Radiocarbon dates from Donnington Recreation Ground
by Seren Griffiths

Three radiocarbon measurements have produced prehistoric results from the site at Donnington Recreation Ground (table 1). Samples were pretreated using an Acid-Base-Acid method, combusted (Vandeputte *et al*. 1996; Freeman *et al*. 2010), graphitised (Slota *et al.* 1987) and measured by accelerator mass spectrometry (Xu *et al* 2004; Freeman *et al* 2010) at the Scottish Environment Research Council facility.

The prehistoric measurements were all produced on material from pit [2028], one of a circular arrangement of features. Two measurements were produced on elements of charred hazel nutshell, recovered from samples taken from different depths within context (2035). A measurement on hazel charcoal was produced from the straitgraphically later context (2025). The three results are inconsistent (T'=8.96; T'5%=6.0; df=2; Ward and Wilson 1978) indicating that different phases of activity may be represented at the site.

The result from the upper context is earlier than the results from the lower fill of the feature (Table 1; figure 1). Because the two results from the lower context are statistically consistent (T'0.1; T'5%=3.8; df=1; Ward and Wilson 1978), and therefore could be of the same actual age, it seems possible that the upper sample represents redeposited material.

The two results from the lower deposits may provide an age estimate for the formation of the parent contexts — charcoal-rich lenses. These results also may provide a *terminus ante quem* for the excavation of the monument.

There are insufficient data to produce a Bayesian model for the activity at the site; however it is most probable that each of the calibrated radiocarbon dates from the lower deposit represent material from the 30th century cal BC (figure 2). It is 78% probable that the activity associated with SUERC-512800 occurred in the 30th century cal BC; it is 77% probable that the activity associated with SUERC-51281 occurred in the 30th century cal BC. It is not possible to state how closely related in time the construction of the monument was with the age of the material within the pits. It seems probably however that the samples for these results relate to the *use* of the site in the 30th century cal BC.

The measurement SUERC-51283, from the upper fill of the feature produces the calibrated date range 3350–3010 cal BC (95% confidence), and could indicate a more complex history to the development of the site, or the surrounding area.

The Romano-British age for the *Hordeum* sp. grain sampled by SUERC-51282, may result from animal burrowing or tree rooting bringing later material into an earlier feature — the chronology of this feature is not well understood.

Table 1. Radiocarbon dates from Donnington Recreation Ground. Results have been calibrated using OxCal v4.2 (Bronk Ramsey 2009) and Intcal13 (Reimer *et al*. 2013). Calibrated ranges have been calculated using the intercept method (Stuvier and Reimer 1986).

Lab. number	Dated sample	Parent context	Radiocarbon result	δ13C	Calibrated date range (95% confidence)
SUERC-51280	Charred *Corylus avellana* nut shell	Lowest sample of lowest fill of pit [2028]. Sample comes from lense of rapidly deposited burnt material (unsure whether or not deliberate) within fill (2035) at base of pit. Sample depth 55.44m OD.	4325±35	-24.7%	3030–2890 cal BC
SUERC-51281	Charred *Corylus avellana* nut shell	Second lowest sample of lowest fill of pit [2028]. Sample comes from lense of rapidly deposited burnt material (unsure whether or not deliberate) within fill (2035) at base of pit. Sample depth 55.46m OD.	4338±35	-26.4%	3090–2890 cal BC
SUERC-51282	*Hordeum* sp. grain	Sample from mid-way through the single fill (2032) of northern pit [2022].	1926±35	-23.6 %	cal AD 1–140
SUERC-51283	*Corylus avellana* charcoal	Sample of burnt material higher up in fill of pit [2028]. Sample comes from deposit of burnt material fill (2025) which is stratigraphically above fill (2035). There are signs of possible burrowing in the area of (2025).	4459±35	-25.4%	3350–3010 cal BC

		Sample depth 56.10m OD.			

Figure 1. Radiocarbon dates from Donnington Recreation Ground. Distributions have been calculated using the probability method (Stuvier and Reimer 1983).

