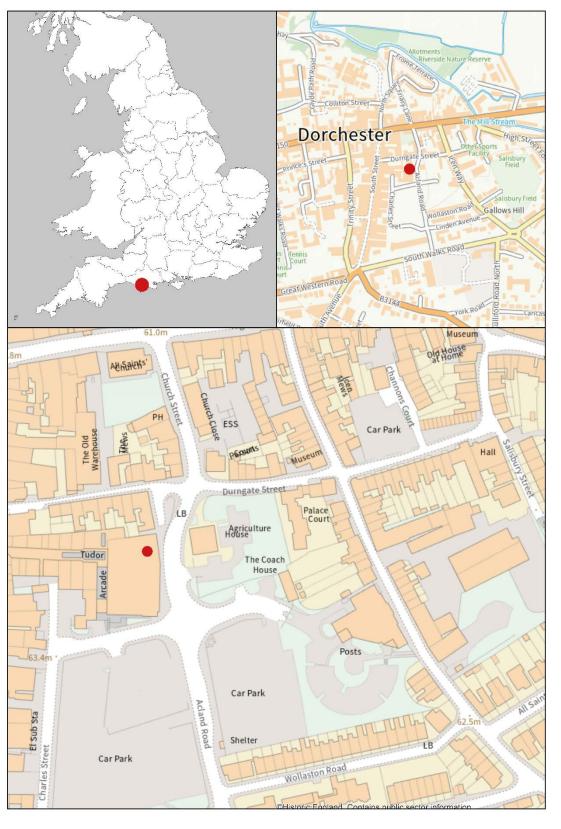
Introduction

This document is a technical archive report on the radiocarbon dating and chronological modelling of samples from Greyhound Yard, Dorchester, Dorset (Fig. 1). The work was undertaken in support of a PhD funded by the AHRC through the South, West and Wales Doctoral Training Partnership at Cardiff University undertaken by Susan Greaney (Greaney 2022). Elements of this report may be combined with additional research at some point in the future to form a comprehensive publication on the chronology of Greyhound Yard and its context within the Dorchester monument complex.

The Palisaded Enclosure

A timber palisaded enclosure, known by its location as Greyhound Yard (Fig. 1), was partly excavated in three separate developer-led investigations between 1984 and 1989. This major monument, consisting of an enclosure of substantial posts, was first discovered in 1984 by the Trust for Wessex Archaeology in the excavations at Greyhound Yard when 21 post-pits and their associated ramps were found in a 40m arc (Fig. 2). The pits had been dug up to 2.8m into the chalk and the post-pipes showed that the posts had been oak and 0.8–1.2m in diameter. The estimated diameter would suggest that the trees were between 100 and 180 years old when felled. Each post-pit had an associated ramp up to 5.5m long, used to raise the posts into position. A corresponding shallow gully was found just to the west of the arc of posts. Finds from the post-holes included Grooved Ware and Peterborough Ware, as well as large numbers of pig bones and a flint assemblage similar to that from Mount Pleasant and Durrington Walls (Woodward et al. 1993, 315). The palisade appears to have been destroyed by fire, as shown by 'festoons' of charcoal down the outer edges of the post-pipes.

The discovery of this monument led to re-consideration of a pre-Roman feature that had been found in 1982 to the north of Greyhound Yard (on the site of an old egg-packing factory off Church Street) during excavations by the Central Excavation Unit. This was now recognised potentially as a post-pipe belonging to the same monument. In order to assess this, further investigation was undertaken by the Central Excavation Unit in February 1985, which identified the feature as part of an arc of five post-pipes. These were only identified in plan and no further excavation of them took place. Further trial trenching in early 1986 to the east of the egg-packing factory revealed another four complete post-pits and part of a fifth one (Batchelor n.d. unpubl.). Again, these were only identified in plan and not excavated. Excavations in 1989 by Wessex Archaeology off Charles Street, to the south of Greyhound Yard, demonstrated that the monument continued in that direction. Five postpits (none fully excavated) with an external gully were found in Trench 1, and another



three post-pipes excavated in Trench 3 (only one was half-sectioned; Adam et al. 1992 unpubl.; Adam and Butterworth 1993 unpubl.; Fig. 2).

