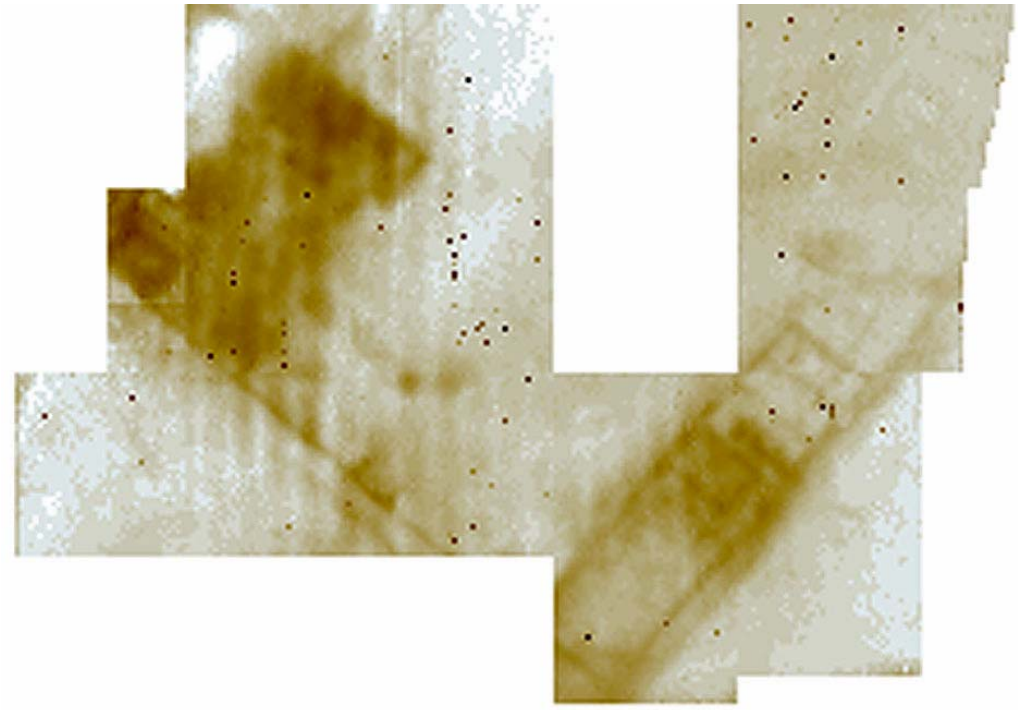
Interim Report

Lower Woods, Hawkesbury 2002



Richard Osgood
South Gloucestershire Council

South Gloucestershire Council

The Wildlife Trusts

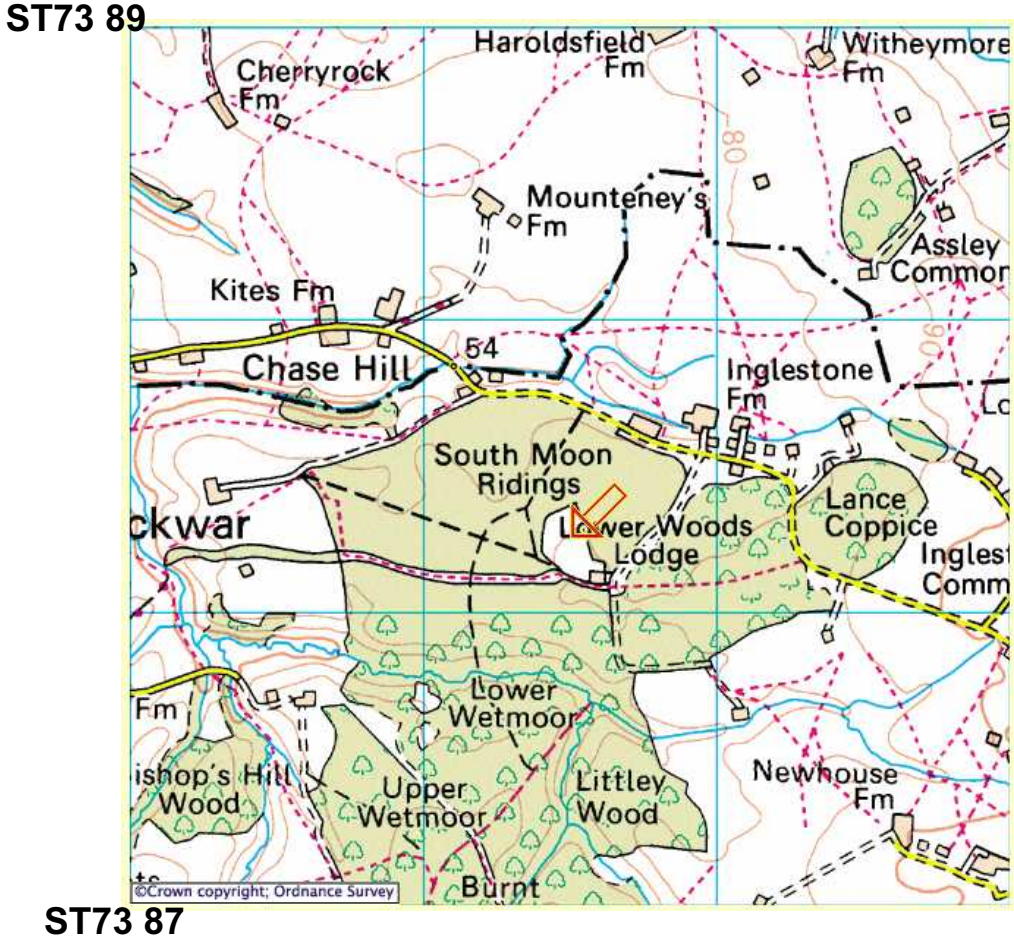
Supported by the
Heritage Lottery Fund

The excavations of a Roman Building at Lower Woods, Hawkesbury 2002

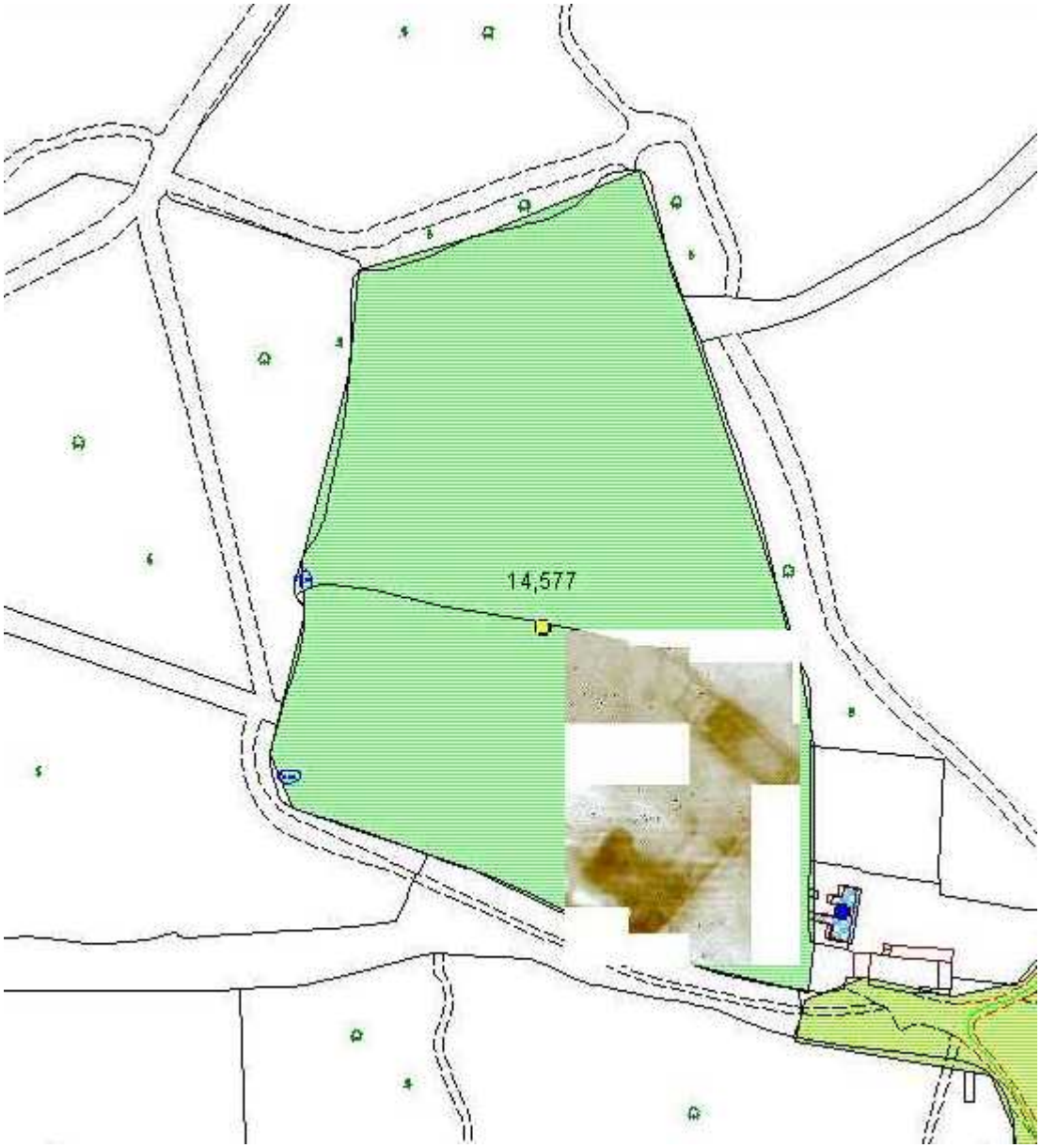
Background

The Parish of Hawkesbury lies along and below the western edge of the Cotswold scarp in the unitary authority area of South Gloucestershire. Lower Woods is a nature reserve managed by the Avon Wildlife trust with 288 hectare of managed woodland. Stanley meadow, the location for the work in this report, lies to the northern end of Lower Woods and appears to have been clear of trees for at least 500 years (Jackson, 1991, 1).

Within Hawkesbury, the Sites and Monuments Record (SMR) for South Gloucestershire Council notes the presence of strip lynchets of indeterminate date on Inglestone common (ST76458775) SMR 6063. Roman deposits included the presence of building materials from a villa on the Badminton Estate (ST81028584) SMR 12658 and Roman pottery and tile finds at Fieldgrove SMR 4921. The ever-watchful head-forester of the Badminton Estate, Mr Don Watts, has also pointed out several other Roman occupation sites – indicated by finds of oyster shell, tegulae, pottery and coins.



Map1: Location of Lower Woods Site



Map2: Location of Survey Area within Lower Woods

A geophysical (resistivity) survey in Stanley Meadow, behind the 18th Century lodge at Lower Woods nature reserve, Hawkesbury (ST74478822) undertaken by Andrew Jackson, Mike and Jill Martin and Rebecca Ireland produced astonishing results (Figure1). Although the above individuals had noted the presence of fragments of pottery and large quantities of metalworking debris when postholes for fences were being cut, and further test-pitting was carried out, no building of antiquity was known in the immediate vicinity. Almost all the finds that were uncovered from this work were of Roman origin with little or nothing from later or earlier periods

As mentioned, the geophysical work took place in a meadow called “Stanley” which perhaps indicates the presence of a stony out crop (or standing stone) in a clearing or “ley” in the wood (Jackson 1991,1). Following this work, an analysis of the soil and plant chemical residues were produced by Jackson (Jackson 1991).

The survey seemed to indicate the presence of several large structures surrounding a courtyard. Later refinements of the resistivity work demonstrated the presence of possible courtyard walls and, perhaps, even an entrance gate.

Project Aims 2002

One small trench was excavated, uncovering the longer structure to the right of the "courtyard", in the summer of 2002 to answer the following questions:

- The geophysical survey results indicate the presence of substantial structures. Although the finds from nearby test pits have been almost exclusively Roman in date, excavation is intended to test the hypothesis that the structures are Roman (this seemed likely as nothing later was noted on tithe maps and that this land had been cleared for c500 years).

- If the deposits ARE Roman, are they of 3rd and 4th Century date as per many of the other Roman elements that have been excavated in South Gloucestershire so far?

- Are the structures domicile in nature?

- How close to the surface are the remains and what is the level of their preservation?

- What is the scope for future work, on-site interpretation, and educational opportunities?

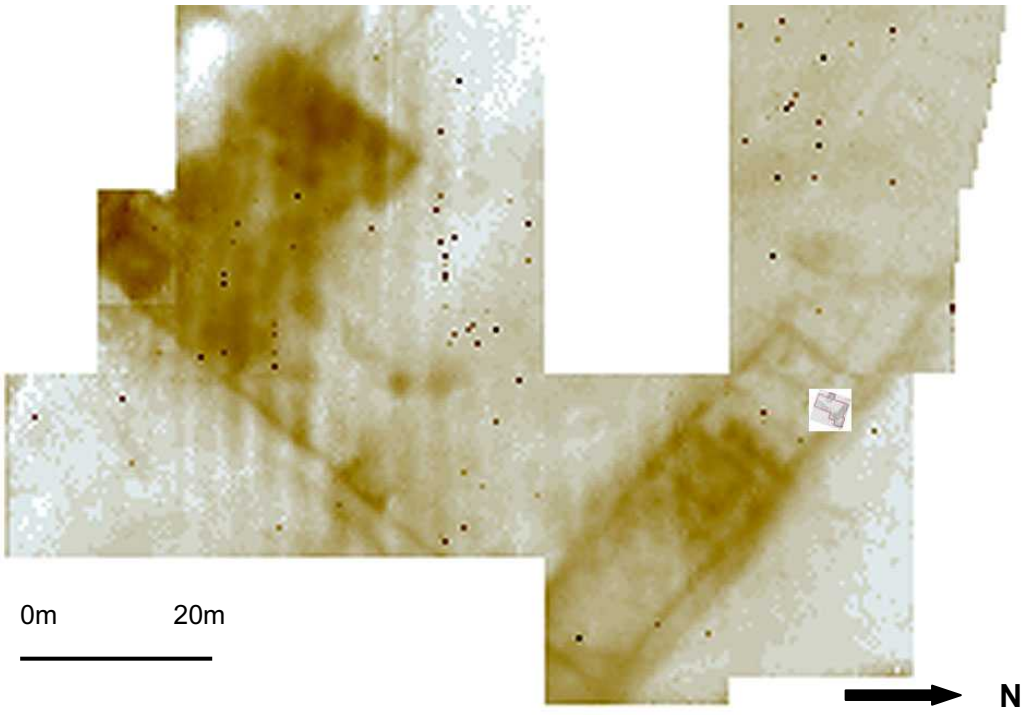


Figure1: Trench location 2002 (see Plan below)
Geophysical Survey at Lower Woods (Sagascan)

Results:

Trench 1

Local volunteers and Professional archaeologists from South Gloucestershire Council uncovered substantial walls of a structure. These lay only a short distance below the surface, just below the level of the turf. The walls were c800mmthick and were constructed of lias limestone in much the same fashion as those of the nearby villa at Horton.

Figure 2: The walls of the Lower Woods Building

These walls were altogether wider and sat on a bedding of cobbles as a foundation (Figure 2). The walls exposed were built in one phase as the junction of internal and external walls were on the same foundation level. Little by way of domestic finds were recovered. An unidentifiable coin was found in the topsoil and much pottery of 2nd and 3rd Century date was found. A substantial quantity of metalworking debris was found throughout the interior of the building which might point to an industrial raison d'être for the structure.

A substantial squared limestone block sat on top of a 'nest' of rough cobbled stones within the building (Figures 2 and 3). Initially it was thought that this was a possible post-pad of a Roman aisled building. However, excavation showed no stratified dating material for this feature although sherds of broken Roman pottery lay within the cobbled on which the block sat. The location of the pad so close to the walls would also make little sense and its setting in a loose heap of stones would also point against its use as a post pad for the main building. It is possible that it represents a later re-use of a Roman block (Cunliffe, pers.comm.).

