[Supplementary material]

The chronology of Glastonbury Lake Village

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Technical details of radiocarbon and stable isotopic measurements from Glastonbury Lake Village

All 79 radiocarbon measurements (Tables S1–2) are conventional radiocarbon ages (Stuiver & Polach 1977). Two peat samples dated at the University of Cambridge Radiocarbon following the 1984 excavations were pretreated using the acid-alkali-acid protocol (Mook & Waterbolk 1985) although it is not known whether the acid-insoluble, alkali-soluble (humic acid) or acid- alkali-insoluble, (humin) fraction selected for dating. The samples were combusted to carbon dioxide as described by Switsur (1972), Switsur & West (1973) and Switsur *et al*. (1974), and then converted to benzene using a chromium-base catalyst following the method initially described by Tamers *et al.* (1965) and dated by liquid scintillation spectrometry (Switsur 1994). The radiocarbon ages were corrected for fractionation, although the measured values used have not been reported.

The nine samples of animal bone and antler dated at the Oxford Radiocarbon Accelerator Unit (OxA-) in 1995 were processed and measured using the procedures outlined in Law & Hedges (1989), Hedges *et al.* (1989, 1992) and Bronk Ramsey *et al.* (2000).

The 12 samples of waterlogged wood and single animal bone measured at Oxford in 2014–2016 were pretreated and combusted as described in Brock *et al*. (2010), graphitised (Dee & Bronk Ramsey 2000) and dated by AMS (Bronk Ramsey *et al.* 2004).

The 27 samples of waterlogged wood dated at the Scottish Universities Environmental Research Centre (SUERC-), East Kilbride were processed and dated as described in Dunbar *et al*. (2016). At ^{14}CHRONO, Queen's University, Belfast (UBA-), the 26 waterlogged wood samples were prepared, and dated as by AMS as described by Reimer *et al*. (2015). All samples were graphitised using zinc reduction (Slota *et al.* 1987), except for UBA-26534, -29335–6, -29752 and -29754, which were subject to hydrogen reduction (Vogel *et al.* 1984).

Quality assurance

All three laboratories (ORAU, SUERC, and ^{14}CHRONO) from which measurements were obtained in 2014–2016 maintain continuous programs of internal quality control in addition to participation in international inter-comparisons (Scott *et al*. 2010). These tests indicate no laboratory offset and demonstrate the validity of the precision quoted.

Seventeen pairs of replicate measurements on waterlogged wood are available on samples that were divided and submitted for dating to different laboratories between 2014 and 2016. Eleven of these pairs of measurements are statistically consistent at the 5 per cent significance level (Table S2; Ward & Wilson, 1978; Figure S1) two are inconsistent the 5 per cent significance level, but consistent at the 1 per cent significance level, and four are inconsistent at more than the 1 per cent significance level. This reproducibility is not within statistical expectation, and so the accuracy of these measurements has been assessed during the modelling process by their compatibility with related radiocarbon results.

Table S1. Existing radiocarbon and δ^{13}C measurements including redated animal bone samples from Glastonbury Lake Village. Replicate measurements have been tested for statistical consistency and combined by taking a weighted mean before calibration as described by Ward & Wilson (1978; T'(5%) = 3.8, ν = 1; except where stated).

Laboratory number	Material & context	δ^{13}C $_{IRMS}$ (‰)	δ^{15}N (‰)	C:N	Radiocarbon age (BP)	Reference
OxA-4744	Animal bone (B 198), perforated horse/ox tibia (rom Mound 27, Floor 4	−21.1			2230±45	Coles & Minnitt (1995)
OxA-32068	Replicate of OxA-4744	−21.6±0.2	8.3±0.3	3.3	2206±28	
^{14}C: 2213±24 BP, T'=0.2;						
OxA-4749	Antler (B 357), sawn from Mound 74, floor 3	−21.2			2475±45	Coles & Minnitt (1995)
P38733	Replicate of OxA-4749	Failed due to low yield				
OxA-4747	Animal bone (B407), sawn bone from Mound 75, Floor 3	−23.2			2485±50	Coles & Minnitt (1995)
P38734	Replicate of OxA-4747	Failed due to low yield				

Laboratory number	Material & context	$\delta^{13}C_{IRMS}$ (‰)	$\delta^{15}N$ (‰)	C:N	Radiocarbon age (BP)	Reference
OxA-4745	Animal bone (B 217), perforated horse/ox tibia from Mound 18, floor 4	−20.8			2350±45	Coles & Minnitt (1995)
OxA-4746	Animal bone (B 406), unidentified, perforated and polished, from under Mound 74	−21.1			2190±45	Coles & Minnitt (1995)
OxA-4748	Animal bone (B 326), ox tibia, sawn and longitudinally perforated from Mound 38, floor 3	−22.3			2345±45	Coles & Minnitt (1995)
OxA-4750	Animal bone (B 398), unidentified, 'bobbin' type D, from Mound 71, floor 2	−21.1			2180±45	Coles & Minnitt (1995)
OxA-4751	Antler (H 215), ?worked from Mound 5, floor 2	−23.6			2180±45	Coles & Minnitt (1995)

Laboratory number	Material & context	$\delta^{13}C_{IRMS}$ (‰)	$\delta^{15}N$ (‰)	C:N	Radiocarbon age (BP)	Reference
OxA-4752	Antler (H 244), shed from Mound 1	−23.4			2465±45	Coles & Minnitt (1995)
Q-2618	Fairly woody *Carex* and *Cladium* sedge fen peat directly under the clay structure of the causeway				1975±70	Housley (1988)
Q-2619	*Carex* and *Cladium* sedge fen peat directly under the grey clay with quartzite which abutted the causeway				1920±70	Housley (1988)

Table S2. New radiocarbon and $\delta^{13}C$ measurements from Glastonbury Lake Village (all samples were waterlogged wood). Replicate measurements have been tested for statistical consistency and combined by taking a weighted mean before calibration as described by Ward & Wilson (1978; T'(5%) = 3.8, ν = 1; except where stated).