Figure 1. Maps to show the location of Greyhound Yard, Dorchester. Scale: top right 1:6614; bottom 1:1,654. © Crown Copyright and database right 2023. All rights reserved. Ordnance Survey Licence number 100024900.

The post-pits were truncated by later urban features and none had a complete profile as the land surface had eroded considerably since the features were cut. Of the 38 post-pits, part or all of 23 were excavated (21 at Greyhound Yard, 1 at Charles Street and 1 at Church Street). The pits were ovate in plan and were cut to depths of up to 2.8m into natural chalk, with a vertical face on the eastern side of the pit and a long ramp sloping at *c*. 45° on the western side. All appeared to have the same sequence of fills.

Together these excavations have revealed part of an enormous palisaded enclosure, enclosing an irregular oval of an estimated 380m in diameter (Woodward et al. 1993, 30) surrounding a small coombe which runs north to the River Frome.

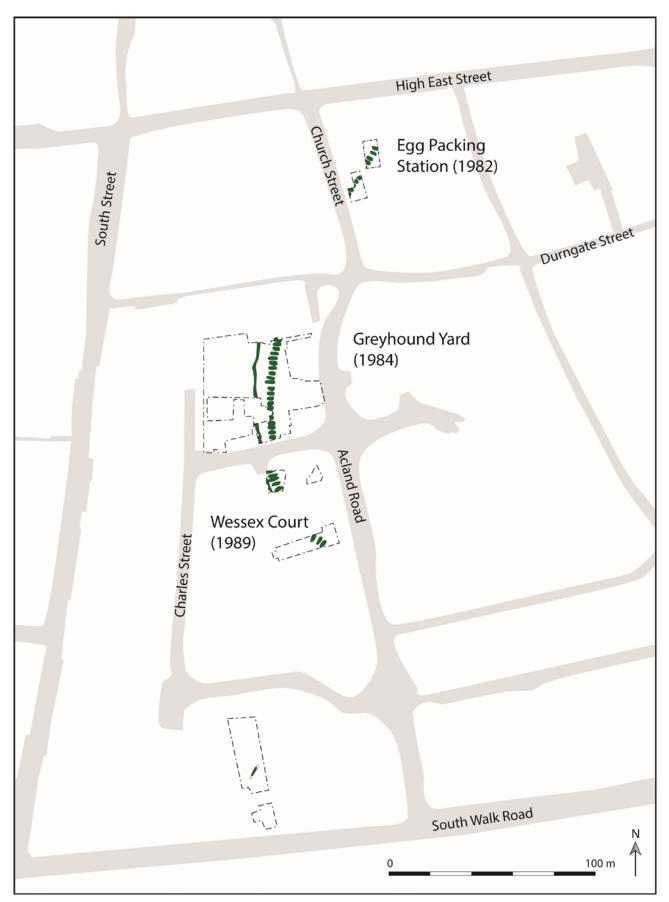


Figure 2 Plan of all excavated post-pits and external gully forming part of the Greyhound Yard palisaded enclosure (after Adam et al. 1992, fig 2).

Radiocarbon Dating and Chronological Modelling

The new radiocarbon dating programme for the Dorchester palisaded enclosure was conceived within the framework of Bayesian chronological modelling (Buck et al. 1996). This allows the combination of calibrated radiocarbon dates with archaeological prior information using a formal statistical methodology. The objective of the programme was to produce a more precise and robust chronology for the Dorchester palisaded enclosure. This would enable us to extricate the temporal relationship between this monument and the other major late Neolithic sites in and around Dorchester, e.g. Mount Pleasant (Greaney et al. 2020) and Maumbury Rings (Marshall et al. 2024).

One radiocarbon measurement had been previously obtained on a sample of oak charcoal from AERE Harwell in 1983 (Table 1; Bayliss et al. 2012, 79), and six further radiocarbon measurements were made at AERE Harwell in 1987–8 on samples of antler and oak charcoal from Greyhound Yard (Table 1; Bayliss et al. 2012, 79–80).

