

## The macroplant from A31 Road Widening Scheme Archaeological Boreholes, Ringwood, Hampshire: an assessment (AOC:34537)

Jackaline Robertson

### *Introduction*

Two sediment samples were submitted for environmental assessment in September 2022 from the borehole evaluation undertaken as part of the A31 Road widening Scheme in Hampshire. The samples were collected from borehole WS603 which included a notable organic component that may represent a Holocene soil formation in the surface of the Pleistocene gravel. A small assemblage of waterlogged and carbonised ecofacts were recovered. The aim of this assessment was to identify the plant material to species, recognise any evidence of past human activity, assess the potential of the ecofacts for further study and their suitability for radiocarbon dating.

### *Methodology*

The two samples were processed in their entirety in laboratory conditions at AOC archaeology Edinburgh and were gently disaggregated by hand to minimise any damage to fragile ecofacts (Kenward *et al* 1980). Once the sediment was broken down, the wash overs were fed through a stack system of 4.0 mm, 2.0 mm, 1.0 mm and 300 µm sieves. The wash overs were stored in distilled water and sorted using a high-powered microscope at x10-450 magnification. The heavy fraction was air dried at room temperature and sieved using a stack system of 4.0 mm, 2.0 mm and 1.0 mm sieves.

The macrofossils were examined at magnifications of x10 and up to x450. Macroplant identifications were confirmed using modern reference material and seed atlases stored at AOC Edinburgh (Cappers *et al.* 2006; Jacomet 2006). Taxonomy and nomenclature for plants follows Stace (2010).

Wood fragments larger than 4mm were selected for assessment. Species identifications were confirmed by analysing the transverse, tangential and radial sections at x70-x450 magnification and using keys and texts stored at AOC Edinburgh (Hather 2000; Schweingruber 1990).

### *The assemblage*

The sediment was examined prior to processing and while not obviously waterlogged, uncharred ecofacts were recovered. It was assumed given the depth at which the bores were sampled that there is no evidence to suggest any uncharred macroplants represent later intrusive material and instead are more likely to be contemporary with the formation of the deposits. The ecofact assemblage while small was dominated by waterlogged plant remains alongside a much smaller quantity of carbonised material.

### *The waterlogged macroplants*

The waterlogged plant assemblage was formed mostly of plant stems recovered alongside a mix of weeds. The species were alder (*Alnus glutinosa* L), carrot (*Apiaceae* sp), sedge (*Carex* sp), wood-sorrels (*Oxalis* sp), knotweed (*Persicaria* sp), grass (*Poaceae* sp), bulbous buttercup (*Ranunculus bulbosus* L), elderberry (*Sambucus nigra* L), violet (*Viola* sp) and moss. These finds were concentrated

within deposit (WS603) 1.50-1.70. Preservation of the waterlogged assemblage ranged from poor to excellent with most described as adequate to good.

#### *The carbonised macroplants*

A total of five carbonised cereal caryopses were identified as rye/wheat (*Secale/Triticum* sp). These were recovered from (WS603) 1.50-1.70. Preservation of the caryopses was poor.

#### *The waterlogged wood*

Small fragments of wood were noted in (WS603) 2.54-2.74 of which the largest piece was recorded as alder. Preservation of this fragment was adequate.

#### *The charcoal*

Infrequent flecks of charcoal were noted in both samples but in all instances were smaller than 4mm and were not suitable for further study so were not collected.

#### *Other finds*

Insect remains and mollusc shells were noted in (WS603) 1.50-1.70. A large quantity of flint was recovered from (WS603) 2.54-2.74.

#### Summary of the contextual units

##### **Context: (WS603) Sample <1.50-1.70>**

*Macroplant:* The waterlogged assemblage was concentrated within this deposit. The largest find was plant stems along with inclusions of alder, carrot, sedge, wood-sorrels, knotweed, grass and bulbous buttercup. There were also five carbonised rye/wheat cereal caryopses.

*Wood:* No actual fragments of wood were observed within this deposit although both alder fruits and charcoal were present.

*Charcoal:* Small flecks of charcoal were noted but these were unsuitable for species identification.

*Synthesis:* The waterlogged plants accumulated naturally within this deposit and typically favour damp meadow and grassland. The only evidence of possible human activity was the presence of the carbonised cereal caryopses and charcoal.

##### **Context: (WS603) Sample <2.54-2.74>**

*Macroplant:* The waterlogged assemblage was dominated by plant stems alongside much smaller quantities of sedge, elderberry, violet, knotweed and moss.