Laboratory number	Sample reference & material dated	$\delta^{13}C_{IRMS}$ (‰)	Radiocarbon age (BP)
Structural Group 1: wall line of the 'floor 3' roundhouse from Mound 59			
SUERC-57878	T10. cf *Populus/Salix* (10 rings) outer 2 rings	−28.5±0.2	2194±29
OxA-33538	T10B. Replicate of SUERC-57878	−28.0±0.2	2148±26
^{14}C: 2169±20 BP, T'=1.4; $\delta^{13}C$: −28.3±0.15‰, T'=1.3			
UBA-27984	T12. *Populus/Salix* (approximately 16 rings) outer 2 rings	−26.8±0.22	2086±22
OxA-31643	T41 (A). *Populus/Salix* (20 rings) outer 2 rings	−25.4±0.2	2126±27
SUERC-57880	T41 (B). Replicate of OxA-31643	−27.7±0.2	2109±29
^{14}C: 2118±20 BP, T'=0.2; $\delta^{13}C$: −26.6±0.15‰, T'=66.1			
Structural Group 2: easternmost posts of the palisade line between Mounds 60 and 59			
GU36311	T15. cf *Populus/Salix* (16 rings) outer 2 rings		Failed on AMS
UBA-27985	T26. *Alnus* last two rings dated	−27.4±0.22	2213±25
OxA-33539	T26B. Replicate of UBA-27985	−27.3±0.2	2074±25
^{14}C: T'=16.7; $\delta^{13}C$: −27.4±0.15‰, T'=0.1			
SUERC-65754	T81. *Quercus* sp (9 rings) last 2 rings	−27.5±0.2	2174±30

Laboratory number	Sample reference & material dated	$\delta^{13}C_{IRMS}$ (‰)	Radiocarbon age (BP)
UBA-31253	T87. *Rhamnus* (16 rings) outer 2 rings	−29.3±0.22	2024±31
SUERC-57883	T88. cf *Populus/Salix* (12 rings) outer 2 rings	−29.2±0.2	2122±26
Structural Group 9: wall line of the 'floor 5' roundhouse from Mound 74. The earliest structure built on Mound 74			
SUERC-57881	T69. Indeterminate, outer two rings	−26.7±0.2	2122±29
SUERC-57882	T76. cf *Populus/Salix* (13 rings) outer 2 rings	−24.2±0.2	2138±29
UBA-27986	T73. Indeterminate, outer 2 rings	−24.2±0.22	2080±23
Structural Group 10: three oak posts that had been driven through the mortice holes of a substantial oak beam. These lie underneath the floors of Mound 75 and under the later floor of Mound 74			
UBA-28809	GLV 47, rings 1–5. *Quercus* sp. heartwood rings 1–5	−27.1±0.22	2177±39
UBA-28810	GLV 47, rings 9–13 – sample A. *Quercus* sp. heartwood (3) and sapwood (2) rings 9–13	−27.0±0.22	2172±31
OxA-31792	GLV 47, rings 9–13 – sample B. Replicate of UBA-28810	−25.1±0.2	2245±30
^{14}C: 2210±22 BP, T'=2.9; δ^{13}C: −26.0±0.15‰, T'=40.8			
SUERC-59108	GLV 48(1), rings 1–5. *Quercus* sp. heartwood rings 1–5	−24.6±0.2	2223±29
UBA-28811	GLV 48(1), rings 29–33 – sample A. *Quercus* sp. sapwood rings 29–33	−27.4±0.22	2140±25
OxA-31793	GLV 48(1), rings 29–33 – sample B. Replicate of UBA-28811	−25.2±0.2	2158±26
^{14}C: 2149±19 BP, T'=0.2; δ^{13}C: −26.2±0.15‰, T'=54.8			

Laboratory number	Sample reference & material dated	$\delta^{13}C_{IRMS}$ (‰)	Radiocarbon age (BP)
Structural Group 13: westernmost wall line of the series of roundhouse walls from Mound 9. Probably the latest structure built on Mound 9, relating to floors 1 and 2 from the Bulleid & Gray excavations.			
UBA-27987	T116. *Populus/Salix* (10 rings) outer 2 rings	−26.5±0.22	2102±23
SUERC-57887	T117. *Populus/Salix* (approximately 8 rings) outer 2 rings	−27.9±0.2	2170±26
OxA-33540	T117B. Replicate of SUERC-57887	−26.3±0.2	2092±27
OxA-33541	T117B. Replicate of SUERC-57887	−27.4±0.2	2157±30
^{14}C: 2143±16 BP, T'=5.7; T'(5%)=6.0; ν=2; δ^{13}C: −27.2±0.12‰, T'=33.5; T'(5%)=6.0; ν=2			
UBA-27990	T185 (A). *Populus/Salix* (6–7 rings) outer 2 rings	−26.1±0.22	2102±23
OxA-31605	T185 (B). Replicate of UBA-27990	−24.0±0.2	2117±28
^{14}C: 2108±18 BP, T'=0.2; δ^{13}C: −25.0±0.15‰, T'=49.9			
SUERC-65761	T186. Indeterminate, outer 2 rings	−26.7±0.2	2151±30
UBA-31252	T188. cf *Populus/Salix* (> 11 rings) outer 2 rings	−25.4±0.22	1993±31
Structural Group 14: easternmost wall line of the series of roundhouse walls from Mound 9. Probably relating to floors 7, 6, and 5 from the Bulleid & Gray excavations.			
UBA-27991	T192. *Alnus* (10 rings) outer 2 rings	−30.1±0.22	2067±25
SUERC-57890	T193. cf *Populus/Salix* (6 rings) outer 2 rings	−26.2±0.2	2143±29
SUERC-57891	T194. *Populus/Salix* (13 rings) outer 2 rings	−28.4±0.2	2175±29