Sample selection was undertaken using the iterative process for implementing Bayesian chronological modelling on archaeological sites outlined in Bayliss and Marshall (2022, §3). At Greyhound Yard we targeted antler tools discarded at or near the base of negative features thought to be functionally related to the digging of them. This inference is more secure when use-wear such as battering on the posterior side of the beam/burr/coronet is identifiable (Bayliss and Marshall 2022: §3.2.2). Charcoal recovered from the post-pipes of the palisade was scanned for fragments of oak sapwood or fragments with rare tyloses that probably derived from the area of the heartwood/sapwood transition. It should be noted that the absence of tyloses in charcoal is not always a reliable indicator of sapwood. This material probably represents the remains of charred posts which, on the basis of their estimated diameters (0.8–1.2m) and cross-sections, probably derived from untrimmed trees that were between 100 and 180 years old when felled (Woodward et al. 349; Greaney 2022, 180). The identification of the outermost part of the posts was thus essential for avoidance of the old-wood effect (Bayliss and Marshall 2022, §3.2.3). Where possible two single fragments of charcoal were submitted from each feature. The sampling programme also attempted to provide replicate measurements on the samples and features dated in the 1980s.

Table 1 Radiocarbon and stable isotopic measurements from the Dorchester palisaded enclosure (replicate measurements have been tested for statistical consistency and combined by taking a weighted mean as described by Ward and Wilson (1978); nm=not measured).

Laboratory number	Sample reference, material and context	δ ¹³ C _{IRMS} (‰)	δ ¹³ C _{AMS} (‰)	δ ¹⁵ N _{IRMS} (‰)	C/N ratio	Radiocarbon age (BP)
Greyhound Y	ard – post pits					
HAR-6663	Sample W67.4947. Large red deer antler pick with frontal bone and skull attached (slain deer), from context 4947, backfill of ramp against post. Pit 4885. Section drawing Woodward et al. (1993, fig 8). A small patch of burning suggests human modification, making it likely to be functionally related to the digging of the post-pipe.	-23.8				4020±80
GrM-17425	Replicate of HAR-6663.	-21.60±0.15		7.91±0.3	3.2	4030±30
W67.4947	¹⁴ C: 4029±29 BP, T'=2.5, T'(5%)=3.8, v=1					
HAR-6664	Sample W67.4166. Large red deer antler pick from shed antler, from context 4166, packing around post-pipe. Pit 4163. Section drawing 2162 (Woodward et al. 1993, microfiche).	-23.6				4070±70
ETH-95259	Replicate of HAR-6664.	-23.15±0.1	-24.0	4.86±0.1	3.5	3957±22
W67.4166	¹⁴ C: 3967±21 BP, T'=2.4, T'(5%)=3.8, v=1			1		
ETH-95264	[4164] Sample A. Charcoal, <i>Quercus</i> sp. sapwood/heartwood transition (D Challinor), from context 4164, the outer circumference of the post-pipe that extends from the truncation to the base of the post pipe. Pit 4163. Section drawing Woodward et al. (1993, 2162 (microfiche)).	-24.9±0.1	-26.0	-	-	4080±22
GrM-17496	[4164] Sample B. Charcoal, <i>Quercus</i> sp. sapwood/heartwood transition (D Challinor), from context 4164, the outer circumference of the post-pipe that extends from the truncation to the base of the post pipe. Pit 4163. Section drawing Woodward et al. (1993, 2162 (microfiche)).	-25.03±0.15	-	-	-	4000±25
ETH-95260	Sample [4355]. Red deer antler pick, from context 4577, lowest fill of ramp. Pit no. 4355. Section drawing 2254 (Woodward et al. 1993, microfiche).	-23.53±0.1	-23.9	4.31±0.1	3.4	3986±22