Figures 2 and 3 The Roman walls and "Pier base"

Features

Feature 1

Well-constructed internal wall of large building. Built from large squared limestone blocks of average size c410 x 80mm. This wall was around 80cm wide and was mortared together with a gritty yellow matrix. The outer and inner faces of the wall were nicely squared whilst the interior stones of the wall were smaller and more angular. Only one wall course survives over cobble foundations layer

Feature 2

Very large squared limestone slab some 490 x 350 x 210mm in size. Sat on top of and was surrounded by large angular rubble stones of which a soil matrix was only a small component. This sat on Roman material which was also within the cobbling and thus seems to be part of a later re-use of the site or building as opposed to a 2nd-3rd century integral first phase component

Feature 3

The remnants of the external wall of the building (Figure 4). The proper stone courses have been robbed out leaving only the cobble foundation layer. These stones were close packed and were angular in nature, on average 100 –150 mm in size. These had been placed in a construction pit and then had a sandy (?mortar) layer on top (layer 5) some 100mm thick. This cobble layer of foundations was also present below the other excavated (internal) wall, Feature 1.

Figure 4: The Foundation stones, Feature 3

Feature 4
The foundation trench for the cobbles of the foundation (f3) and the overlying walls.

Conclusions:

Although much of the building material appears to have been robbed out – enough of this structure is preserved to provide valuable information. It is altogether more massive than the structure at Horton (subject of ongoing excavations by South Gloucestershire Council) the walls being some 80cm wide. The presence of pottery of the 2nd and 3rd Centuries AD (Evans, D. Pers.comm.) would indicate that this is also an early site. The finds are also of interest; although perhaps relating solely to the particular structure we were excavating, much by way of industrial waste (metalworking debris) was recovered. This fits the general pattern for the overall site and might indicate that the complex was dedicated to industrial activities. This is something that can be tested with further excavations of the buildings at the South of the complex.

The deposits lie close to the surface of the field but are not under threat as this area is carefully managed as part of the nature reserve. The structure has been heavily robbed but the elements which remain are relatively well preserved and will certainly provide valuable archaeological information.

Site Potential:

In terms of its potential as a resource for local communities, the site is clearly most important. Site visits were attended by local people in 2002 (and are planned for 2003) and we have had school parties on site as well to see the archaeology first hand. The results of the excavations have also been used in a series of local talks about the nature of Roman archaeology in the region.

The site has certainly got an industrial element to its history. Further excavation work is planned which will consider the nature of the deposits to the south of the site (and perhaps a domestic element) alongside the courtyard itself, its walls and a structure which might be a gate.

The fact that the pottery is comparatively early in date 2nd – 3rd Centuries (as opposed to 3rd – 4th Centuries AD) is also significant. Our understanding of Roman South Gloucestershire might be considerably enhanced by further excavation. The theory that the area was part of a Roman Imperial mining estate or *Pagus* in this period can be partially tested with our results.

Small Finds:

Iron: The vast majority of finds from the excavations of 2002 were of iron timber nails. 52 nails were recovered – these of varying lengths. Many of these were clinched over.

Copper Alloy: Only one object of copper alloy was uncovered. This, SF001, was a small copper alloy disc, probably a coin, from the topsoil. The object was so worn that, if it was a coin, neither the obverse, nor the reverse or legend was visible.

Figure 5: the copper alloy object
(Photo: Mike Martin)

Misc: Other finds recorded include glass splinters and metal-working debris. This occurred within the building.

Animal Bone:

Many animal bones were excavated in 2002 though it has been decided to wait for further excavation results before this material is sent to a specialist for identification.

Some of these bones seem to show butchery marks, and the presence of a pig's tusk was also noted (Figure 6)

Figure 6: The Pig Tusk
(Photo: Mike Martin)

Human Bone:

No human remains were found

The Roman Pottery from Excavations at Lower Woods Lodge Inglestone Common, South Gloucestershire: 2002

By
David R Evans

Introduction
A modest collection dating to the C2-C3. There is one exception, which hardly dates before c350.

Dating and Discussion

The majority of the pottery dates to the C2 and C3, with a suspicion that a C3 date should be favoured. Close dating of pottery within the period 150 to 300 is notoriously difficult, coinage problems, what appears to be a lack of innovation in style and techniques and a rapid fall off in the import of fine wares, all contribute to the problem. Fortunately in this case close dating is not an issue, it is enough that, unusually in this region for a major building of to be dated within this period. Major buildings of the C2 and C3 are usually assumed to be absent from the Roman landscape of this region, with the imperial estate argument being used to explain the

absence. However, absence of evidence is not evidence of absence, and large scale C2 or more likely C3 occupation on this site is probable.

Before 2003 it would have been difficult to explain the Eifel import (no 23), but recent excavations have produced evidence of much later occupation, although a brief view of the pottery, does not confirm this. Modest numbers of Eifel mortaria are known from Britain, other vessels are less common. Attempts to associate the vessels with the campaigns of Magus Maximus or even Constantine III are pure speculation, they do indicate that for much, if perhaps nor all, of the later C4 the Rhine was still an effective trade route.

Catalogue

1) Rim of a jar in Severn Valley Ware perhaps from Caldicot, C2-3. (context 1)
2) Rim of a jar in a dark granular fabric probably Glevum ware. A late C2 date is likely c.f. a similar vessel from Exeter (Holbrook & Bidwell 1991 fig 53 no 2.1). (context 12)
3) Rim of a bowl in a fine dark grey fabric with a darker core, almost inclusion free. Imitation of samian form 29. 'London ware' style (Tomber & Dore 1998) C2. (context 3)
4) Bead rimmed jar in BB1, c.f. Gillam 1976 21 & 24, early to mid C2. (context 3)
5) Jar in a buff fabric with a darker core, possibly originally slipped, similar to C2-3 BB1 types. (context 8)
6) Lower part of the handle in Severn Valley Ware. (context 8)
7) Bead rimmed bowl shaped lid in a micaceous pink buff fabric with a fawn core. The fabric has many similarities to north Gaulish grey wares. C2-C3. (context 2)
8) A jar or beaker in Severn Valley Ware C2-C3. (context 2)
9) Bead rimmed jar in a buff fabric (origin uncertain). Bead rims are common in the C2, but continue well into C3. (context 2)
10) Groove rimmed dish in BB1 (Gillam 1976, 74) late C3. (context 15)
11) Cooking pot in BB1 (probably South Somerset Fabric – 'wheel-thrown') similar to Gillam (1976) 8, late C3. (context 2)
12) Badly eroded tankard, possibly imitating samian form 29. The type is moderately common at Usk (Manning 46.1), where it is dated to C2-3. (context 2)
13) Cooking pot in BB1 (probably South Somerset Fabric – 'wheel-thrown'), Gillam (1976) No 3-4, mid to late C2. (context2)
14) Flanged bowl or dish in BB1, within the range of Gillam (1976) 44-46 later C3 or, just possibly, early C4. (context 2)
15) Jar in Severn Valley Ware imitating early to mid C2 BB forms, C2. (context 2)
16) Small wheel thrown jar in a quartz tempered 'native' local fabric. Such vessels are common on C1-2 sites in the southwest (eg Second Severn Crossing unpublished). C2 by context. (context 2 by 5)
17) Cooking pot in BB1 (probably South Somerset Fabric – 'wheel-thrown'), Gillam (1976) No 4. Late C2. (context 2 by 5)
18) Folded flagon in Caerleon ware. The early-mid C2 dating of this ware can be questioned and a generally C2 date, on form rather than fabric, a generally C3 date for. this vessel would be appropriate. (context 2 by 5) (**note** publish profile only)
19) 'Belgic' carinated bowl in a quartz rich Severn Valley fabric. This developed for is more likely to be C3 than C2 in date. (context 6)

20) Lid in BB1, lids are not often reported in Dorset BB1, but many may have been published as bows. A similar profile from Exeter (Holbrook & Bidwell 1991, fig 65 64.1 (from a smaller vessel)) is dated as mid-late C2. (context 1)
21) Flanged bowl or dish in BB1 similar to Gillam (1976) no 57, early to mid C2. (context 1)
22) Mortarium rim fragment, probably Oxfordshire ware (Young 1977), the vessel appears to have been damaged and the rim filed down. Probably a C2 form, the repair may indicate a longer life. (context 1)
23) Jar in a hard coarse ware produced in the Eifel region (Rheinland-Pfalz/DE), produced from c300 and continues into the fifth and sixth centuries, (Redknap 1987) produced in a variety of fabrics, the volcanic origin of the clay is fairly obvious. In Britain contexts indicate a mid-late C4 date. (context 3)

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Friday, 19 September 2003

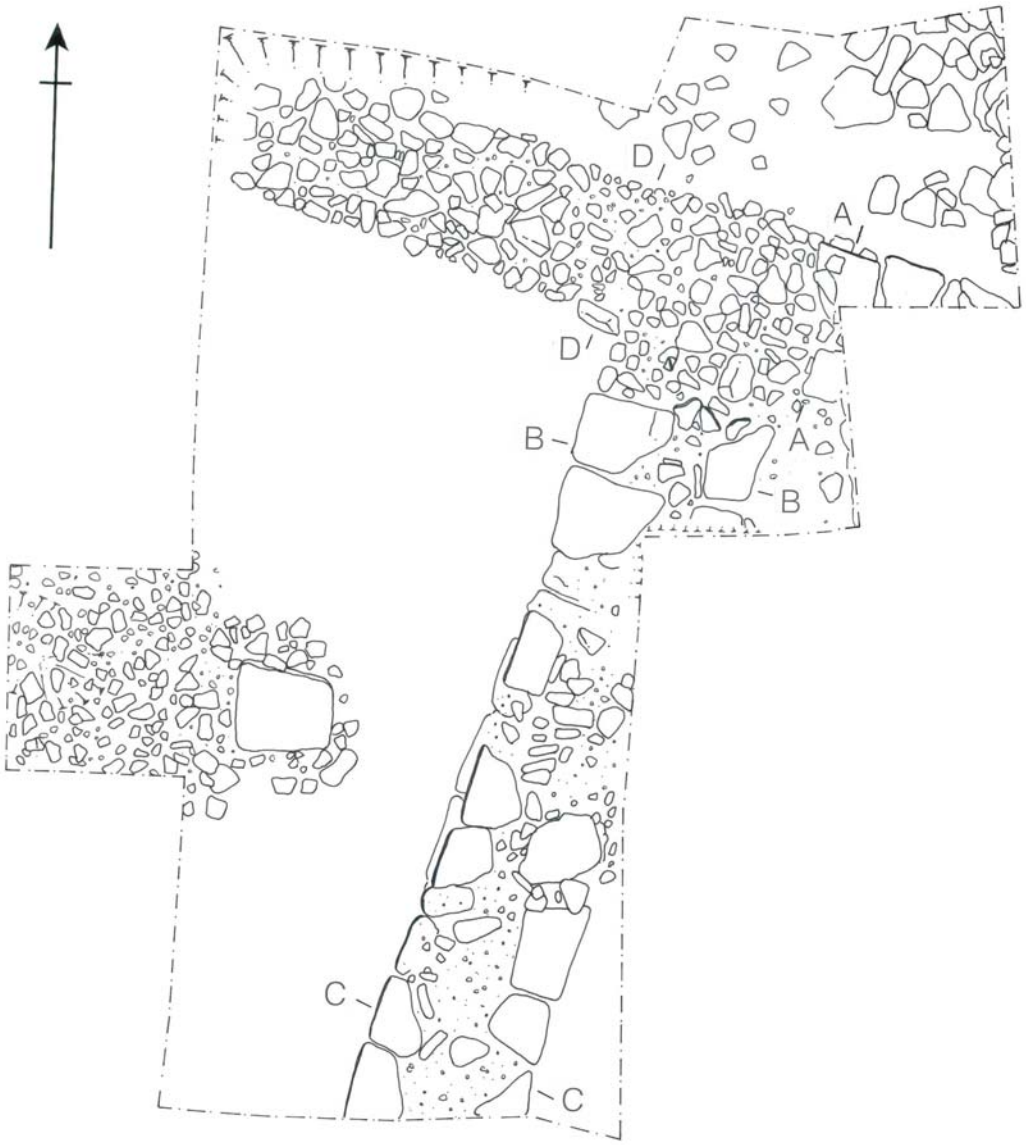
Archive Catalogue

BS body sherd
LGW local grey ware
LRW local red ware
LLGW light local grey ware
SVW Severn valley ware
BB1 black burnished ware (1) origins in Dorset but production sites in Devon and Somerset are known.

Acknowledgements:

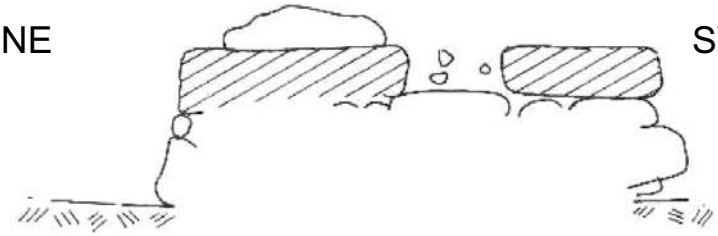
I owe my thanks to the Avon Wildlife Trust for permissions to excavate, The Heritage Lottery Fund for placement funding, to Sagascan for the geophysical survey, and to the following for all the hard work, insight and suggestions on the excavations:

My Co-Director David Evans (Sites and Monuments Record Officer, South Gloucestershire Council), Maggie White, Don Watts, Sarah Rowlatt, Dave Rowley, Rebecca Ireland, Mike Martin, Jill Martin, and Andrew Jackson



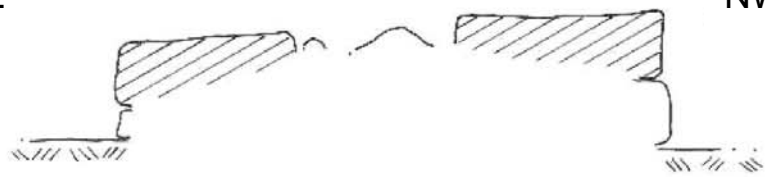
Plan of Lower Woods Site 2002
Scale 1:40

NE SW



PROFILE A

SE NW



PROFILE B

SE NW

PROFILE C

SW NE

PROFILE D

Limestone walls blocks

Cobble

Scale 1:10

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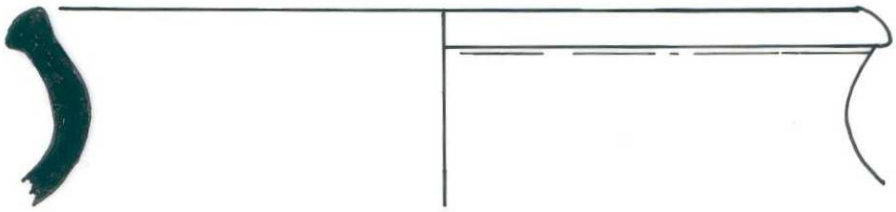
Pottery Illustrations
(Alison Wilkins)

Scale 1:1



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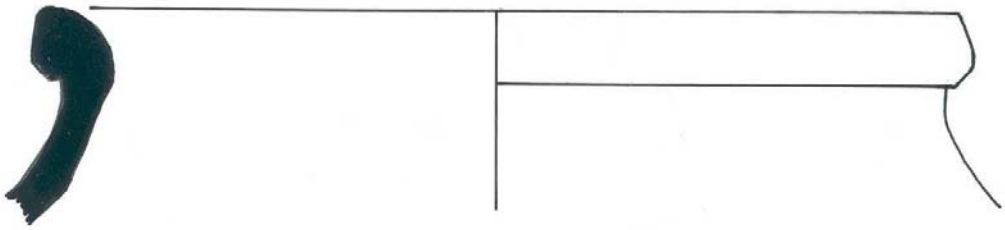

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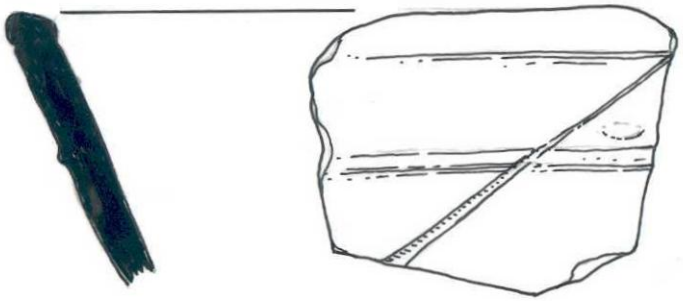