Laboratory number	Sample reference & material dated	$\delta^{13}C_{IRMS}$ (‰)	Radiocarbon age (BP)
OxA-33542	T194B. Replicate of SUERC-57891	−30.4±0.2	2080±26
^{14}C: 2123±20 BP, T'=6.0; δ^{13}C: −29.5±0.15‰, T'=45.2			
Structural Group 15: ?earliest wall line of a series of roundhouse walls from Mound 9. Probably relating to floors 8 and 9 from the Bulleid & Gray excavations			
UBA-27989	T157. Indeterminate outer two rings	−29.7±0.22	2101±35
Structural Group 16: ?earliest wall line of a series of roundhouse walls from Mound 9. Probably relating to floors 8 and 9 from the Bulleid & Gray excavations			
UBA-27988	T149. Indeterminate, outer 2 rings	−29.0±0.22	2103±33
SUERC-57888	T150. Indeterminate, outer 2 rings	−25.8±0.2	2157±25
SUERC-57889	T152. Indeterminate, outer 2 rings	−28.9±0.2	2151±29
Structural Group 23: east-west line of collapsed palisade timbers, that with SG 21 probably formed the contemporary walking surface on the inside of the palisade			
SUERC-65762	T242. cf. *Populus/Salix* (>32 rings) outer ring	−26.6±0.2	2113±30
UBA-31250	T244. *Alnus* sp. (> 15 rings) outer 2–3 rings	−29.2±0.22	2078±33
UBA-31249	T253. *Alnus* sp. (approximately 25 rings) outer 2 rings	−29.2±0.22	2044±32
Structural Group 25: east-west line of collapsed palisade timbers that appeared to be a retaining deposit of brushwood on its northern side. Other palisade lines (Structural Groups 26–29) appear to post-date this collapsed structure.			

Laboratory number	Sample reference & material dated	$\delta^{13}C_{IRMS}$ (‰)	Radiocarbon age (BP)
UBA-27993	T272a. *Populus/Salix* sp. (13 rings) outer 2 rings	−28.4±0.22	2018±26
SUERC-57893	T272b. Replicate of UBA-27993	−28.6±0.2	2121±29
^{14}C: 2064±20 BP, T'=7.0; $\delta^{13}C$: −28.5±0.15‰, T'=0.5			
SUERC-59113	T275. *Alnus* sp. (approximately 15 rings) outer 2 rings	−29.2±0.2	2141±25
UBA-28813	T277. *Alnus* sp. (approximately 10 rings) outer 2 rings	−29.9±0.22	2069±29
Structural Group 27: east-west line of collapsed roundwood palisade timbers that slumped southwards, i.e. into the surrounding wetland, and appears to be later than SG 29			
SUERC-65765	T305a. *Alnus* sp. (>16 rings) outer 2 rings	−29.1±0.2	2117±30
UBA-31246	T305b. Replicate of SUERC-65765	−29.2±0.22	1988±26
^{14}C: 2044±27 BP, T'=10.6; $\delta^{13}C$: −29.2±0.15‰, T'=0.1			
UBA-31248	T292. *Populus/Salix* sp. (approximately 14 rings) outer 2 rings	−29.5±0.22	2021±27
Structural Group 28: east-west line of collapsed roundwood palisade timbers that slumped southwards, ie into the surrounding wetland. Timbers of SG 27 and 28 both appear to overlie the collapsed 'birch' palisade (SG29)			
UBA-27994	T297a. Indeterminate, outer 2 rings	−28.6±0.22	2116±29
SUERC-57897	T297b. Replicate of UBA-27994	−28.5±0.2	2085±29
^{14}C: 2101±21 BP, T'=0.6; $\delta^{13}C$: −28.6±0.15‰, T'=0.1			
UBA-27995	T299. *Alnus* sp. (6 rings) outer 2 rings	−31.4±0.22	1963±30

Laboratory number	Sample reference & material dated	$\delta^{13}C_{IRMS}$ (‰)	Radiocarbon age (BP)
OxA-33544	T299B. Replicate of UBA-27995	−30.3±0.2	2038±25
^{14}C: 2008±20 BP, T'=3.7; δ^{13}C: −30.8±0.15‰, T'=13.7			
SUERC-57898	302a. *Alnus* sp. (6 rings) outer 2 rings	−29.9±0.2	2069±25
UBA-27996	302b. Replicate of SUERC-57898	−30.2±0.22	2123±26
^{14}C: 2095±19 BP, T'=2.2; δ^{13}C: −30.0±0.15‰, T'=1.0			
SUERC-65769	T306a. *Alnus* sp. (>16 rings) outer 2 rings	−29.3±0.2	2131±30
UBA-31245	T306b. Replicate of SUERC-65769	−30.1±0.22	1999±26
^{14}C: 2056±20 BP, T'=11.1; δ^{13}C: −29.7±0.15‰, T'=7.2			
Structural Group 29: east-west line of collapsed roundwood palisade timbers that slumped southwards, i.e. into the surrounding wetland. This palisade appears to be later than SG 25 and earlier than SG 27 and 28			
OxA-31644	T257. Indeterminate, outer 2–3 rings	−27.8±0.2	2162±26
UBA-27992	T258. Indeterminate, outer 2–3 rings	−29.0±0.22	1999±28
OxA-33543	T258B. Replicate of UBA-27992	−29.3±0.2	2026±26
^{14}C: 2014±20 BP, T'=0.5; δ^{13}C: −29.2±0.15‰, T'=1.0			
SUERC-57892	T259. Indeterminate, outer 2–3 rings	−27.9±0.2	2116±27
SUERC-65763	T262. cf *Alnus* sp. (>22 rings) outer 2 rings	−31.9±0.2	2102±30
SUERC-65764	T301a. *Alnus* sp. (13 rings) outer 2 rings	−30.5±0.2	2128±30