GrM-17424	Replicate of ETH-95260	-23.35±0.15		4.24±0.3	3.2	3995±30	
Pit no. 4355	55 ¹⁴ C: 3989±18 BP, T'=0.1; δ ¹³ C: -23.5±0.08‰, T'=1.0; δ ¹⁵ N: +4.3±0.1‰, T'=0.0, T'(5%)=3.8, v=1 for all						
ETH-95262	Sample [4843]. Red deer antler tine, from context 4853, middle layer of ramp. Section drawing 2320 (Woodward et al. 1993, microfiche). Pit no. 4843. This tine is worn, making it likely to be functionally related to the digging of the post-pipe.	Nm	-21.6	nm	nm	4068±30	
ETH-95261	Sample [4540] Red deer antler rake, from context 4562, middle layer of ramp. Section drawing 2262 (Woodward et al. 1993, microfiche). Pit no. 4540. This rake is worn, making it likely to be functionally related to the digging of the post-pipe.	-22.50±0.1	-19.1	4.18±0.1	3.5	3911±22	
HAR-6686	Sample W67.1648. Charcoal, <i>Quercus</i> sp. crushed and broken from large timbers, from context 1648, infill/packing on outer edge of post-pipe, relatively high in section. Section drawing Woodward et al. (1993, fig. 169). Pit 1635.	-27.0				4020±80	
HAR-6687	Sample W67.1649. Charcoal, <i>Quercus</i> sp. crushed and broken from large timbers, from context 1649, 'festoons' of charcoal along the edge of the inner post-pipe. Section drawing Woodward et al. (1993, fig. 169). Pit 1635.	-25.9				4090±70	
HAR-6688	Sample W67.1653. Charcoal, <i>Quercus</i> sp. from large timbers, from context 1653, 'festoons' of charcoal in the lower post-pipe fill. Section drawing Woodward et al. (1993, fig. 169). Pit 1631.	-26.5	-	-	-	4080±70	
HAR-6689	Charcoal, <i>Quercus</i> sp. from large timbers Pit 1631. From context 1642, fill of upper post-pipe. Sample W67.1642. Section drawing Woodward et al. 1993, fig. 169.	-26.3	-	-	-	4140±90	
ETH-95263	[1642] Sample A. Charcoal, <i>Quercus</i> sp. sapwood (D Challinor), from context 1642, fill of upper post-pipe. Section drawing Woodward et al. (1993, fig. 169). Pit 1631.	-24.84±0.1	-25.9	-	-	4010±22	

GrM-17426	[1642] Sample B. Charcoal, <i>Quercus</i> sp. sapwood (D Challinor), from context 1642, fill of upper post-pipe. Section drawing Woodward et al. (1993, fig. 169). Pit 1631.	-25.14±0.15	-	-	-	3975±25
GrM-17497	[4556]. Charcoal, <i>Quercus</i> sp. heartwood/sapwood transition (D Challinor), from context 4556, the outer circumference of the post-pipe. Pit 4503. Section drawing Woodward et al. (1993, 2231 (microfiche))	-23.90±0.15	-	-	-	4185±25
Post-pits - Ch	hurch Street					
GrM-17423	Red deer antler tine (find no.1130), from context 843, primary chalk fill (likely to be ramp). Pit no. 828. Section drawing unknown. Tine from pre-Roman post-pipe/ditch at Church St excavations (Batchelor n.d., 3). The tine is worn, making it likely to be functionally related to the digging of the post-pipe.	-22.74±0.15		4.07±0.3	3.2	3970±25
HAR-5508	Sample 45-1129. Charcoal, <i>Quercus</i> sp., from context 843, primary chalk fill (likely to be ramp). Pit no. 828. Section drawing unknown.	-26.5				4060±90

Radiocarbon Dating

A total of 18 radiocarbon measurements, from antler and charcoal, are now available from the Dorchester palisaded enclosure. Details of the dated samples, radiocarbon ages, and associated stable isotopic measurements are provided in Table 1. The radiocarbon results are conventional radiocarbon ages (Stuiver and Polach 1977), corrected for fractionation using δ^{13} C values measured by Isotope Ratio Mass Spectrometry (IRMS) on sub-samples of carbon dioxide (at AERE Harwell) and values measured by Accelerator Mass Spectrometry (AMS; in Zürich and Groningen).

The five charcoal samples dated at AERE Harwell were pretreated using an acid-baseacid protocol (Otlet and Slade 1974), and collagen was extracted from the two antler samples (Bayliss et al. 2012, xiv). The samples were then combusted to carbon dioxide and synthesised to benzene using a method similar to that initially described by Tamers (1965) and a vanadium-based catalyst (Otlet 1977). Procedures for liquid scintillation counting and error calculation are described by Otlet (1979) and Otlet and Warchal (1978).