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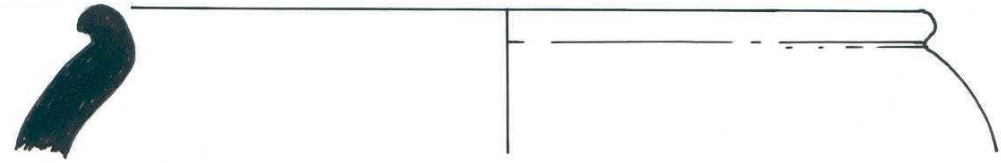

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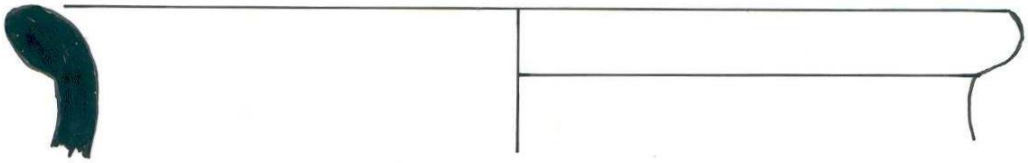

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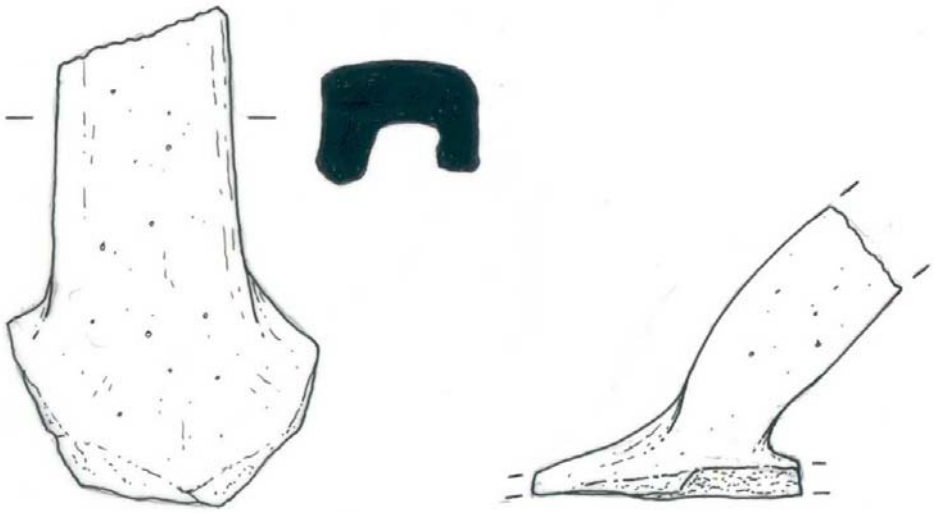

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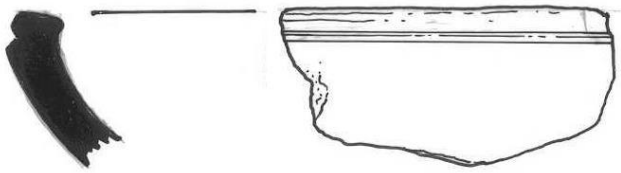

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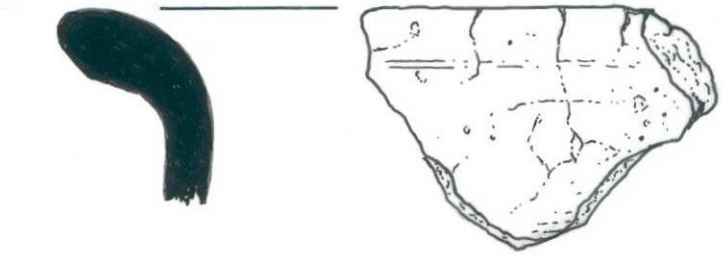

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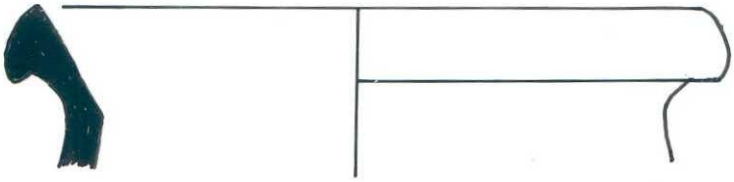

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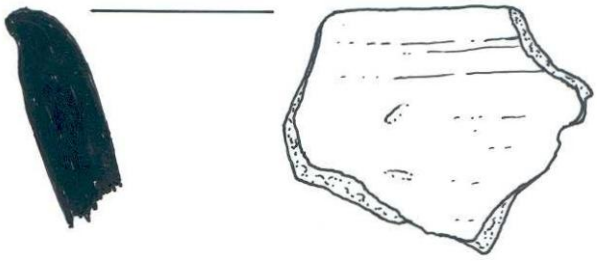

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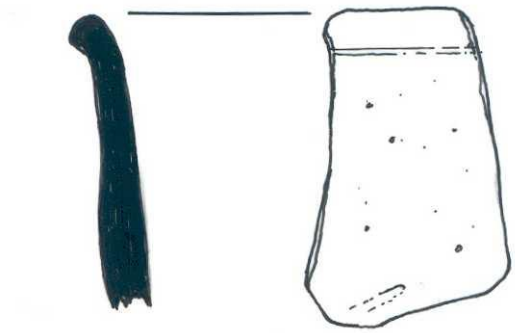

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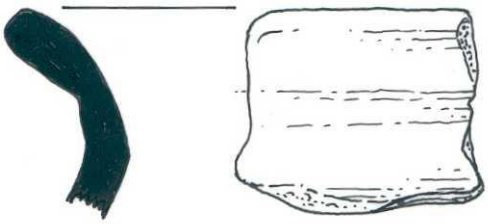

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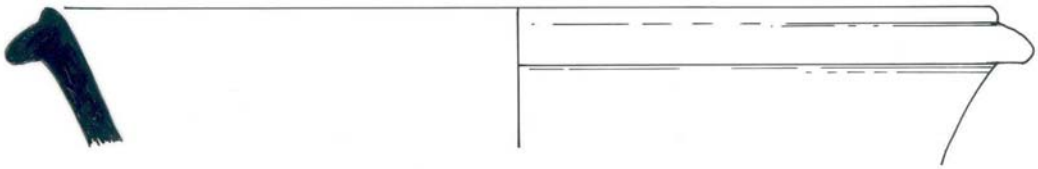

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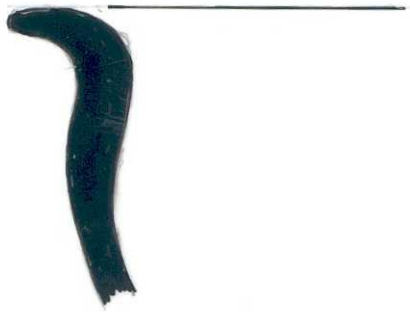

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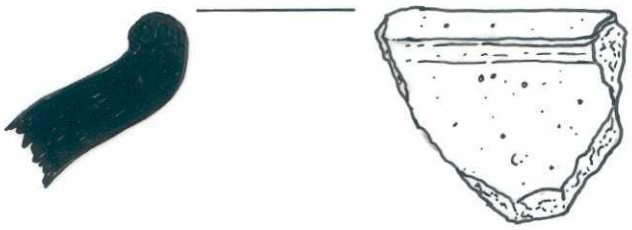

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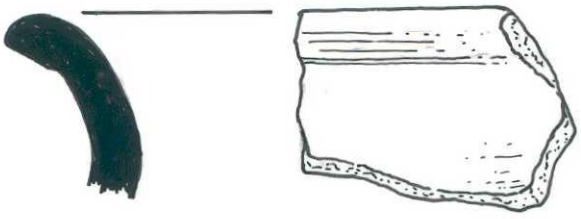

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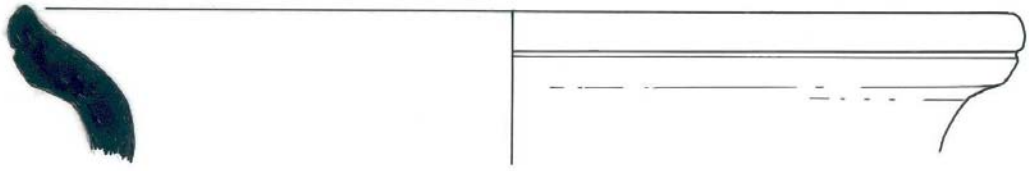

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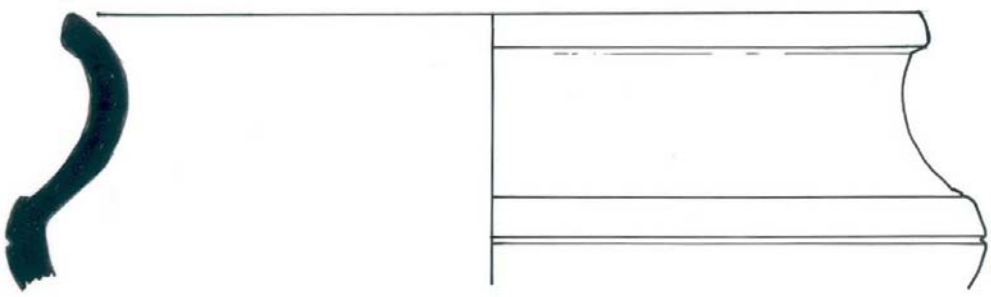

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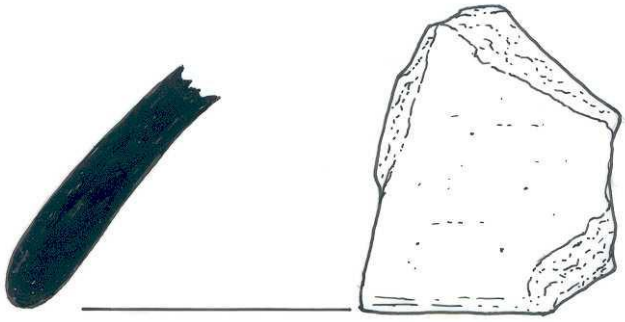

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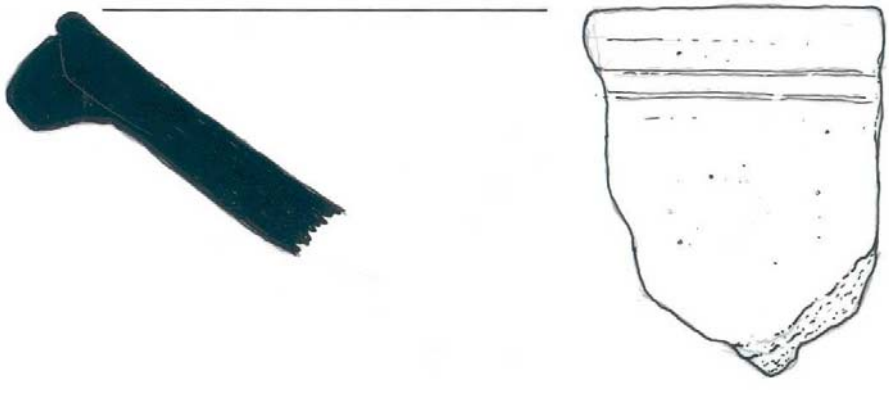

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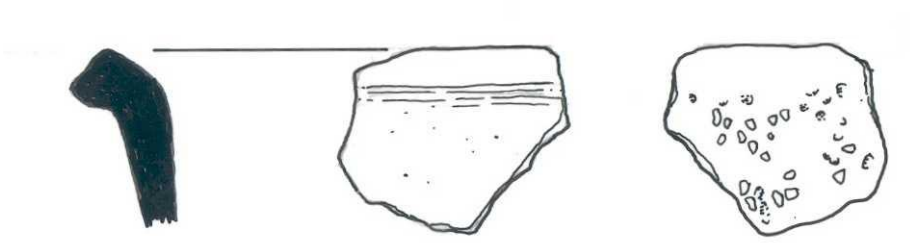

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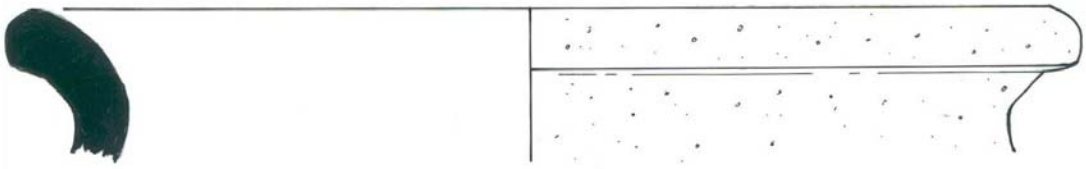

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SGSMR16577

Analysis of soil and plant chemical residues

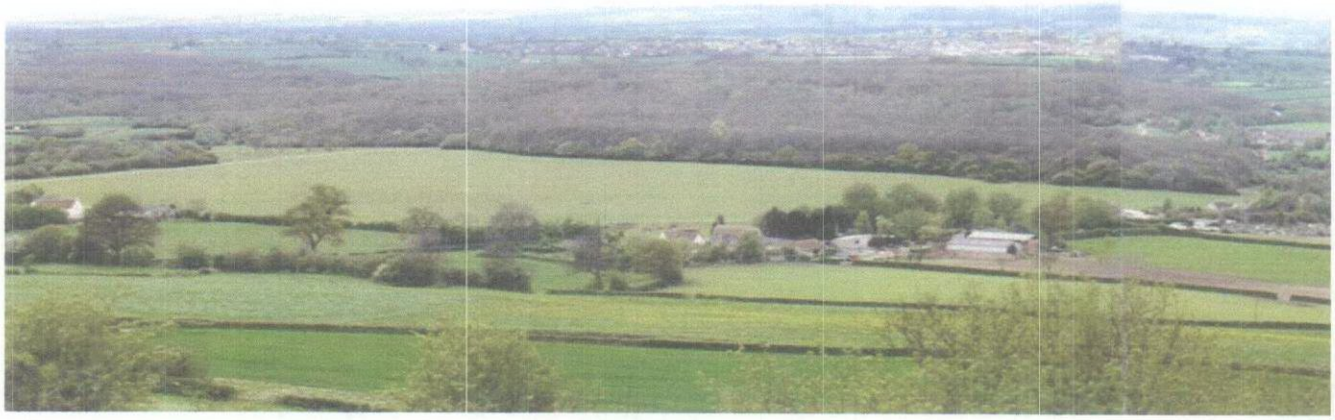
and other soil factors

associated with a

Roman settlement in Stanley Meadow and Stanley Orchard

Lower Woods Nature Reserve

Hawkesbury, South Gloucestershire.