Laboratory number	Sample reference & material dated	$\delta^{13}C_{IRMS}$ (‰)	Radiocarbon age (BP)
UBA-31247	T301b. Replicate of SUERC-65764	−30.2±0.22	2062±39
^{14}C: 2104±24 BP, T'=1.8; δ^{13}C: −30.4±0.15‰, T'=1.0			
Structural Group 30: east-west orientated line of roundwood logs laid horizontally that overlies the collapsed woven palisade (SG29)			
SUERC-65759	T138. *Populus/Salix* sp. (>8 rings) outer 2 rings	−27.2±0.2	2117±30
SUERC-65755	T141a. cf *Alnus* sp. (16 rings) outer 2 rings	−28.4±0.2	2103±30
UBA-31251	T141b. Replicate of SUERC-65755	−25.4±0.22	2030±27
^{14}C: 2063±21 BP, T'=3.3; δ^{13}C: −27.0±0.15‰, T'=101.8			
Structural Group 31: roughly east-west orientated group of horizontally timbers which overlies the palisade SG 29			
SUERC-65760	T165. *Populus/Salix* sp. (>18 rings) outer 2 rings	−29.3±0.2	2103±30
UBA-31254	T167. *Populus/Salix* sp. (23 rings) outer 2 rings	−26.6±0.22	2067±33
Reburied: ?timber from the east side of Mound VI, excavated by Bulleid and Grey and reburied on-site			
SUERC-59112	GLV 206, rings 1–5. *Quercus* sp. heartwood rings 1–5 of a 157 rings sequence	−24.9±0.2	2425±29
UBA-28812	GLV 206, rings 153–157. *Quercus* sp. heartwood rings 153–157 of a 157 rings sequence	−26.8±0.22	2154±24

Table S3. Key parameters for Glastonbury Lake Village derived from the model (Model 2) shown in Figure 5.

Parameter name	*Parameter description*	*Highest Posterior Density interval (95% probability) cal BC*	*Highest Posterior Density interval (68% probability) cal BC*
first_build_GLV	Boundary parameter estimating the establishment of Glastonbury Lake Village	*205–150*	*185–155*
SG1	Date parameter estimating the construction of wall line of the 'floor 3' roundhouse from Mound 59	*175–105*	*170–130*
SG2	Date parameter estimating the construction of easternmost posts of the palisade line between Mounds 60 and 59	*155–50*	*100–65*
SG10	Date parameter estimating the when the last of the oak posts were driven through the mortice holes of an oak beam that lies underneath the floors of Mound 75 and under the later floor of Mound 74	*185–75*	*175–125*
SG9	Date parameter estimating the construction of the wall line of the 'floor 5' roundhouse from Mound 74	*160–60*	*130–70*
floors_8_9	Date parameter estimating the construction of the westernmost wall line of the series of roundhouse walls from Mound 9 (floors 8 and 9 from the Bulleid & Gray excavations)	*180–135*	*170–145*

Parameter name	***Parameter description***	***Highest Posterior Density interval (95% probability) cal BC***	***Highest Posterior Density interval (68% probability) cal BC***
floors_7_6_5	Date parameter estimating the construction of the westernmost wall line of the series of roundhouse walls from Mound 9 (floors7–5 from the Bulleid & Gray excavations)	*160–105*	*145–115*
floors_1_2	Date parameter estimating the construction of the westernmost wall line of the series of roundhouse walls from Mound 9 (floors 1 and 2 from the Bulleid & Gray excavations)	*125–50*	*100–65*
SG23	Date parameter estimating the construction of the east-west line of collapsed palisade timbers, that probably formed the contemporary walking surface on the inside of the palisade	*180–140*	*170–150*
SG25	Date parameter estimating the construction of the east-west line of collapsed palisade timbers that appeared to be a retaining deposit of brushwood on its northern side	*165–120*	*155–130*
SG29	Date parameter estimating the construction of the east-west line of collapsed roundwood palisade timbers that slumped southwards	*145–95*	130–105
SG27	Date parameter estimating the construction of the east-west line of collapsed roundwood palisade timbers that slumped southwards	*115–65*	*95–70*

Parameter name	***Parameter description***	***Highest Posterior Density interval (95% probability) cal BC***	***Highest Posterior Density interval (68% probability) cal BC***
SG28	Date parameter estimating the construction of the east-west line of collapsed roundwood palisade timbers that slumped southwards	*115–65*	*95–70*
SG31	Date parameter estimating the construction of the east-west orientated line of roundwood logs laid horizontally that overlies the collapsed woven palisade (SG 29)	*120–65*	*105–75*
SG30	Date parameter estimating the construction of the east-west orientated line of roundwood logs laid horizontally that overlies the collapsed woven palisade (SG29)	*90–45*	*80–60*
last_build_GLV	Boundary parameter estimating the last constructional event at Glastonbury Lake Village	*85–25*	*75–45*

Table S4. Key parameters for Glastonbury Lake Village phases as defined by Coles & Minnitt (2000) derived from the model (Model 3) shown in Figure 7.