Six samples were dated at the Laboratory of Ion Beam Physics, ETH Zürich, Switzerland in 2019. The four antler samples were gelatinised and ultrafiltered as described by Hajdas et al. (2007; 2009) and the two charcoal samples were pretreated using the acid-base-acid protocol described by Hajdas (2008). They were then combusted in an elemental analyser and graphitised using the fully automated system described by Wacker et al. (2010a). Graphite targets were dated using a 200kV, MICADAS Accelerator Mass Spectrometer as described by Wacker et al. (2010b). Stable isotopic ratios were obtained on sub-samples of the pretreated material using a ThermoFischer Flash-EA 1112 elemental analyzer coupled through a Conflo IV interface to a ThermoFisher Delta V Isotope Ratio Mass Spectrometer.

Three antler samples and three fragments of charcoal were dated at the Centre for Isotope Research, University of Groningen in 2019. The samples were pretreated as described by Dee et al. (2020). They were then combusted in an elemental analyser (IsotopeCube NCS), coupled to an Isotope Ratio Mass Spectrometer (Isoprime 100) for measurement of %C, %N, C/N, δ^{13} C and δ^{15} N. The resultant CO₂ was graphitised by hydrogen reduction in the presence of an iron catalyst. The graphite was then pressed into aluminium cathodes and dated by AMS (Synal et al. 2007; Salehpour et al. 2016).

Data reduction at ETH Zürich and the University of Groningen was undertaken as described by Wacker et al. (2010c). Both facilities maintain continual programmes of quality assurance procedures, in addition to participation in international inter-comparison exercises (Scott et al. 2017). Details of quality assurance data and error calculation at

Groningen are provided by Aerts-Bijma et al. (2021), and similar details for ETH are provided in Sookdeo et al. (2020).

In the late 1970s, the British laboratories then in operation (including AERE Harwell) participated in a formal inter-comparison study in which samples of benzene of known activities were distributed and dated (Otlet *et al* 1980). This demonstrated excellent reproducibility in the counting and combustion stages of the dating process. The analysis of results on samples of waterlogged timbers that had been subsequently dated by dendrochronology, however, suggested that quoted error estimates were in many cases too low to account for the total error on the measurements, and that there was clear evidence of systematic laboratory bias in some facilities (Baillie 1990).

Replicate radiocarbon measurements are available on three antler picks, all of which are statistically consistent at the 5% significance level (Ward and Wilson 1978; Table 1). This compatibility is within statistical expectation and confirms the accuracy of the measurements made in the 1980s. Only sample [4355] has replicate δ^{13} C and δ^{15} N values, which are again statistically consistent at the 5% significance level.

Chronological Modelling

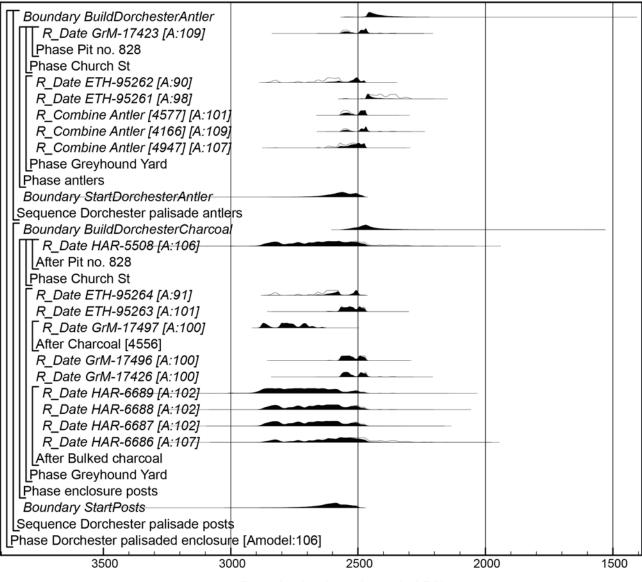
The chronological modelling presented here has been undertaken using OxCal 4.4 (Bronk Ramsey 2009), and the internationally agreed calibration curve for the northern hemisphere (IntCal20; Reimer et al. 2020). The model is defined by the OxCal CQL2 keywords and by the brackets on the left-hand side of Figure 3. In the figures, calibrated radiocarbon dates are shown in outline, and the posterior density estimates produced by the chronological modelling are shown in solid black. The other distributions correspond to aspects of the model. For example, the distribution *BuildDorchesterCharcoal* (Fig. 3) is the posterior density estimate for when the monument was constructed based on the charcoal samples only. In the text and tables highest posterior density intervals, which describe the posterior distributions, are given in italics.