A. W. Jackson

March 2001

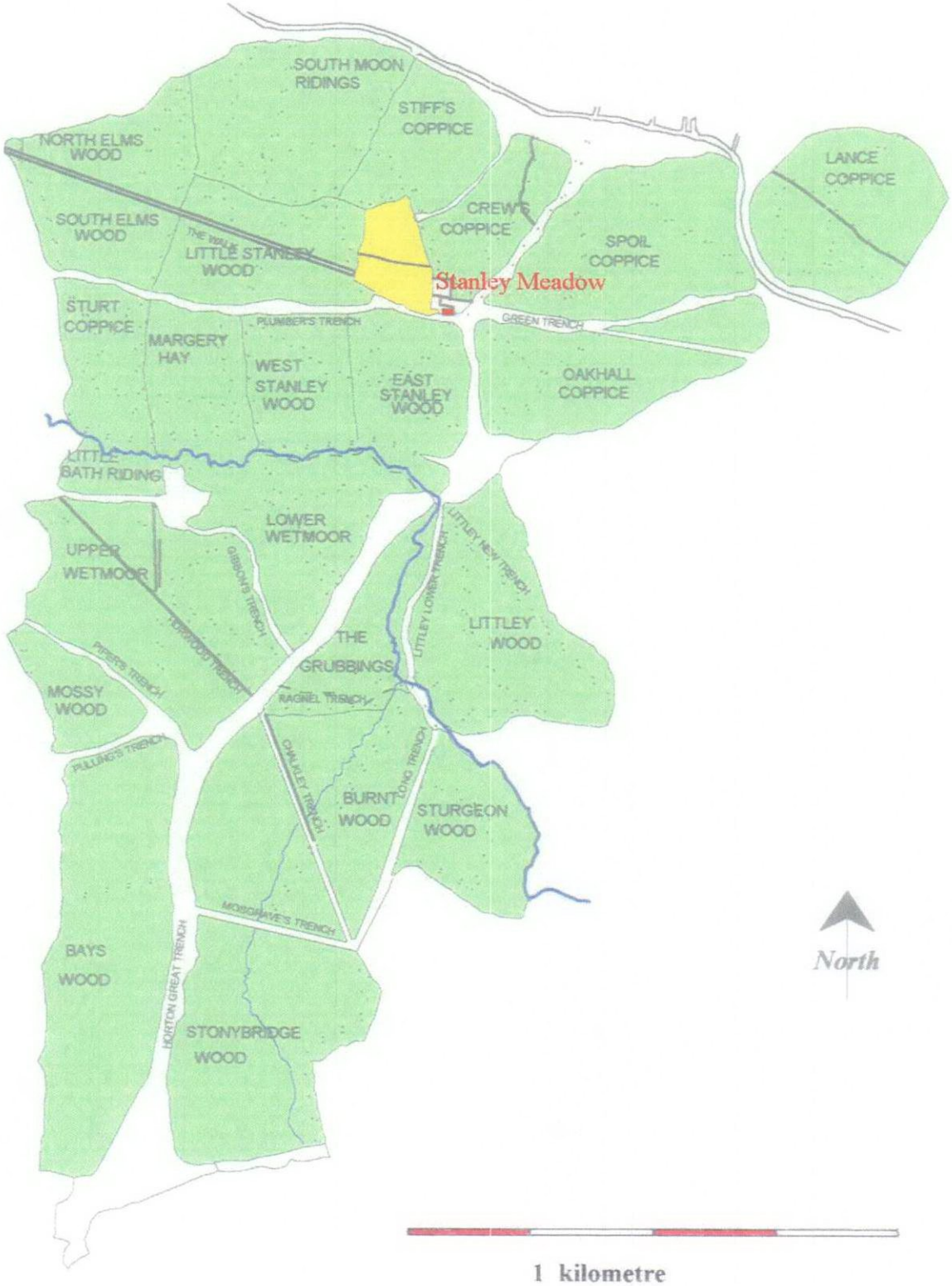
INTRODUCTION

Lower Woods lie beneath the western edge of the Cotswolds in southern Gloucestershire and some 17 -18 kilometres inland from the Severn Estuary. The woodland shows evidence of human management since the early medieval period and was almost certainly part of a wider forest landscape in which there are indications of far more ancient human exploitation. The woods currently comprise of 288 hectares of managed woodland 3 kilometres in length tapering from a width of 2 kilometres in the north to less than 1 kilometre at their southern end. The whole of Lower Woods has been cleared for coppicing at some stage in the last hundred years, the last extensive clearance being in 1948 and coppicing continues until this day. Some areas cleared in the 1880s were left as grassland for upwards of 70 years before replanting. However, two adjoining areas of open grassland, Stanley Meadow and Stanley Orchard set in the middle of the northern end of Lower Woods, have remained so for at least five hundred years and may have treeless for much longer. These fields comprise of approximately 3 ha of ancient meadow and are enclosed an all sides by managed woodland. The soils are slightly acid clay loams.

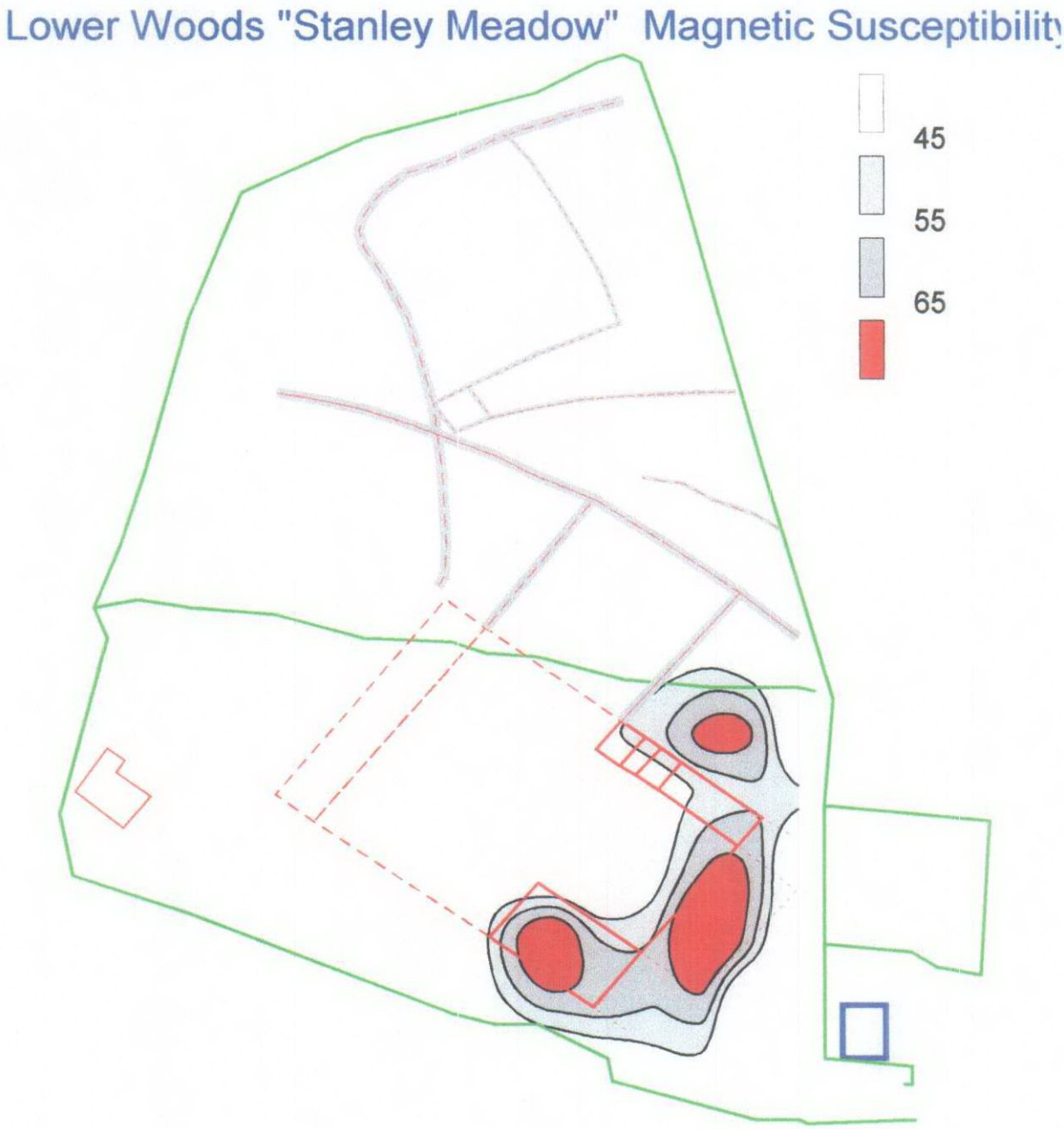
ARCHAEOLOGICAL BACKGROUND

The woodland and area surrounding Stanley Meadow and Stanley Orchard became subject of an MA project study of ancient woodland management in 1997 (Jackson, 1997) during the course of which the recovery of several Roman pottery sherds from holes dug for fencing were reported. A subsequent search of the exposed surfaces of wood banks and disturbed soil around badger sets recovered many more sherds dating from the first century BC to the fourth century AD. Most were concentrated close to the eighteenth century Lodge House and along the eastern edge of the Stanley Meadows and the adjoining Stanley Orchard. Roman material predominated with little or nothing from the intervening period before the Lodge was built.

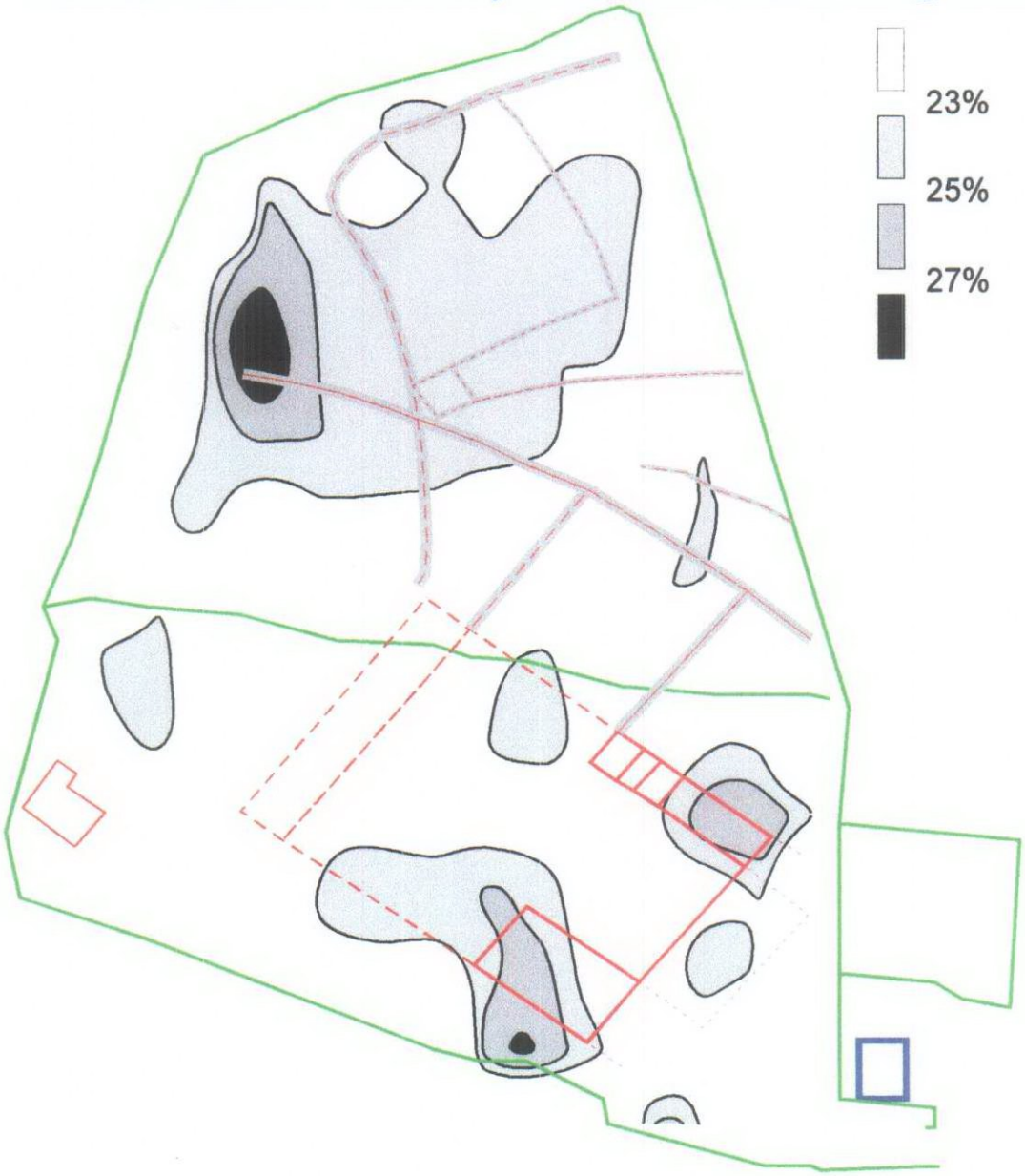
The name of the two meadows, "Stanley", indicated the previous existence of a stony (*stan* …a stony outcrop, a standing stone or a source of building stone?) clearing (*ley*) in the wood. There are no outcrops of rock, standing stones or visible surface evidence of ancient buildings today, nor any clear earthworks to suggest past settlement. It was decided to take soil samples from these two meadows in search of evidence for past activities that might be associated with the pottery finds. Subsequent to the soil analysis the two meadows underwent a resistivity survey and evidence of a Roman settlement were discovered


SOUTH MOON RIDINGS
STIFF'S COPPICE
NORTH ELMS WOOD
LANCE COPPICE
SOUTH ELMS WOOD
THE WALK
LITTLE STANLEY WOOD
CREW'S COPPICE
SPOIL COPPICE
Stanley Meadow
STURT COPPICE
PLUMBER'S TRENCH
GREEN TRENCH
MARGERY HAY
WEST STANLEY WOOD
EAST STANLEY WOOD
OAKHALL COPPICE
LITTLE BATH RIDING
LOWER WETMOOR
UPPER WETMOOR
GIBSON'S TRENCH
LITTLEY NEW TRENCH
LITTLEY LOWER TRENCH
LITTLEY WOOD
THE GRUBBINGS
TURNWOOD TRENCH
PIPER'S TRENCH
MOSSY WOOD
RAGNEL TRENCH
PULLING'S TRENCH
CHALKLEY TRENCH
LONG TRENCH
BURNT WOOD
STURGEON WOOD
MOSSGRAVE'S TRENCH
BAYS WOOD
HORTON GREAT TRENCH
STONYBRIDGE WOOD
North
1 kilometre