Parameter name	***Parameter description***	***Highest Posterior Density interval (95% probability unless otherwise stated) cal BC unless stated***	***Highest Posterior Density interval (68% probability unless otherwise stated) cal BC***
start_early	Boundary parameter estimating the beginning of the Early phase	*210–145*	*180–155*
transition_early/middle	Boundary parameter estimating the transition from the Early to Middle phase	*175–145*	*165–150*
transition_middle/late	Boundary parameter estimating the transition from the Middle to Late phase	*160–130*	*155–140*
transition_late/final	Boundary parameter estimating the transition from the Late to Final phase	*155–140 (4%) or 100–40 (91%)*	*85–55*
end_final	Boundary parameter estimating the end of the Final phase	*155–120 cal BC (3%)* or *100 cal BC–cal AD 90 (92%)*	*80–20*

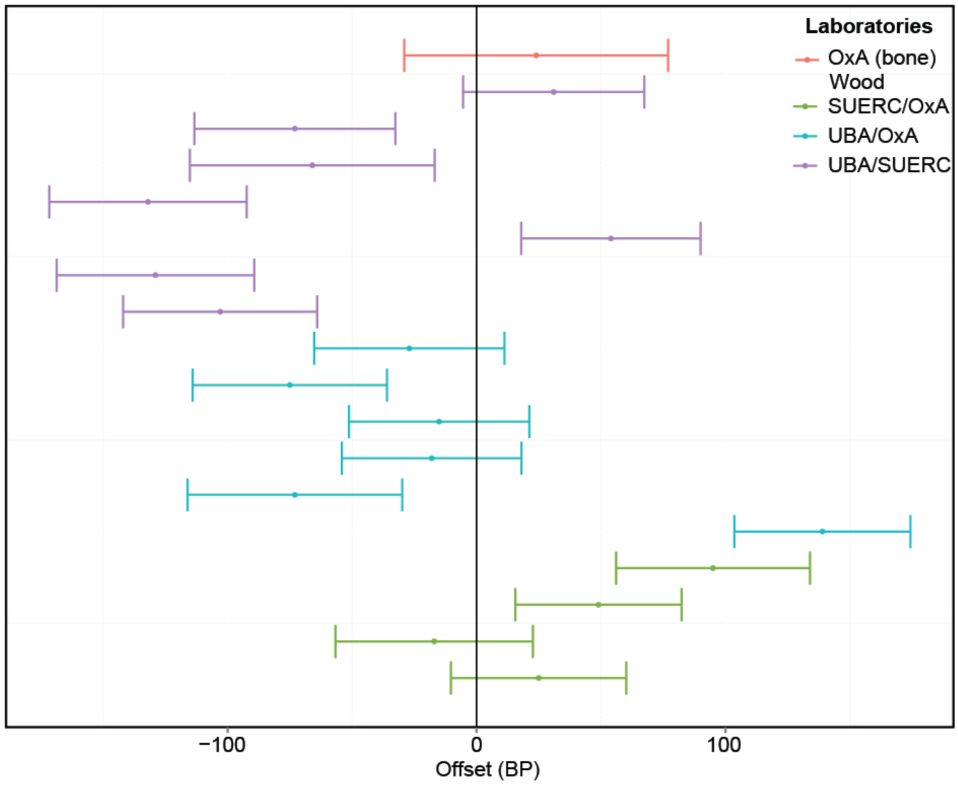

Figure S1. Offsets between radiocarbon measurements on the replicate measurements, bone and waterlogged wood (error bars are those for 68% confidence).