Following the unexpected divergence between the radiocarbon dates produced on charcoal samples and bone samples from the West Kennet palisaded enclosures (Bayliss et al. 2017, figs 17.3 and 17.3), we decided to model the construction date of the Dorchester palisade enclosure separately, based on the radiocarbon dates from the antler tools and on the charcoal samples from the post-pits. Replicate measurements were combined by taking a weighted mean (Ward and Wilson 1978; Table 1). Samples of undifferentiated oak charcoal (HAR-6686–9) and GrM-17497 have been included as *termini post quos* for the construction of the palisaded enclosure to allow for the possibility that these samples included heartwood from the centre of the posts (which is probable

given the amount of charcoal required for conventional radiocarbon dating in the 1980s). Before submission, the fragment of charcoal dated by GrM-17497, was identified as from the area of the heartwood/sapwood transition in the timber but, given the comparatively early result produced by this sample, it seems likely that it was actually heartwood. All other samples have been included in the model as short-lived material closely related to the time of construction.

The model for the Dorchester palisaded enclosure is shown in Figure 3, and the CQL2 code is provided in the Appendix. This model has good overall agreement (Amodel: 106). The antler samples suggest that the enclosure was constructed in 2555–2520 cal BC (2% probability; BuildDorchesterAntler; Fig. 3) or in 2485–2280 cal BC (93% probability), probably in 2470–2395 cal BC (68% probability). The charcoal samples suggest that the enclosure was constructed in 2565–2250 cal BC (95% probability;

*BuildDorchesterCharcoa*l; Fig. 3), probably in *2525–2420 cal BC (68% probability*). These date estimates are clearly compatible. Their medians vary by 31 years, which is within the 10–55 sapwood rings expected for prehistoric oaks more than 30 years in age from Britain (Hillam et al. 1987). Consequently, these two posterior estimates have been combined to provide a date estimate for the unitary construction of the monument. The combination also has good overall agreement (Acomb: 129, An: 50, n: 2), and suggests that the Dorchester palisaded enclosure was constructed in *2490–2360 cal BC (95% probability; BuildDorchester;* Fig. 4), probably in *2470–2430 cal BC (68% probability)*.



Posterior density estimate (cal BC)

Figure 3 Probability distributions of dates from the Dorchester palisade enclosure. Each distribution represents the relative probability that an event occurs at a particular time. For each of the dates two distributions have been plotted: one in outline, which is the result of simple radiocarbon calibration, and a solid one, based on the chronological model used. Distributions other than those relating to particular samples correspond to aspects of the model. For example, the distribution *'BuildDorchesterCharcoal'* is the estimated date when the monument was constructed derived from the charcoal samples. The large square brackets down the left-hand side along with the OxCal keywords define the overall model exactly.

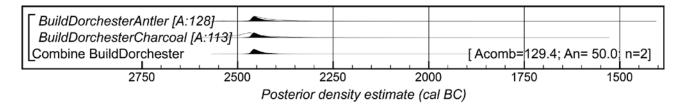


Figure 4. Combined probability distribution estimating the construction date of the Dorchester palisaded enclosure, if it is interpreted as representing a single planned construction

Discussion

This is the first palisaded enclosure in Britain to be dated with such precision and provides an orientating device for further exploration of the temporalities bound up in its construction and initial use.

The date estimate for its construction places the Dorchester palisaded enclosure into the latest Neolithic or Chalcolithic period, a time when major changes were on the near horizon, in southern England. It can be compared with the earliest Beaker burials in England, estimated to start in *2435–2325 cal BC (95% probability*, Jay et al. 2019, figs 2.2–2.8), probably in *2390–2340 cal BC (68% probability)*.

The date estimate for Greyhound Yard matches well with the Grooved Ware and flint assemblage found in the post-holes (Woodward *et al.* 1993, 315). The dating suggests that at least the excavated portion of the enclosure is likely to have been built in one episode, within the duration of a single human lifetime and probably considerably less, perhaps even within one year or season. This is supported by close similarities in the form of each post-pit (Woodward *et al.* 1993, 24, 30). A shallow gully outside the post-pits was rapidly infilled and may have been a method of laying out the circle. This also implies that the design was conceived as a unified whole, rather than the monument emerging from the repeated erected of posts at different times.

