

1.1 Dating

Radiocarbon

Introduction

- 1.1.1 Seven radiocarbon determinations were obtained for the assessment stage from the Rafter Laboratory, New Zealand (AMS) and from the Scottish Universities Research And Reactor Centre, Scotland (Conventional). The aims of the dating programme were to confirm the expected date of contexts key to the overall site interpretation and to provide a date for significant features that had no artefactual dating evidence (e.g. unaccompanied burials). The results were all calibrated using the OxCal program and are presented in Table 4. The potential for further dating is discussed in Section 4.4 (Dating Potential), below.

Selected samples

- 1.1.2 Samples were selected from the post fills of the Neolithic long house and from a series of human and animal burial deposits at White Horse Stone and West of Boarley Farm.

Results (see Table 4)

Neolithic

- 1.1.3 Two AMS dates (NZA-11463-4) were obtained on material recovered from a single posthole fill of the Neolithic long house. The two dates are consistent and fall within the first half of the 4th millennium cal BC. They confirm the date of the building as early Neolithic. One of the dates was on cereal grain and this also provides a date for early Neolithic cereal cultivation.

Iron Age

- 1.1.4 Two dates were obtained for features associated with the early Iron Age settlement. One date (GU-9088) was obtained on charred cereal that had been placed within a pottery vessel. This vessel formed part of an assemblage of objects that had been placed with a cremation deposit within the pit. The pottery vessels were thought to be of transitional E-MIA date, one of which was associated with an important group of ironwork. The single determination confirms the suggestion that the date of this deposit falls towards the end of the early Iron Age and perhaps within the start of the middle Iron Age.
- 1.1.5 The second determination (GU-9089) on a human burial has a similar result, again indicating a date within the start of the middle Iron Age.

Saxon

- 1.1.6 Three determinations were obtained on bone from otherwise undated burials. One date (GU-9013) was obtained on a female inhumation burial adjacent to the Pilgrim's Way track. The result indicates a mid-late Saxon date for the burial and also provides a *terminus post quem* for this section of the Pilgrim's Way and a key date for the upper part of the dry valley colluvial sequence.
- 1.1.7 Two dates (GU-9086-7) were obtained on bone from two of a series of animal burials from West of Boarley Farm. One burial had been dated by association with late Iron Age pottery and others were considered to be of this date. However, the calibrated results demonstrate both burials to be of mid-late Saxon date.

Table 4: Radiocarbon results obtained during the assessment (calibrated using OxCal program)

Lab ref	Context	Sample	Date	1 σ	2 σ	Comment
NZA-11463	ARC WHS98 ctx 4818/1 (early Neolithic house posthole)	Charred cereal	4911 \pm 60	3780-3640 cal BC	3940-3530 cal BC	From post fill of early Neolithic structure. Confirms date of structure.
NZA-11464	ARC WHS98 ctx 4818/2 (early Neolithic house posthole)	Charred plant, alnus/corylus	4974 \pm 60	3910-3700 cal BC	3950-3640 cal BC	From post fill of early Neolithic structure. Confirms date of structure.
GU-9013	ARC WHS98 ctx 9025 (Inhumation adjacent to Pilgrims way)	Human bone, femur	1190 \pm 60	Cal AD 720-940	Cal AD 680-970	Indicates burial to be mid-late Saxon
GU-9086	ARC BFW98 ctx 1034 (Cattle burial)	Cattle bone	1150 \pm 50bp	Cal AD 810-960	Cal AD 770-1000	Indicates burial to be mid-late Saxon
GU-9087	ARC BFW98 ctx 1060 (Horse burial)	Horse bone	1210 \pm 50bp	Cal AD 720-890	Cal AD 670-950	Indicates burial to be mid-late Saxon
GU-9088	ARC WHS98 ctx 6130 (Pit with cremation deposit)	Charred grain from cremation deposit within pit	2270 \pm 60bp	400-210 cal BC	490-160 cal BC	Supports the suggestion that the deposit is transitional EMIA
GU-9089	ARC WHS98 ctx 2291 (Inhumation burial)	Human bone	2250 \pm 70bp	400-200 cal BC	420-100 cal BC	Supports the suggestion that the burial could be EMIA or MIA

Optically stimulated luminescence

- 1.1.8 A series of four dates were obtained on a sequence of late Glacial deposits in the White Horse Stone dry valley section. Two were on solifluction deposits and two were on samples taken from the Allerød soil (See Appendix 16 for a discussion of the results).