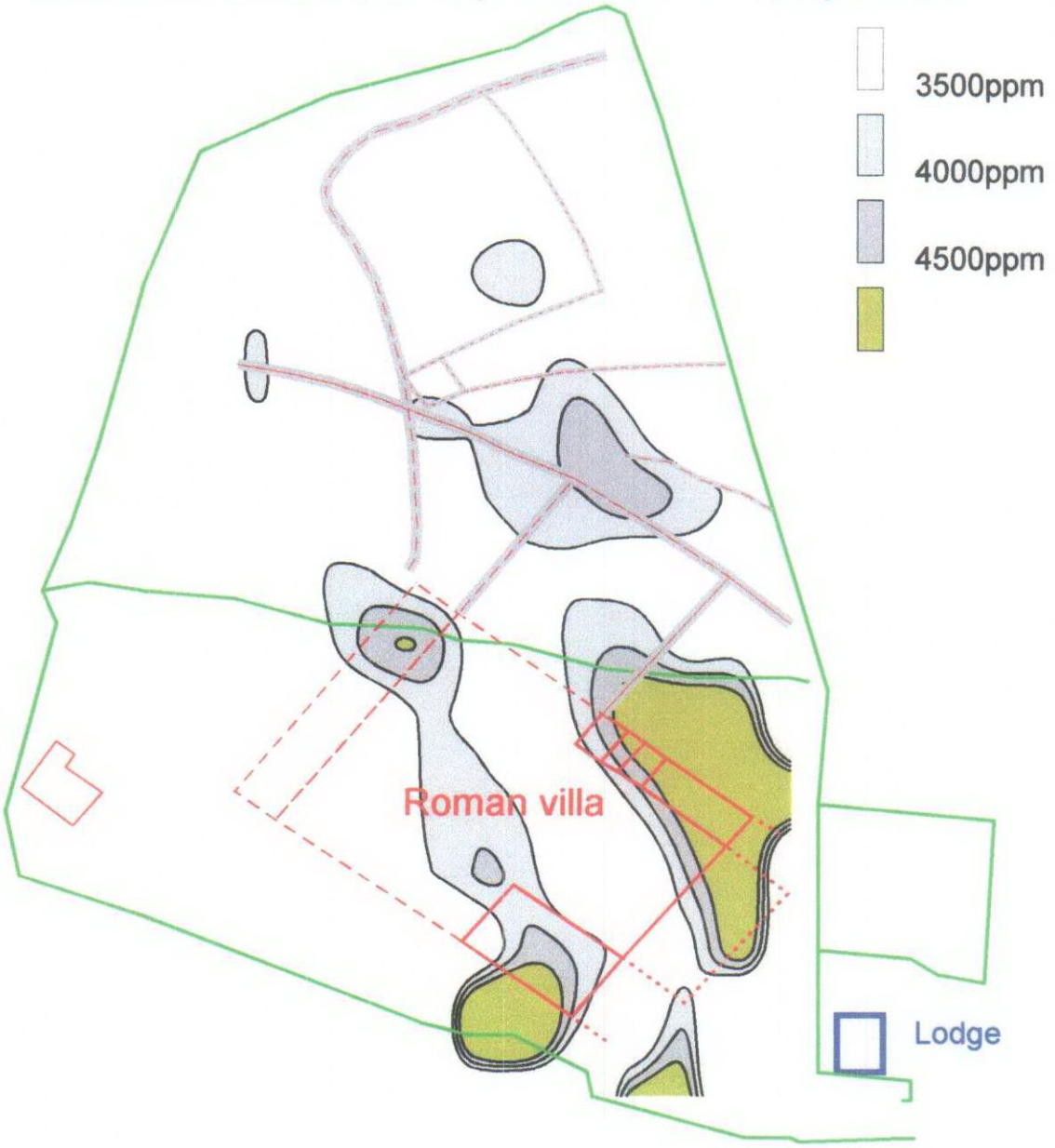
ISOLINE MAPS



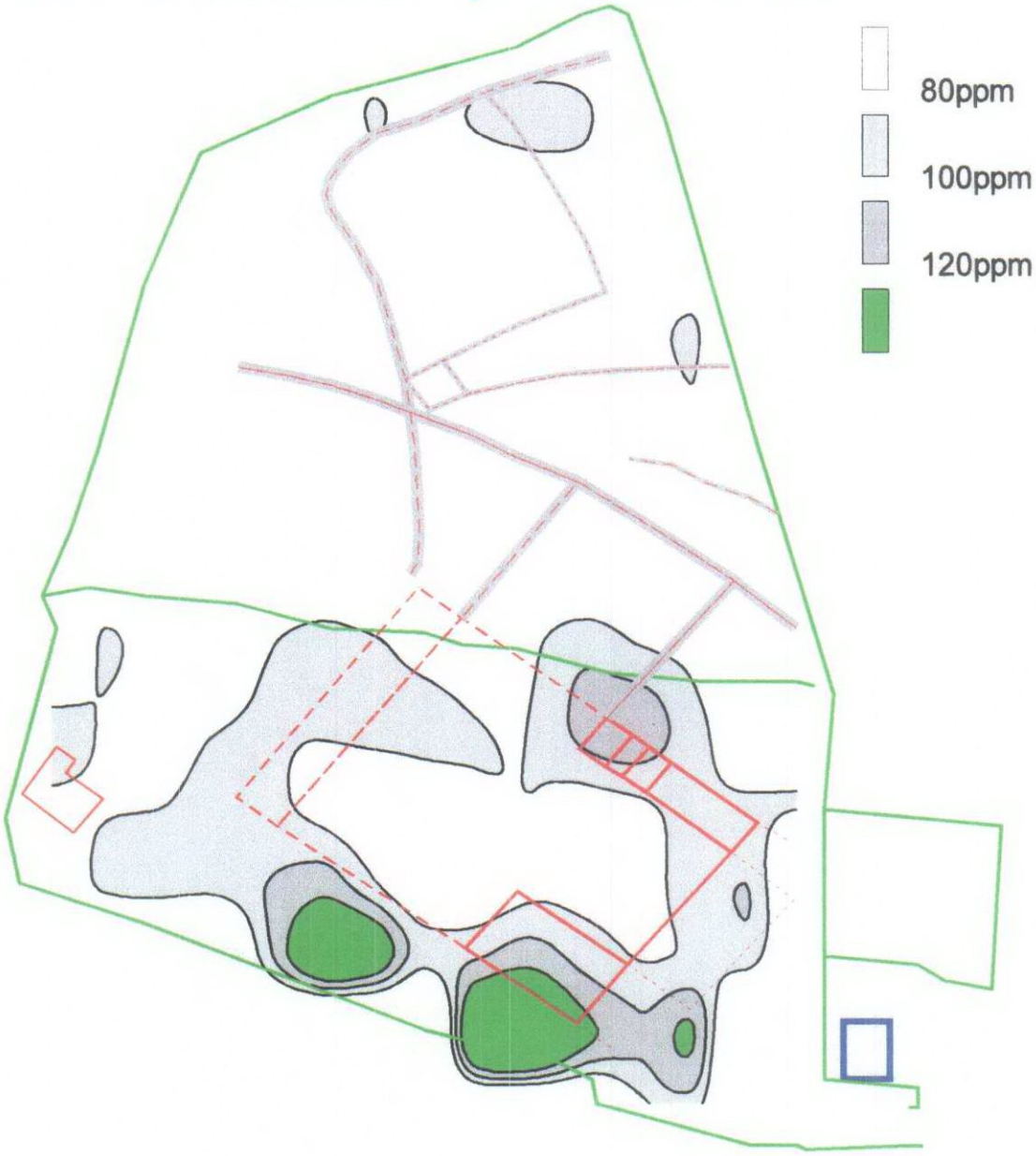
Lower Woods "Stanley Meadow" Loss on Ignition