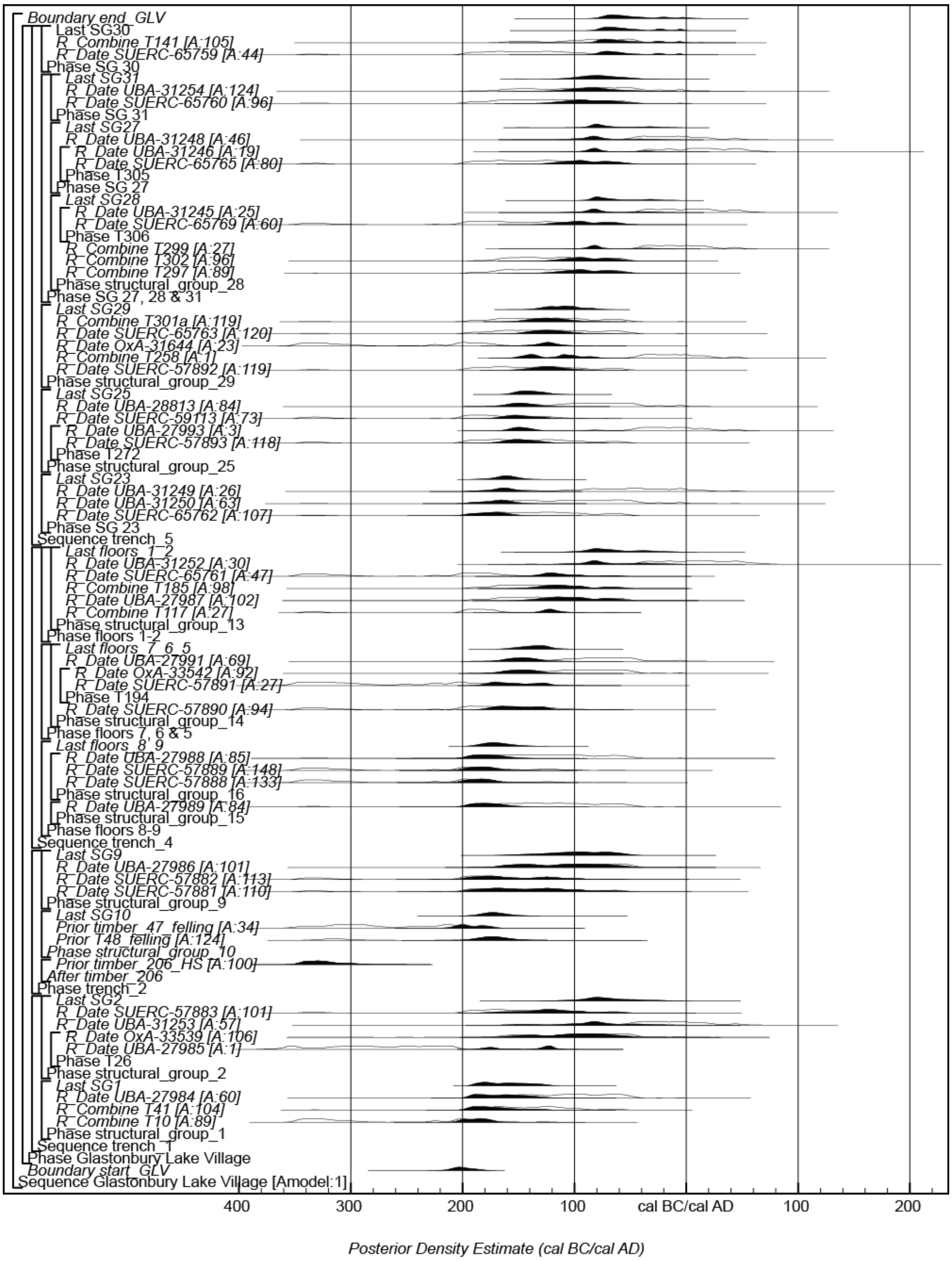

Figure S2. Probability distributions of dates from the Glastonbury Lake Village (Model 1a); each distribution represents the relative probability than an event occurs at a particular time. For each of the radiocarbon dates two distributions have been plotted, one in outline, which is the result of simple radiocarbon calibration, and a solid one, which is based on the chronological model used. The large brackets down the left-hand side along with the OxCal keywords define the model exactly.

The chronology of Meare Village East and Meare Village West

Twenty seven radiocarbon measurements (Table S5) are available from Meare Village East (six) and Meare Village West (21). The samples were all dated at ARE Harwell between 1978 and 1987. All the samples were pretreated using an acid-base-acid protocol (Otlet & Slade 1974), 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). The samples were dated by liquid scintillation spectrometry using methods described in Otlet (1977) and Otlet and Warchal (1978).

Table S5. Meare Lake Villages, east and west: radiocarbon and δ^{13}C measurements.

Laboratory Number	**Material & context**	$^{13}C_{IRMS}$ (‰)	**Radiocarbon age (BP)**	**Reference**
Meare Village West				
Below occupation				
HAR-3856	Peat, surface of peat, below wood in NW tip		2810±70	Coles (1987)
HAR-3740	Wood, unidentified, from the peat surface, to the north-west of the main occupation floor. Remaining subsample identified charcoal/waterlogged wood, remaining subsample now dry and in poor condition; *Quercus* sp. (100%) (Bayliss *et al*. 2012: xxxvii)	−29.6	2810±70	Coles (1987); Jordan *et al*. (1994)
HAR-3633	Peat, from the top of the peat surface underlying the occupation	−29.2	2700±70	Coles (1987); Jordan *et al*. (1994)
HAR-3546	Peat, from the peat surface (fissured) which mostly underlies the major occupation	−28.8	2410±80	Coles (1987); Jordan *et al*. (1994)
HAR-3634	Peat with charcoal, from a black earth occupation deposit	−27.6	2230±60	Coles (1987); Jordan *et al*. (1994)
HAR-2620	Peat, from a raised bog peat underlying the settlement	−26.4	2340±80	Orme *et al*. (1981); Coles (1987); Jordan *et al*. (1994)

Northern mound: monolith B				
HAR-3896	Peat, from 3.14–3.16m OD; upper occupation deposit	−27.8	2220±90	Coles (1987); Jordan *et al*. (1994)
HAR-3892	Peat, from 3.10–3.12m OD; lower occupation deposit	−28.3	1870±70	Coles (1987); Jordan *et al*. (1994)
HAR-3891	Peat, from 3.04–3.6m OD; just below and prior to occupation	−28.0	2210±70	Coles (1987); Jordan *et al*. (1994)
HAR-3864	Peat, from 2.98–3.0m OD; just below occupation	−28.6	2370±70	Coles (1987); Jordan *et al*. (1994)
Black earth				
HAR-3535	Peat, black earth with charcoal from beneath central floor, associated with large storage vessel	−26.8	2250±70	Coles (1987); Jordan *et al*. (1994)
HAR-3489	Waterlogged wood, *Alnus* sp. from planking in a gully between mounds	−29.7	2200±70	Coles (1987); Jordan *et al*. (1994)
HAR-3719	Waterlogged wood, unidentified, from under the central floor	−28.0	2190±70	Coles (1987); Jordan *et al*. (1994)
HAR-3745	Charcoal in clay soil (black earth), from the central occupation floor	−28.5	2080±60	Coles (1987); Jordan *et al*. (1994)
Occupation				

HAR-3744	Waterlogged wood and peat from the central peat floor	−27.3	2280±80	Coles (1987); Jordan *et al*. (1994)
HAR-3492	Waterlogged wood, *Ulmus* sp. plank associated with a hearth, *c*. five years growth dated	−25.6	2130±60	Orme *et al*. (1981); Coles (1987); Jordan *et al*. (1994)
HAR-3521	Charred wood, from a plank under a slab on the central hearth on the northern mound	−25.0	2830±100	Coles (1987); Jordan *et al*. (1994)
HAR-3693	Waterlogged wood, *Ulmus* sp. from near a hearth on the occupation floor	−23.3	2170±80	Coles (1987); Jordan *et al*. (1994)
HAR-2654	Waterlogged wood, brushwood, from the lowest levels of the settlement	−27.6	2200±70	Orme *et al*. (1981); Coles (1987); Jordan *et al*. (1994)
HAR-2668	Waterlogged wood, *Quercus* sp. (80–100 years old) from a stake	−27.7	2130±90	Orme *et al*. (1981); Coles (1987); Jordan *et al*. (1994)
Meare Village East				
MVE: 82				
HAR-7066	Sediment, detrital mud from 0.54–0.55m below the top of the monolith, from approximately the middle of the local pollen assemblage zone MVE.6	−31.8	2660±70	Coles 1987; Bayliss *et al*. (2012)