1.2 Dating Potential

Radiocarbon

- 1.2.1 Seven dates were obtained during the assessment stage (see section 3.4, above) and these results highlight the potential of undertaking further dating to clarify existing date ranges provided by artefactual and ecofactual evidence, to bracket stratigraphic sequences and phases and to determinate the age of those features of uncertain date (e.g. burials).
- 1.2.2 The following features have the potential for radiocarbon dating:
- The Allerød soil and possible undisturbed Neolithic soil within the dry valley sequence, although this would involve identifying suitable charcoal samples that might not provide very precise dates.
 - Further dates on the Neolithic structure and those associated features considered to be contemporary within the White Horse Stone Dry Valley. Ideally further dates should be obtained on samples recovered from those features directly associated with the main structure and on features that are known to pre and post date the structure. If sufficient suitable samples can be found then it might be possible to firmly establish and refine the dating using the OxCal program, although this is likely to be limited by the paucity of sample material (see Appendix 10-11). There is also the possibility of dating a number of features within the dry valley that are thought to be contemporary with the building or of early Neolithic date (samples 289, 634, 739, 691 and 742; also animal bone from context 4904).
 - To date the possible second Neolithic structure at Pilgrim's Way. The only finds from this structure were of Neolithic date. There is limited scope to obtain a date for this structure as only wood charcoal was recorded from the fill of one of the postholes (806).
 - Dates for the Peterborough Ware and Grooved Ware associated pits at White Horse Stone and Pilgrim's Way (White Horse Stone samples 676, 673, 637 and 639; also animal bone from contexts 4967, 4969, 4997 and 4996; Pilgrim's Way context 965 and 967).
 - Dates for the middle Bronze Age structures and ditch (animal bone contexts 4016, 4044, 4100, 4203 and 7070).
 - Dates for the late Bronze Age pit deposits (e.g. 5426 sample 921 or 926).
 - Further dates could be obtained on deposits associated with the Iron Age settlement. This could include the remaining burials to demonstrate whether they are contemporary or later than the main phase of use of the site.
 - Dates could be obtained to confirm the age and date range of the ironworking activity. The remains of charcoal, interpreted as fuel, would provide suitable sample material. It should be possible to demonstrate whether this activity pre- or post-dates 400 cal BC. If it can be demonstrated that iron objects (e.g. the cremation group) from the site were possibly made on the site (see Assessments 5.1 and 7.1), then it will also be important to prove that these deposits were broadly contemporary (i.e. that the metalworking is also transitional early-middle Iron Age).
 - The unaccompanied cremation deposits at Pilgrim's Way (Charred plant remains).

- The remaining animal burials at West of Boarley Farm to demonstrate whether they are contemporary with the middle Saxon ones or indeed belong to the late Iron Age (horse and neo-natal pig).
- To confirm the date of selected settlement features at West of Boarley Farm as middle Saxon.
- Dates obtained on burnt residues adhering to vessel surfaces could resolve the date of the problematic vessel (?Saxon or LIA) forms and shell-tempered fabrics at West of Boarley Farm.

OSL dating

- 1.2.3 Four dates were obtained on samples taken from Profile G at White Horse Stone. The objective was to provide a date for the Allerød soil (see section 3.4 and Appendix 18) and date the lower part of the dry valley sequence. The results broadly fit with the expected date range and provide an absolute chronology for this part of the sequence.