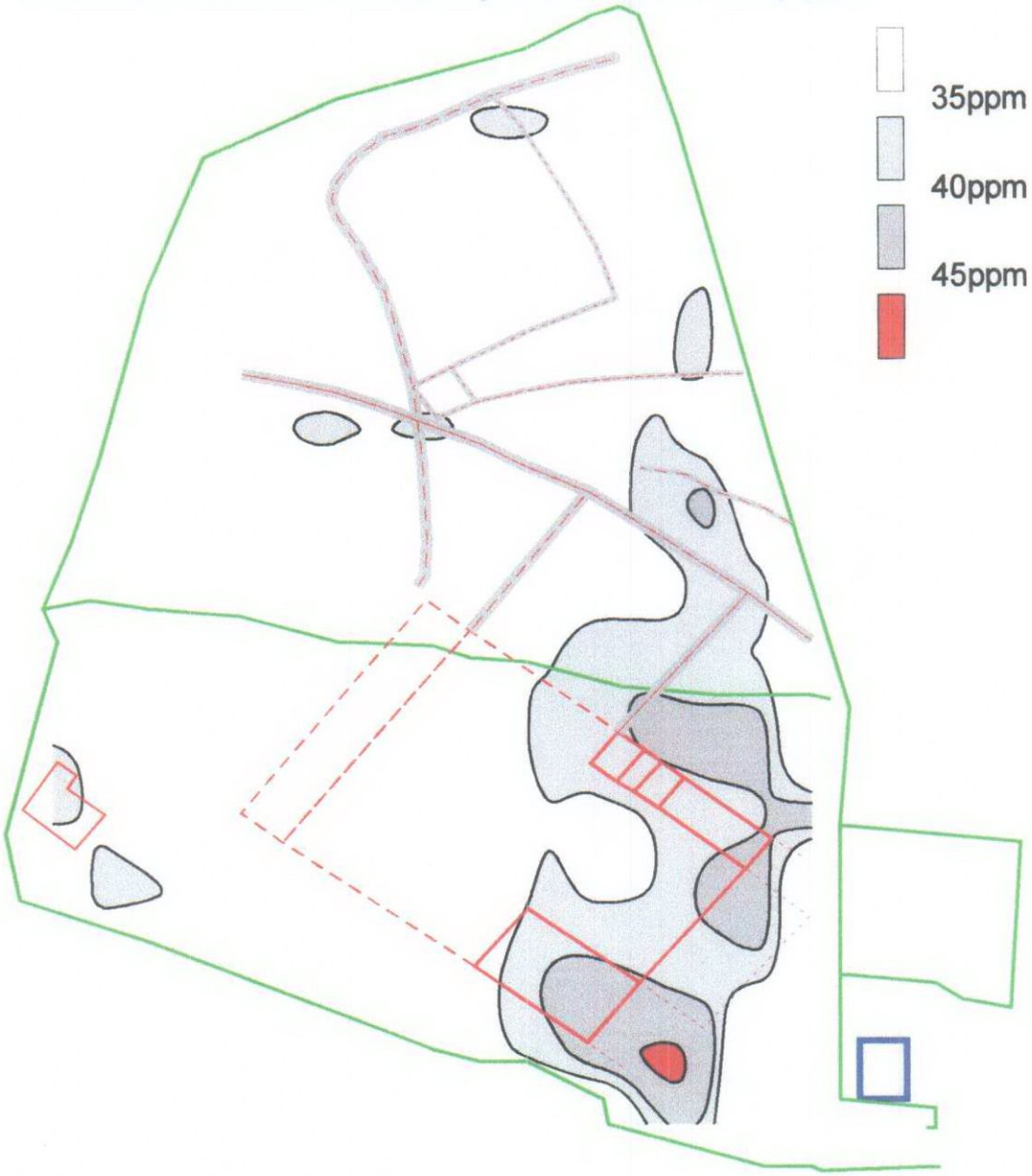
Lower Woods "Stanley Meadow" Phosphorus



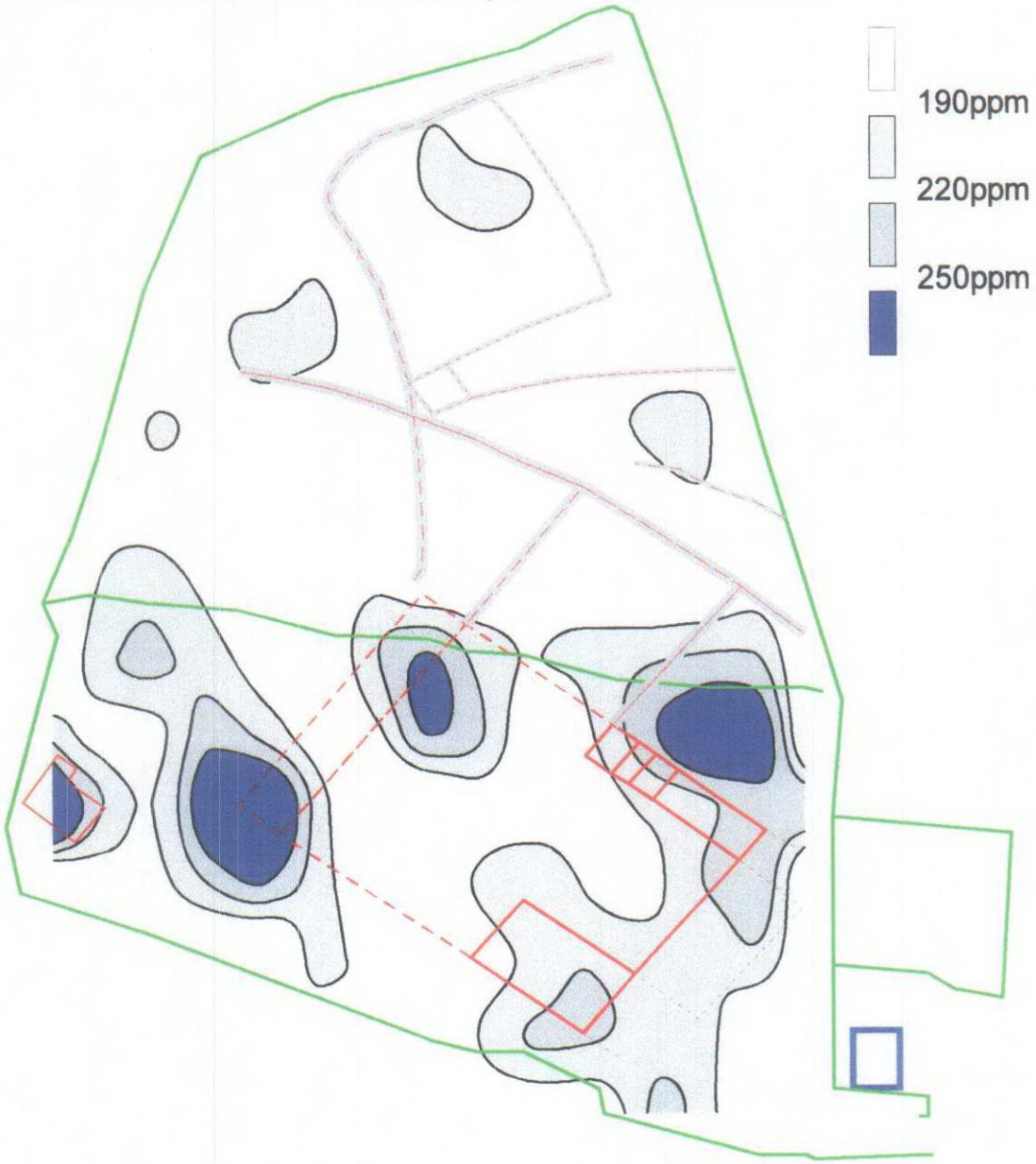
Lower Woods "Stanley Meadow" Lead



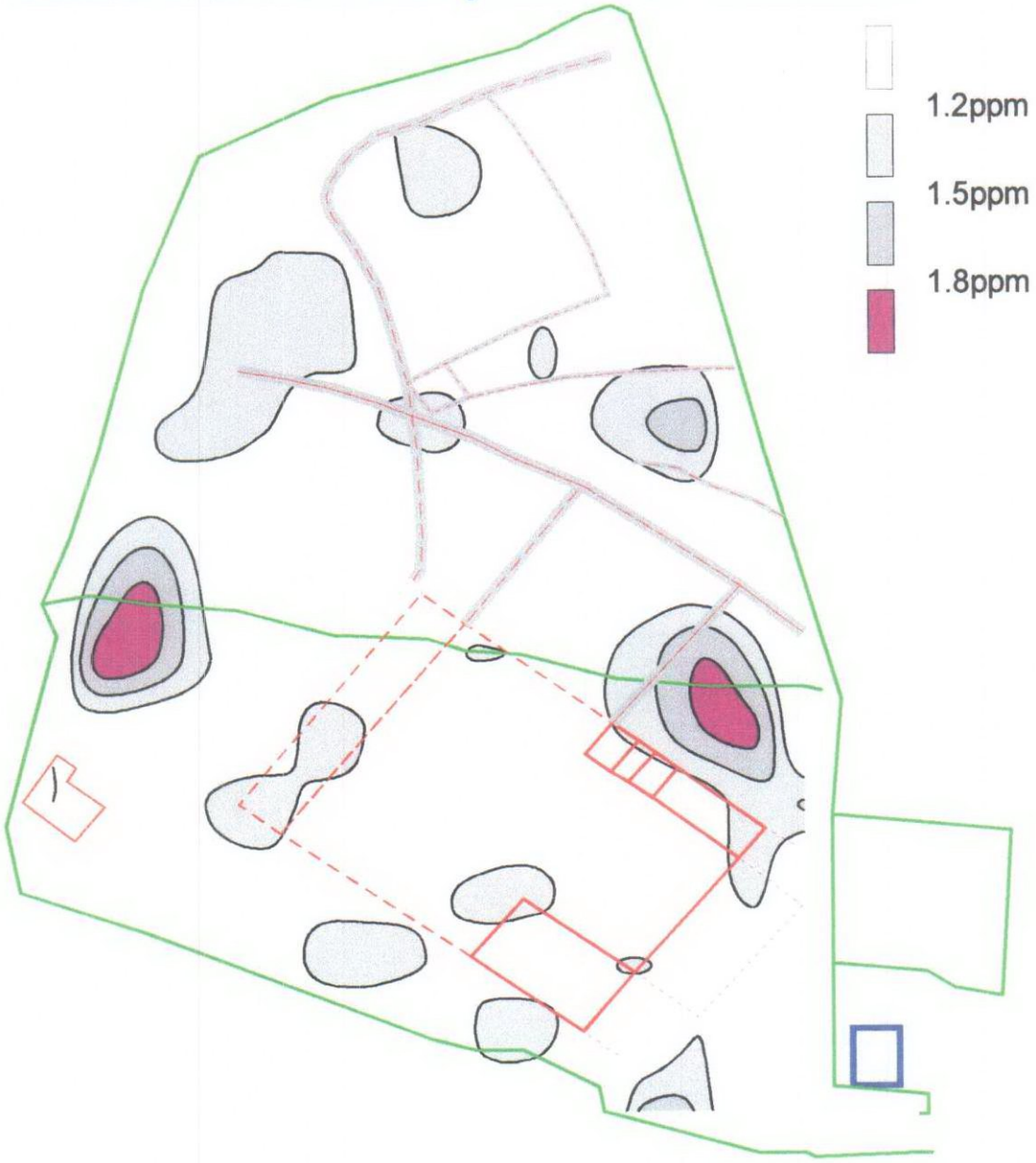
Lower Woods "Stanley Meadow" Copper



Lower Woods "Stanley Meadow" Zinc

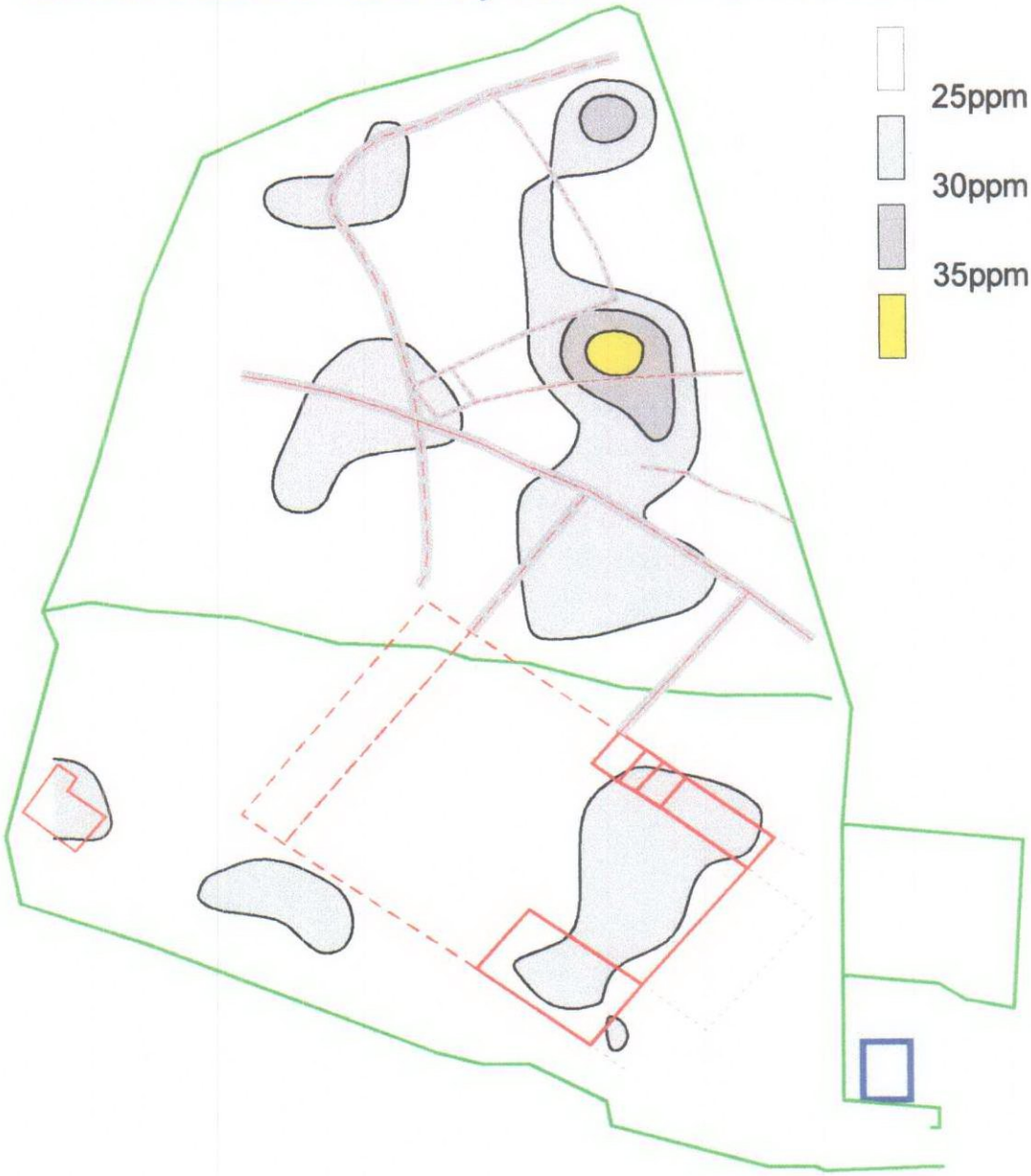


Lower Woods "Stanley Meadow" Cadmium

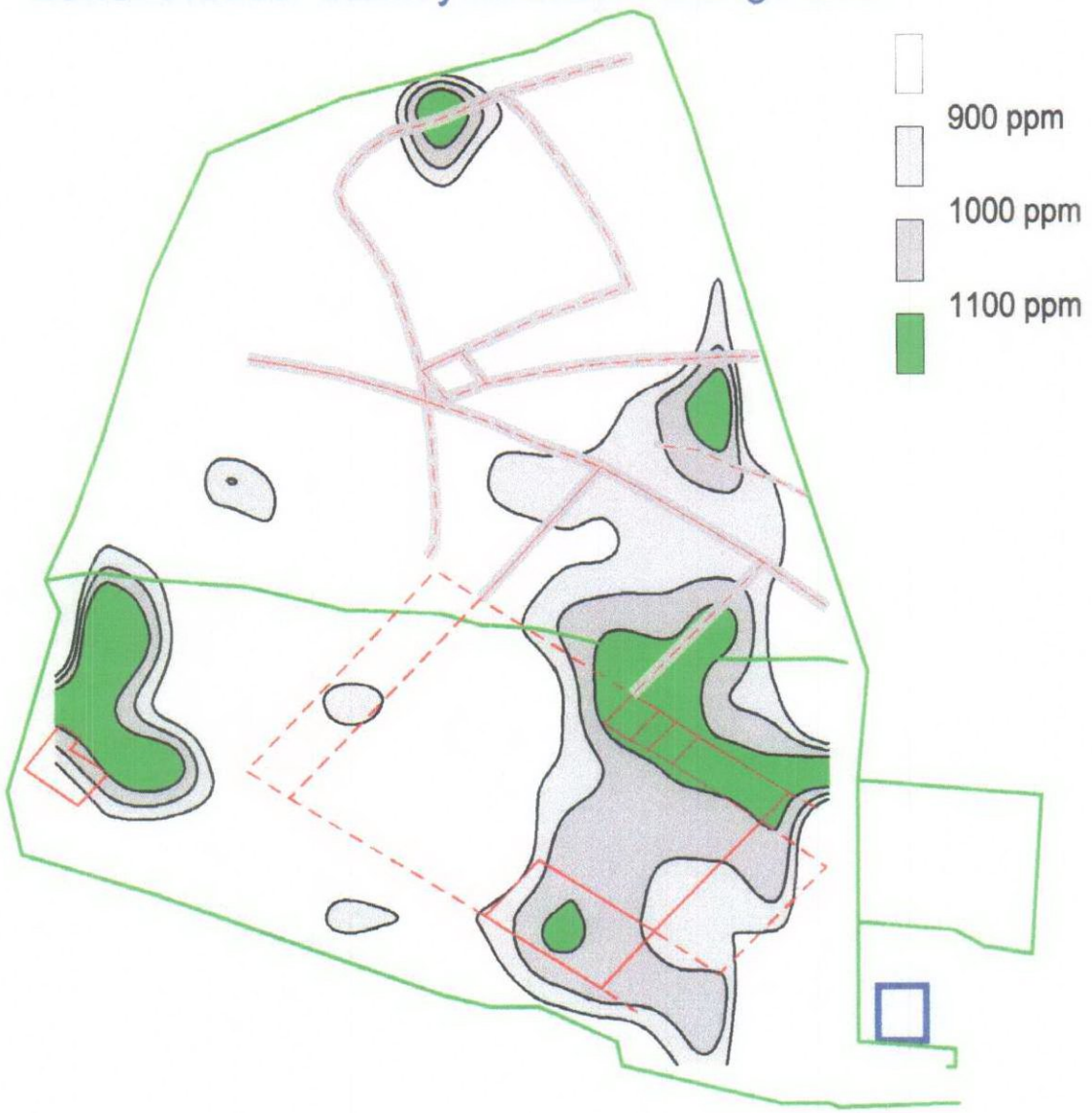


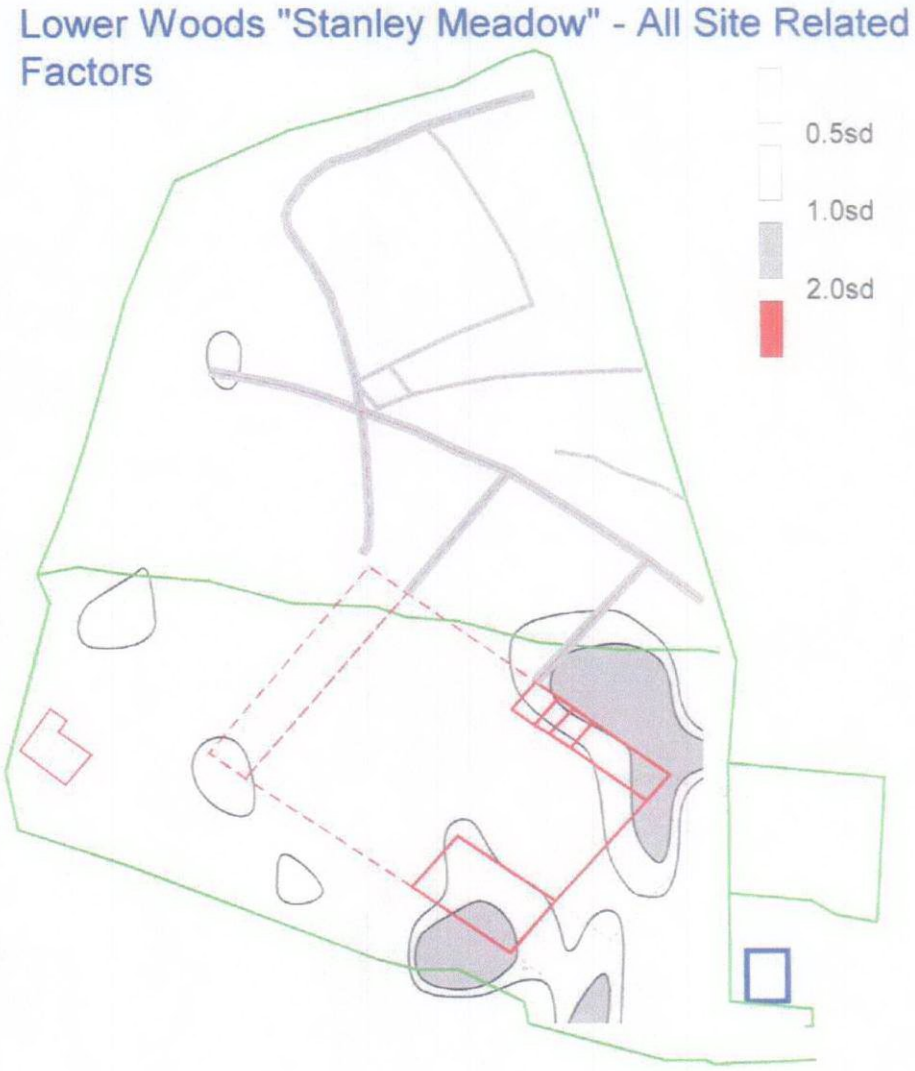
Lower Woods "Stanley Meadow" Nickel

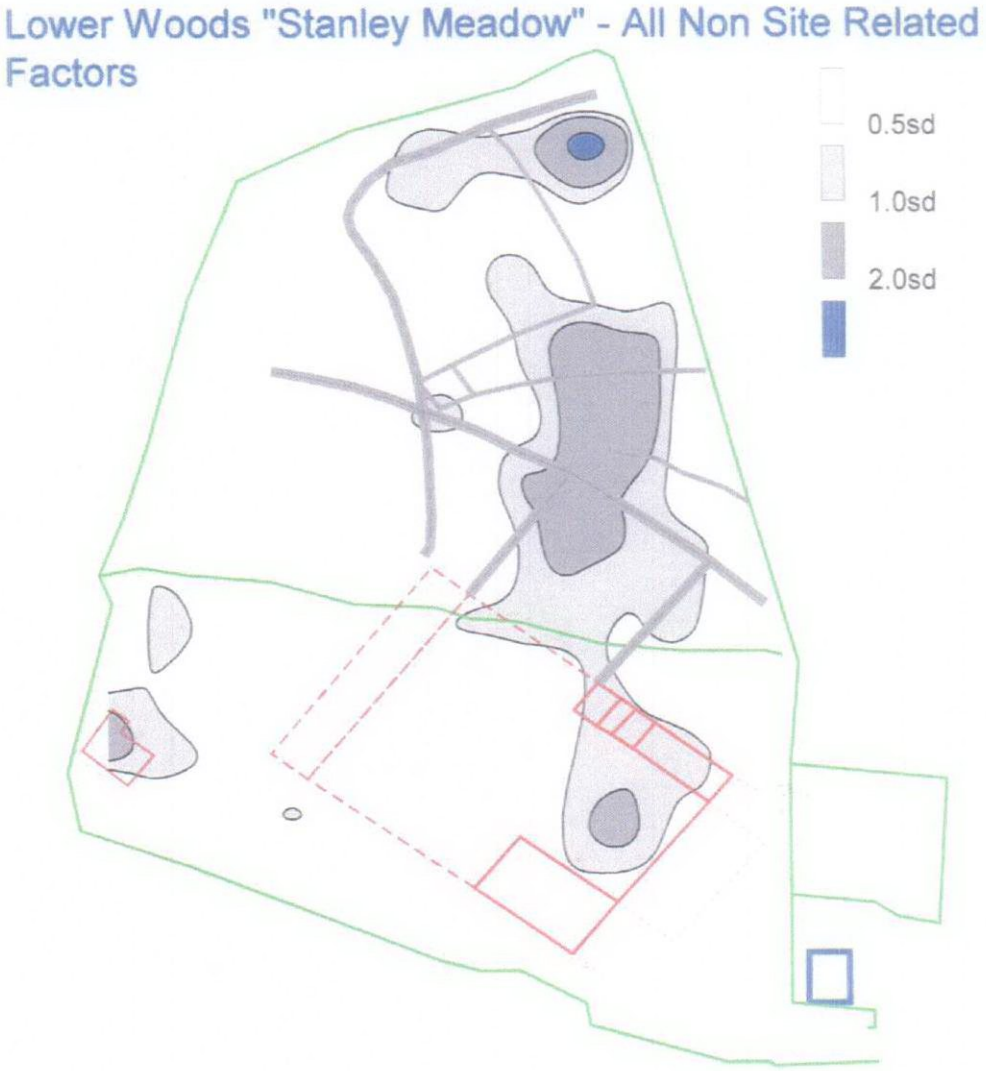
Lower Woods "Stanley Meadow" Chromium



Lower Woods "Stanley Meadow" Manganese




Lower Woods "Stanley Meadow" - All Site Related Factors
0.5sd
1.0sd
2.0sd


Lower Woods "Stanley Meadow" - All Non Site Related Factors
0.5sd
1.0sd
2.0sd

Soil Analysis of Stanley Meadow, Lower Woods.