HAR-7065	Peat, woody detritial, from 1.14–1.15m below the top of the monolith, the MVE.3/MVE.4 boundary	−29.1	4160±70	Bayliss *et al*. (2012)
HAR-7064	Peat, woody, from 1.88–1.89m below the top of the monolith, the end of the local pollen assemblage zone MVE.1	−30.0	5270±70	Bayliss *et al*. (2012)
Mound 19				
HAR-5000	Charcoal, from context 82.19, a charred layer below the upper hearth	−26.9	2080±60	Walker *et al*. (1987)
HAR-5001	Charcoal, from context 82.1073, from inner surface	−27.4	1740±60	Walker *et al.* (1987)
HAR-5002	Charcoal, from context 82.1094, a charred layer below the lower hearth	−27.0	2090±70	Walker *et al.* (1987)

Meare Village West: monolith west of central floor

Three radiocarbon measurements were obtained from a monolith west of the central floor (Orme *et al*. 1981: 38, fig. 31; Jordan *et al.* 1994: 172). Although the stratigraphic relationship of these samples is recorded; HAR-3633 is from peat below the black earth, HAR-3634 is from the lower black earth and HAR-3546 is from peat above the lower black earth, there is no record of their height OD. The model shown in Figure S3 thus only includes them in a simple Sequence (text in `Courier` denotes OxCal CQL2 keywords (http://c14.arch.ox.ac.uk/). This model has poor overall agreement (Amodel=29) and therefore the simple calibrated distribution for HAR-3633 has been included in the model (Figure 8) for the chronology of Meare Village West as providing a *terminus post quem* for the overlying black earth.

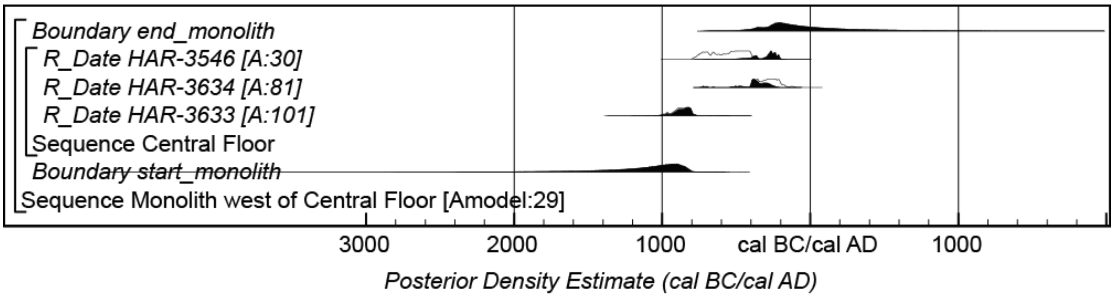

Figure S3. Probability distributions of dates from Meare Village west: monolith west of Central Floor. The format identical to Figure S2.

Meare Village West: monolith from northern mound

Four radiocarbon determinations were obtained from a monolith taken for palaeobotanical investigations from the Northern Mound monolith (Orme *et al*. 1981: 38, fig. 27 & 31; Jordan *et al.* 1994: 172–73). The age-depth model (Figure S4) has been constructed using the program OxCal v4.3 (Bronk Ramsey 2009a; Bronk Ramsey & Lee 2013) and the atmospheric calibration curve for the northern hemisphere published by Reimer *et al*. (2013). The Poisson process model (P_Sequence; Bronk Ramsey 2008) employs a variable *k* parameter (Bronk Ramsey & Lee 2013) with the overall age-depth model defined as P_Sequence ("MVWN",1,0.5,U(-2,2)), with k_0 (the base *k* parameter) =1cm^{-1}, the interpolation rate = 2cm^{-1} (output from the model given every 2cm), and variability in *k is* allowed between a factor of 10^{-2} and 10^{2}.

Outlier analysis (Christen 1994; Bronk Ramsey 2009b) was also used to identify and proportionally weight any statistical outliers in the data. Each radiocarbon measurement has been given a prior outlier probability of 5 per cent. Two of the radiocarbon dates have posterior outlier probabilities of more than 5 per cent (*HAR-3896*; *O: 52/5*, and *HAR-3892; O: 42/5*) which is more than would be expected in a dataset of this size where all the data are compatible with the model.