*Wood:* Occasional fragments of wood were noted and one piece was identified as alder.

*Charcoal:* Charcoal was present but these fragments were all much smaller than 4mm and unsuitable for further study.

*Synthesis:* The plants identified within this deposit usually favour damp meadows and grassland. They probably grew nearby before becoming accidentally deposited and trapped within the sediment. The charcoal flecks may be evidence of human activity.

#### Discussion and statement of significance

### *The macroplants*

The waterlogged plant assemblage is dominated by plants that tend to favour damp meadows and grassy habitats. These species probably grew nearby and were accidentally deposited within the surrounding sediments. The carbonised cereals may be evidence that some human activity occurred in this area. Given the small size of the macroplant assemblage it is not possible to draw any further conclusions concerning the development of this landscape during this period or how it changed over time.

### *The wood*

Alder tends to favour damp habitats (Stace 2010) and probably grew in close vicinity to the two deposits.

### *The charcoal*

The charcoal assemblage was composed of small fragments that were of little archaeological value in understanding the formation of this landscape.

### *Recommended further work*

The ecofact assemblages have been assessed in full and no further species identifications are required. If material is needed for radiocarbon dating then the carbonised cereal caryopses from (WS603) 1.50-1.70 and the alder wood fragment from (WS603) 2.54-2.74 are suitable. Given the small size of the assemblage its potential for answering specific research questions concerning the paleoenvironmental role of plants at this site during the Holocene and pelecione period is limited so no further analysis of the ecofacts is recommended. The processed samples are currently stored at AOC archaeology and once all work is completed at this site the samples are suitable for disposal.

### *References*

Cappers R.T.J., Bekker R.M. and Jans J.E.A. (2006). *Digital seed atlas of the Netherlands* (Barkhuis Publishing and Groningen University Library, Groningen).

Hather, J G, (2000). *The identification of the Northern European Woods: a guide for archaeologists and conservators*. London.

Jacomet, S. (2006). Identification of cereal remains from archaeological sites. (2nd ed) Archaeobotany Lab IPAS, Basel University.

Kenward, H. K., Hall, A.R. and Jones, A.K.G (1980). A tested set of techniques for the extraction of plant and animal microfossils from waterlogged archaeological deposits. *Science and Archaeology* 22, 3-15.

Stace, C. (2010). *New Flora of the British Isles*. 3rd Edition. Cambridge University Press.

Schweingruber, F H, (1990). *Microscopic wood anatomy*. Birmensdorf.

Appendix A:

Table 1 : Ecofacts

Context			WS603	WS603
Depth			1.50-1.70	2.54-2.74
Weight (g)			907.6	1198
% Analysed			100	100
<b>Species</b>	<b>Name</b>	<b>Part</b>		
<b>Crops</b>				
<i>Secale/Triticum</i> sp.	Rye/Wheat	Caryopsis/es ©	5	
<b>Woodland</b>				
<i>Alnus glutinosa</i> L.	Alder	Fruit(s)	**	
<i>Alnus glutinosa</i> L.	Alder	Wood frag(s)		*
Wood		Frag(s)		**
Charcoal		Frag(s)	<4mm	<4mm
<b>Weeds</b>				
<i>Apiaceae</i> sp.	Carrot	Schizocarp(s)	**	
<i>Carex</i> sp.	Sedge	Nutlet(s)	*	*
<i>Oxalis</i> sp.	Wood-sorrels	Fruit(s)	*	
<i>Persicaria</i> sp.	Knotweed	Achene(s)	**	*
<i>Poaceae</i> sp.	Grass	Caryopsis/es	**	
<i>Ranunculus bulbosus</i> L.	Bulbous buttercup	Achene(s)	**	
<i>Sambucus nigra</i> L.	Elderberry	Seed(s)		*
<i>Viola</i> sp.	Violet	Capsule(s)		*
Stems	Stems	Frag(s)	***	***
<b>Moss</b>				
Moss	Moss	Leaves/stem(s)		*
<b>Insect</b>				
Beetle		Frag(s)	**	
Insect		Eggs	*	
Earth worm		Capsule	*	
<b>Other</b>				
Flint		Frag(s)		****
Molluscs		Frag(s)	**	

Key: \*=<10, \*\*=10-29, \*\*\*=30-99, \*\*\*\*=>100, ©=carbonised