Descriptive Statistics

Variable	N	Mean	Median	TrMean	StDev	SE Mean
MS	91	25.85	22.00	24.27	14.95	1.57
LOI	91	21.393	21.795	21.735	3.590	0.376
Phosphor	91	3018	2936	2995	1189	125
Lead	91	76.57	71.66	74.99	21.80	2.28
Copper	91	32.911	32.606	33.105	5.179	0.543
Zinc	91	189.71	181.50	186.11	33.13	3.47
Cadmium	91	1.0780	1.1183	1.0734	0.3066	0.0321
Nickel	91	30.210	30.559	30.390	3.318	0.348
Chromium	91	22.173	22.567	22.283	4.621	0.484
Manganes	91	774.1	816.7	775.9	271.6	28.5

Variable	Minimum	Maximum	Q1	Q3
MS	6.00	81.00	17.00	26.00
LOI	5.932	27.847	19.943	23.755
Phosphor	159	6214	2161	3699
Lead	13.64	172.69	64.91	83.82
Copper	9.419	44.853	30.979	34.577
Zinc	141.00	313.85	167.91	197.53
Cadmium	0.3697	2.1450	0.9219	1.2275
Nickel	17.792	37.786	28.519	32.125
Chromium	4.536	37.543	19.192	24.863
Manganes	263.0	1264.7	560.1	977.3

Soil Analysis of Stanley Meadow, Lower Woods.

Correlations (Pearson)

	MS	LOI	Phosphor	Lead	Copper	Zinc	Cadmium	Nickel
LOI	0.155							
Phosphor	0.507	0.419						
Lead	0.489	0.103	0.236					
Copper	0.659	0.048	0.334	0.422				
Zinc	0.391	-0.002	0.312	0.300	0.454			
Cadmium	0.255	0.239	0.206	0.230	0.450	0.424		
Nickel	0.224	-0.148	0.072	-0.016	0.548	0.124	0.248	
Chromium	-0.017	0.051	-0.116	-0.091	0.310	0.037	0.051	0.335
Manganes	0.550	-0.107	0.248	0.302	0.582	0.294	0.290	0.692

	Chromium
Manganes	0.135

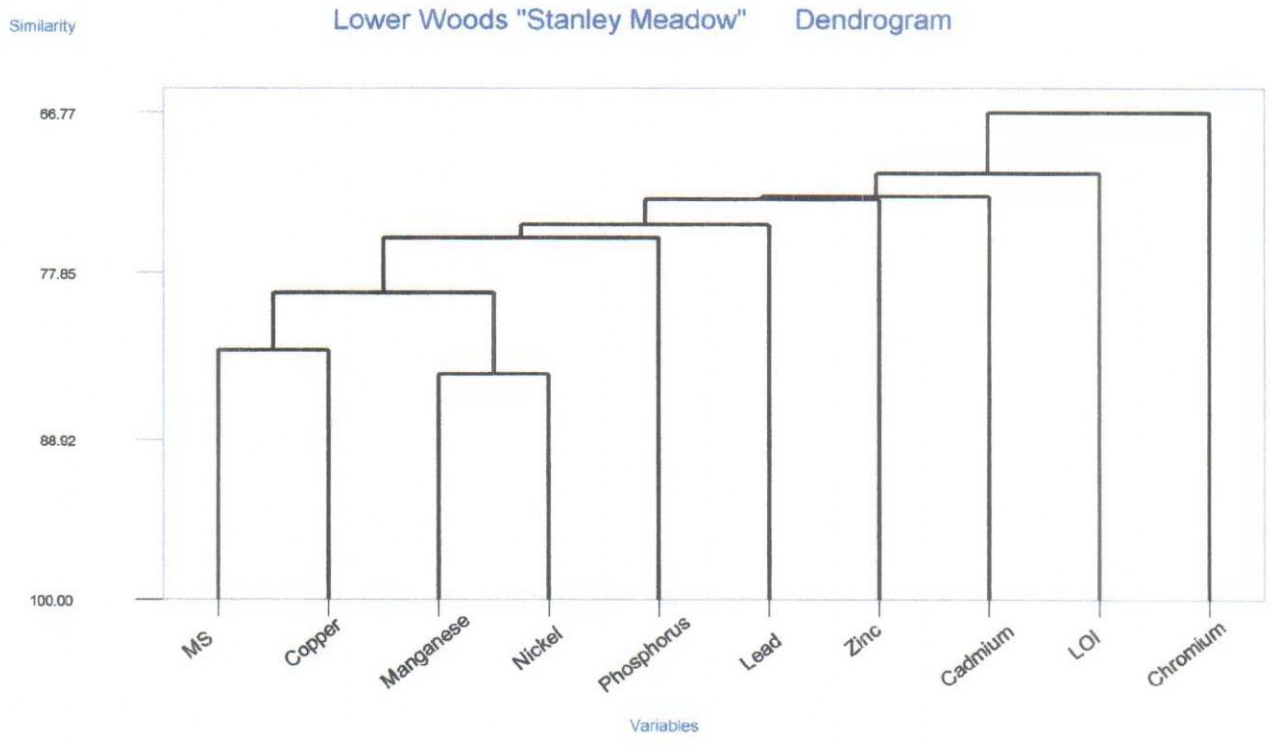
Soil Analysis of Stanley Meadow, Lower Woods.

Hierarchical Cluster Analysis of Variables

Correlation Coefficient Distance, Single Linkage

Amalgamation Steps

Step	Number of clusters	Similarity level	Distance level	Clusters joined		New cluster	Number of obs. in new cluster
1	9	84.59	0.308	8	10	8	2
2	8	82.95	0.341	1	5	1	2
3	7	79.11	0.418	1	8	1	4
4	6	75.36	0.493	1	3	1	5
5	5	74.46	0.511	1	4	1	6
6	4	72.72	0.546	1	6	1	7
7	3	72.50	0.550	1	7	1	8
8	2	70.95	0.581	1	2	1	9
9	1	66.77	0.665	1	9	1	10

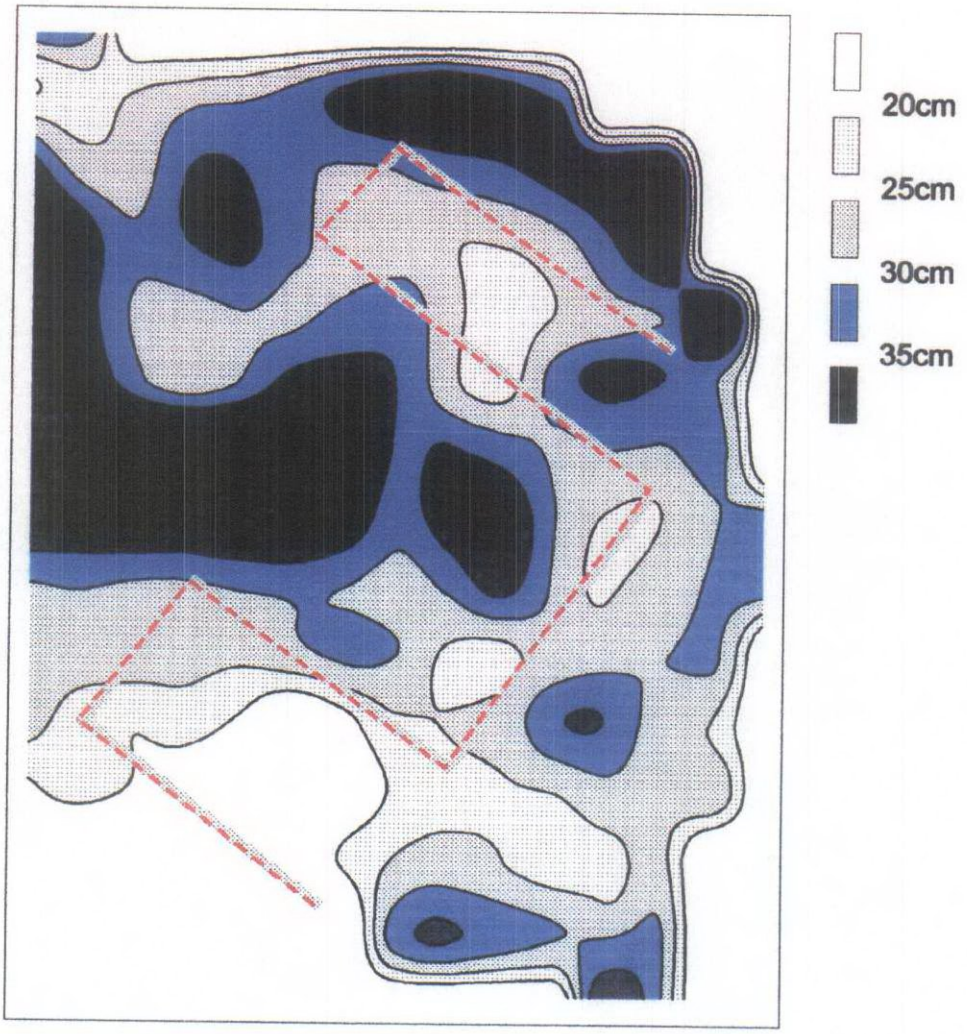


Lower Woods – Other Investigations

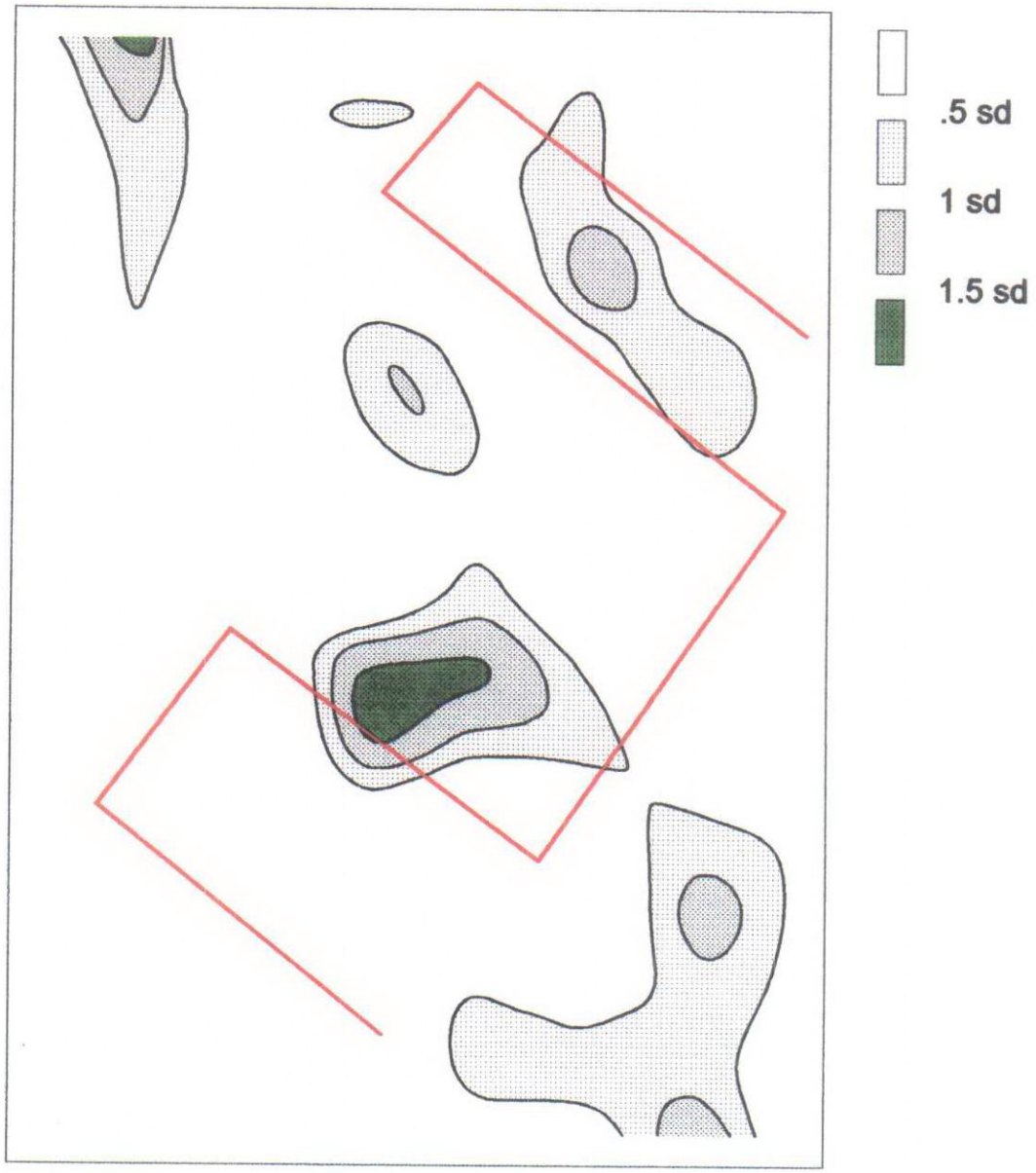
In addition to the soil evaluation of the open meadow, which is reported in the main body of the dissertation, the potential of alternative methods, such as plant sampling, was examined. It was felt these might prove useful within wooded areas where deep leaf litter and dense rooting make soil sampling difficult. Grass samples and soil depths were taken from the villa area of Stanley Meadow. Soil was also taken from within an adjoining part of Crew's Coppice which lay to the east of the meadows. In addition, plant material (in this case Dog's Mercury) was sampled as a single traverse and assessed for indicative elements. Further soil samples were taken from the oldest piece of woodland (Wetmoor) half a kilometre to the south to provide some additional comparative data.

1	Stanley Meadow	soil depth
1a	Stanley Meadow	grass samples
2	Crews Coppice	soil samples
2a	Crews Coppice	plant (Dog's Mercury) samples