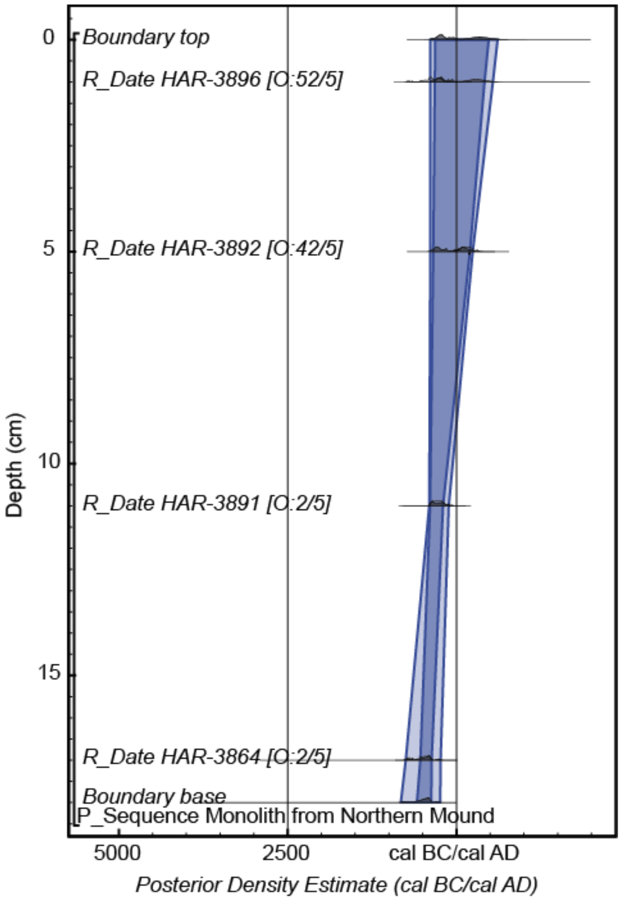

Figure S4. Bayesian age-depth general outlier model for the chronology of the sediment sequence from the Northern Mound monolith (P_Sequence, (k = 0.01–100), General Outlier model; Bronk Ramsey 200; Bronk Ramsey & Lee 2013). The coloured bands shows the estimated date of the sediment at the corresponding depth, at 95% and 68% probability. *For radiocarbon dates, the lighter distribution is the result of simple calibration and the darker distribution is the posterior density estimate provided by the model.*

Meare Village East: monolith MVE82

Four radiocarbon determinations were obtained from a monolith taken from a section on the eastern side of the site in 1982 (Caseldine 1986) to provide a chronology for the palaeobotanical analysis. The age-depth model (Figure S5) has been constructed using the program OxCal v4.3 (Bronk Ramsey 2009a; Bronk Ramsey & Lee 2013) and the atmospheric calibration curve for the northern hemisphere published by Reimer *et al*. (2013). The Poisson process model (P_Sequence; Bronk Ramsey 2008) employs a variable *k* parameter (Bronk Ramsey & Lee 2013) with the overall age-depth model defined as P_Sequence ("MVWN",1,0.25,U(-2,2)), with k_0 (the base *k* parameter) =1cm^{-1}, the interpolation rate = 4cm^{-1} (output from the model given every 4cm), and variability in *k is* allowed between a factor of 10^{-2} and 10^{2}. Outlier analysis (Christen 1994; Bronk Ramsey 2009b) was also used to identify and proportionally weight any statistical outliers in the data. Each radiocarbon measurement has been given a prior outlier probability of 5 per cent. None of the radiocarbon dates have posterior outlier probabilities of more than 5 per cent, which is what would be expected in a dataset of this size where all the data are compatible with the model.

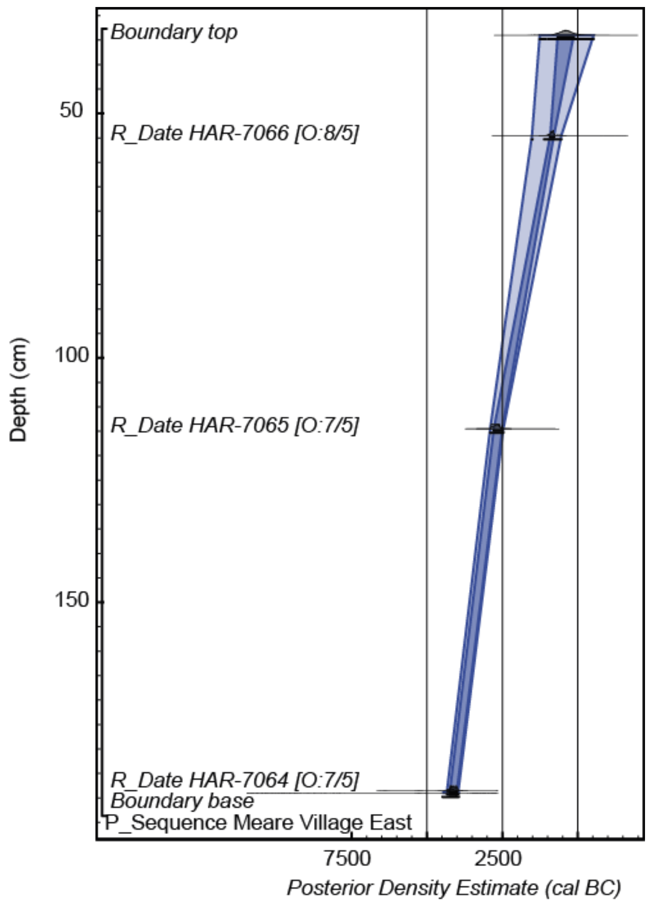

Figure S5. Bayesian age-depth model for the chronology of the sediment sequence from the MVE.82 monolith from the east side of the site (P_Sequence (k = 0.01–100), General Outlier model; Bronk Ramsey (2008); Bronk Ramsey & Lee 2013).

The chronological model for Meare Village East and Meare Village West

The model shown in Figure 8 incorporates the broad stratigraphic sequence outlined in Coles (1987: tab.7.5), from bottom to top; below occupation, black earth and occupation. Five dates derive from peat deposits that are stratigraphically below the peat deposits below the black earth; HAR-2620, HAR-3633, HAR-3740, HAR-3856, and HAR-3891, with a further five from the black earth; HAR-3489, HAR-3535, HAR-3719, HAR-3745, and HAR-3896). Given the back earth is a deposit described 'as the uppermost level of peat, heavily churned and worked by occupation, weathered, and fissured through the effects of exposure and animal activity' (Coles 1987: 45) the dates have only been included as providing *termini post quos* for the 'occupation' of Meare Village West. Six dates derive from samples from occupation deposits; four are included as *termini post quos* given they could have an age-at-death offset (HAR-3492, 3521, 3693, and 3744), two (HAR-2654 and HAR-2668) provide estimates for activity. Three bulk unidentified charcoal samples (HAR-5000–2) provide *termini post quos* for activity on Mound 19 part of Meare Village east although HAR-5001 is excluded given its late date for a sample at the base of the sequence.

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