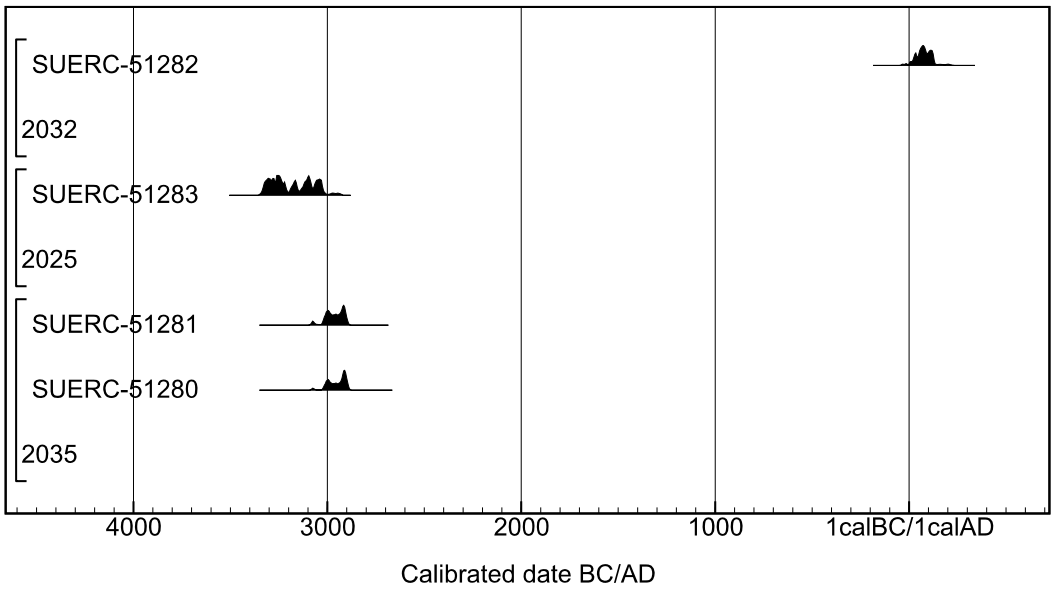
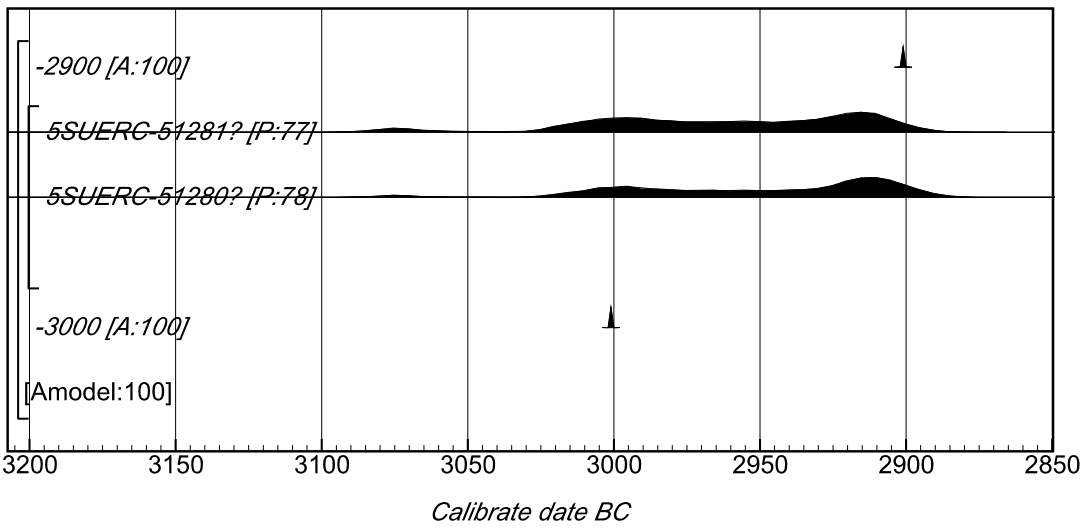


Figure 2. A calculation for the probability that each of the two radiocarbon dates from the lower fill of pit [2028] date from the 30th century BC.



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