The construction would have been a memorable and vivid occasion for those involved, requiring forward planning to gather the antler picks, make ropes, and dig each posthole. Based on the plentiful pig bones found at the site, the site has parallels with nearby Mount Pleasant (Greaney et al. 2020), as well as the late Neolithic settlement and feasting sites of Durrington Walls and Marden (Woodward et al. 1993, 315). These bones were concentrated in the backfill of the post ramps and in the post-pipe infill suggesting that feasting took place at the time of the monument's construction.

Like most palisaded enclosures in Britain, the standing posts of the Dorchester enclosure were charred, with the postholes containing large quantities of charcoal. If this burning took place in one episode, such a conflagration would have provided a 'flashbulb memory' in the minds of people present; either a positive communal experience or a negative association of loss, conflict and destruction, or perhaps both depending on the person. The charcoal extended through the length of the post-pipes (Woodward *et al.* 1993, 24), which would have required intense burning and high temperatures. The smell and sound of the conflagration, although transient, would have remained long in the memory. An alternative

explanation is that the charring was undertaken deliberately during the construction of the enclosure, either to preserve the posts against rotting or for aesthetic reasons.

Although the timber component of a large portion of Greyhound Yard palisaded enclosure was constructed rapidly, and probably as a unified whole, this does not mean that the entire monument was of one single phase. The timber enclosure may have enclosed or monumentalised past activities within the dry coombe that it surrounds, closing off or changing the way this area could be approached or used, in a similar way to the construction of the large timber palisaded enclosure at Durrington Walls. Alternatively, it could have created an arena suitable for the construction of other structures or a place for ritual activities, which are now lost, or as yet undiscovered, below the streets of Dorchester. Although there remains much room for differing interpretations, the new chronology provides important new evidence in understanding the circumstances of such a monumental construction.

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Appendix

CQL2 code for the chronological model illustrated in Figure 3.

```
Options()
{
 Resolution=1;
 klterations=20000;
};
Plot()
{
 Phase("Dorchester palisaded enclosure")
 Sequence("Dorchester palisade posts")
 {
  Boundary("StartPosts");
  Phase("enclosure posts")
  {
   Phase("Greyhound Yard")
   {
   After("Bulked charcoal")
   {
    R_Date("HAR-6686", 4020, 80);
    R_Date("HAR-6687", 4090, 70);
    R_Date("HAR-6688", 4080, 70);
    R_Date("HAR-6689", 4140, 90);
   };
   R_Date("GrM-17426", 3975, 25);
   R_Date("GrM-17496", 4000, 25);
   After("Charcoal [4556]")
   {
    R_Date("GrM-17497", 4185, 25);
   };
   R Date("ETH-95263", 4010, 22);
   R_Date("ETH-95264", 4080, 22);
   };
   Phase("Church St")
   {
   After("Pit no. 828")
   {
    R Date("HAR-5508", 4060, 90);
   };
```

```
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```

```
};
 };
 Boundary("BuildDorchesterCharcoal");
 };
 Sequence("Dorchester palisade antlers")
 {
 Boundary("StartDorchesterAntler");
 Phase("antlers")
 {
  Phase("Greyhound Yard")
  {
  R_Combine("Antler [4947]")
  {
   R_Date("HAR-6663", 4020, 80);
   R_Date("GrM-17425", 4030, 30);
  };
   R_Combine("Antler [4166]")
   {
   R_Date("HAR-6664", 4070, 70);
   R_Date("ETH-95259", 3957, 22);
  };
  R Combine("Antler [4577]")
  {
   R_Date("GrM-17424", 3995, 30);
   R_Date("ETH-95260", 3986, 22);
  };
  R_Date("ETH-95261", 3911, 22);
  R_Date("ETH-95262", 4068, 30);
  };
  Phase("Church St")
  {
  Phase("Pit no. 828")
  {
   R_Date("GrM-17423", 3970, 25);
  };
  };
 };
 Boundary("BuildDorchesterAntler");
 };
};
};
```



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