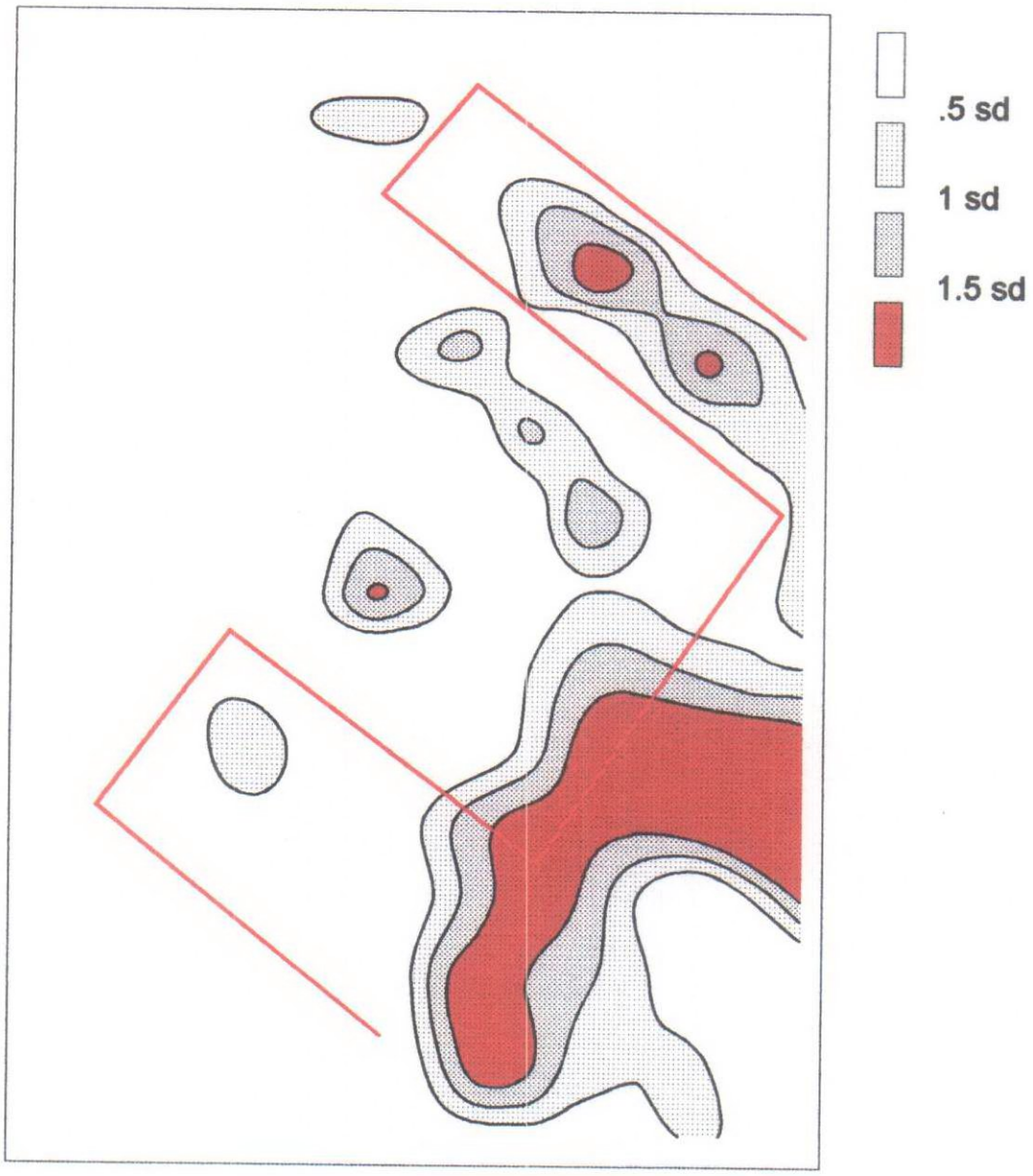
Lower Woods "Stanley Meadow" Soil Depth



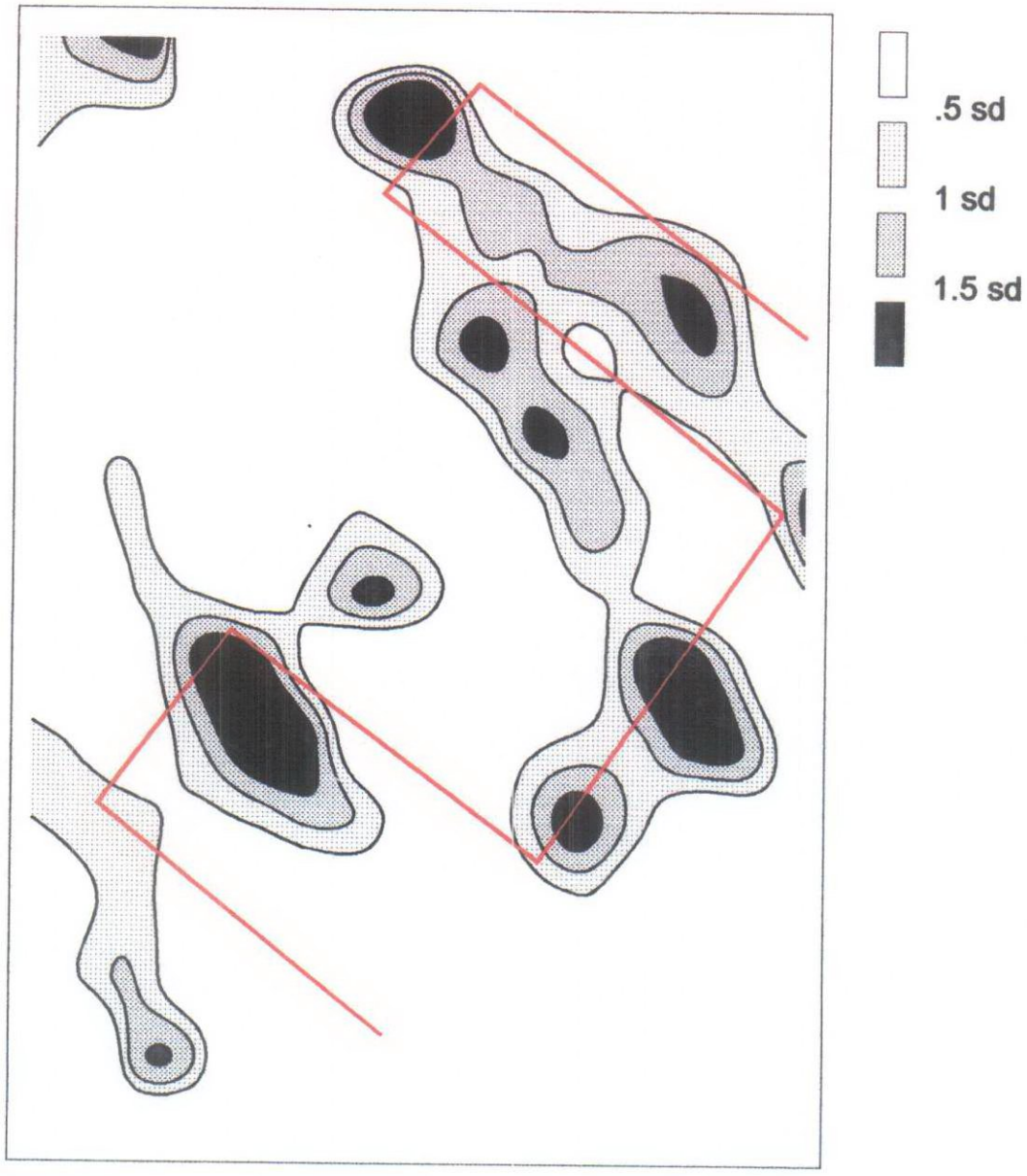
Lower Woods "Stanley Meadow" (Grass) Lead



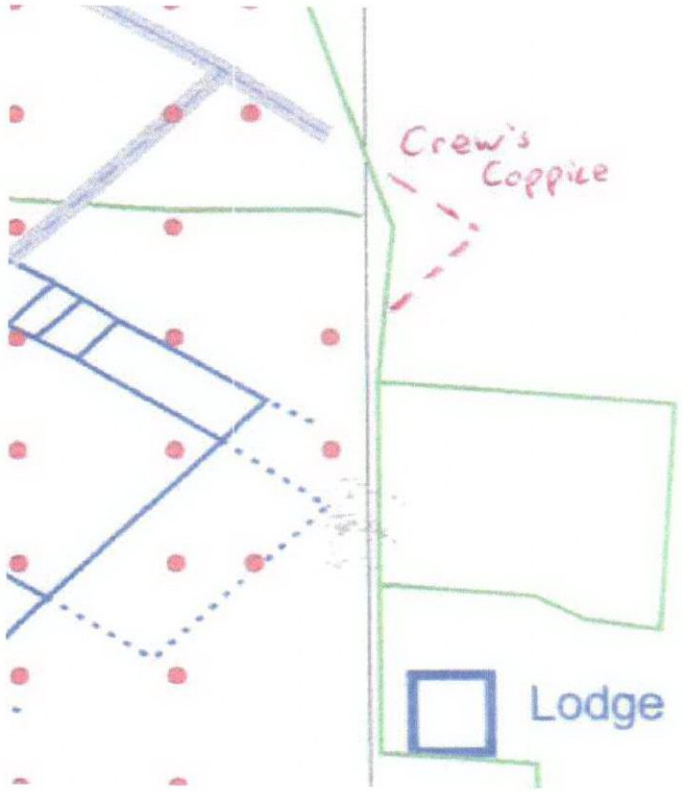
Lower Woods "Stanley Meadow" (Grass)
Copper



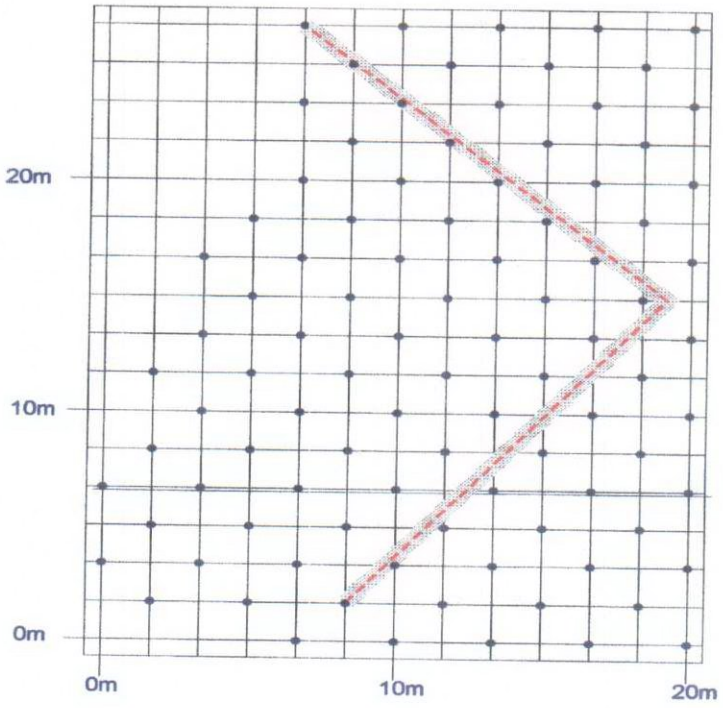
Lower Woods "Stanley Meadow" (Grass)
Zinc



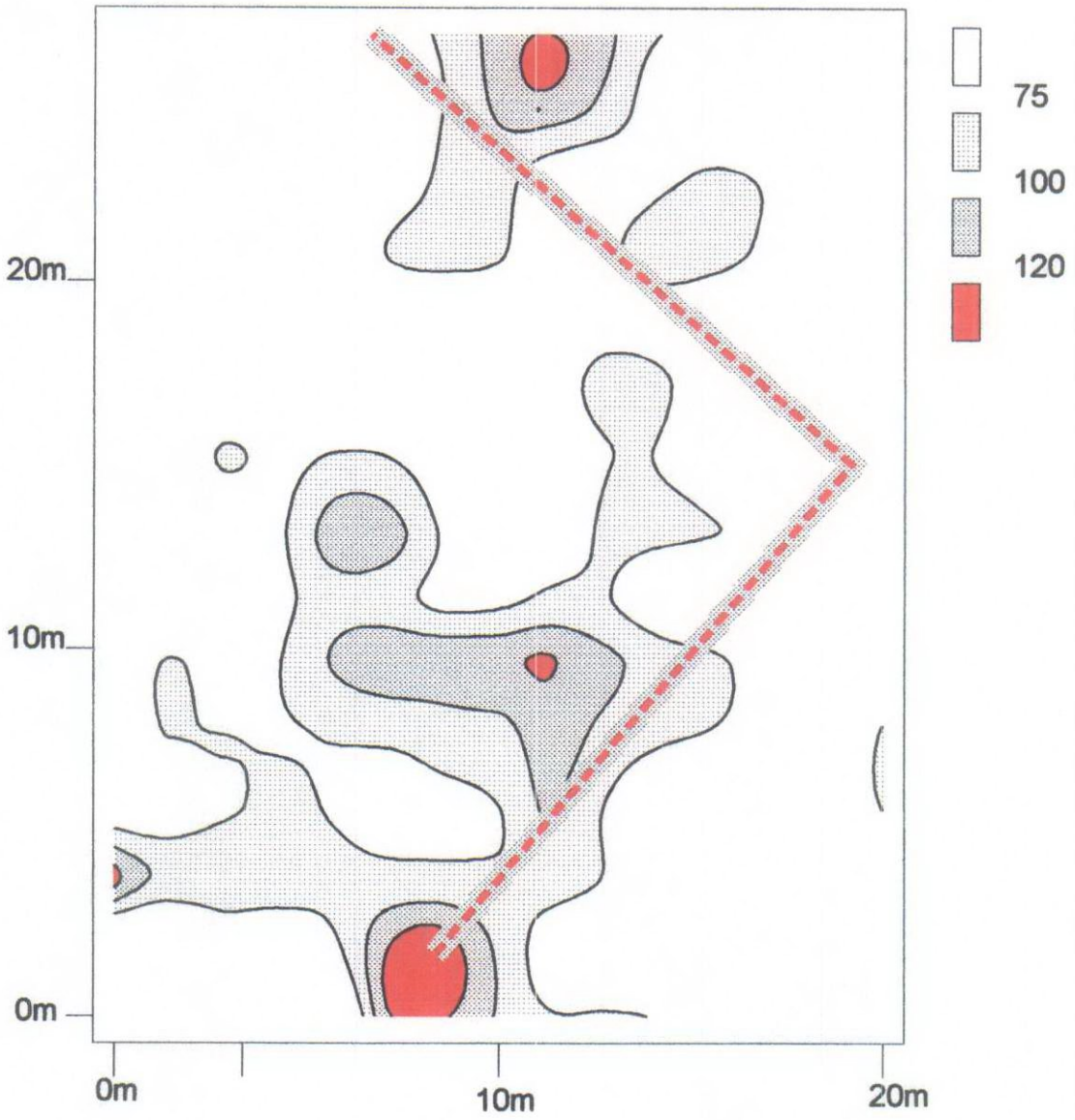
Crews Coppice Soil sampling



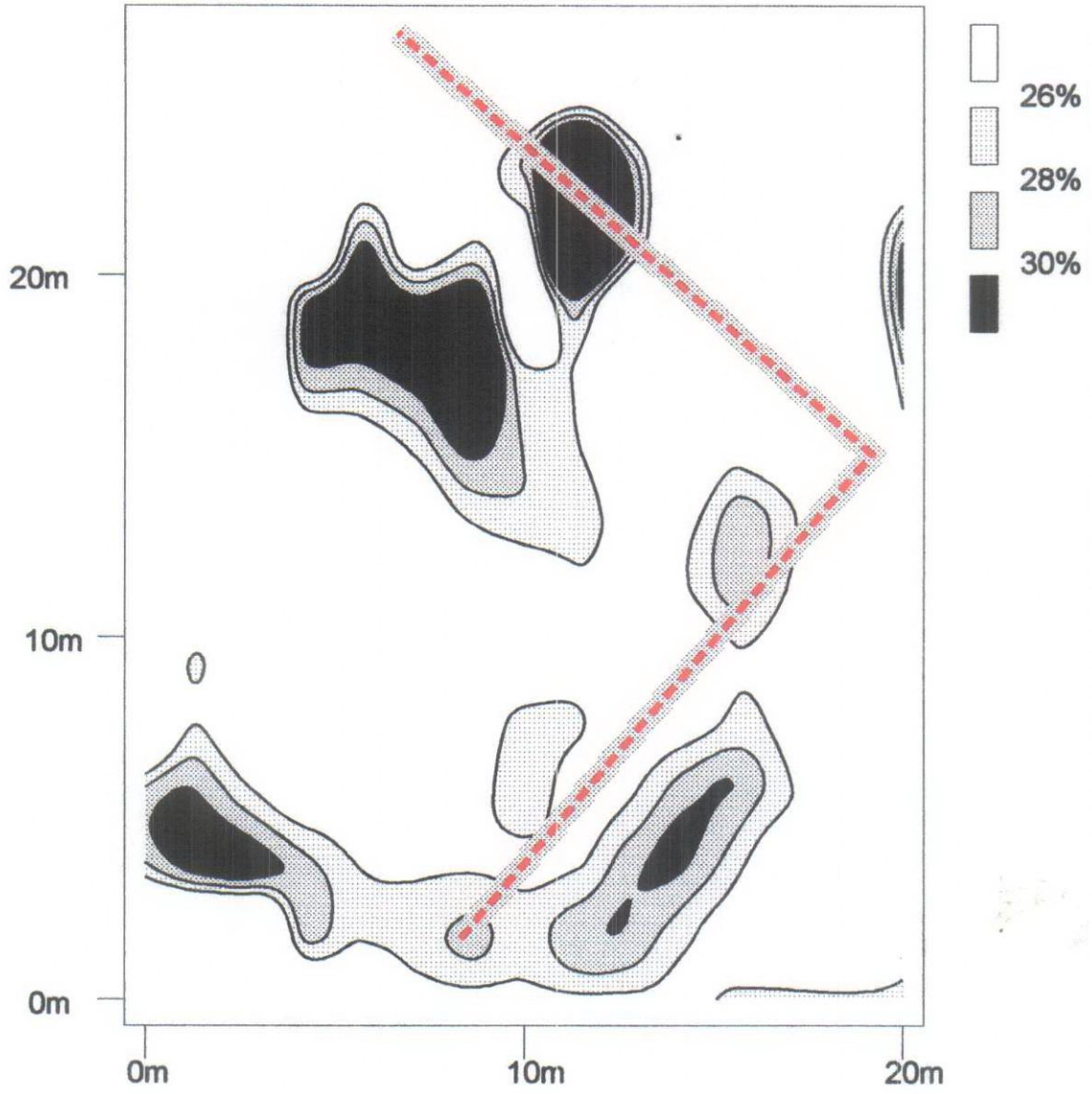
Lower Woods "Crew's Coppice" Sampling Grid



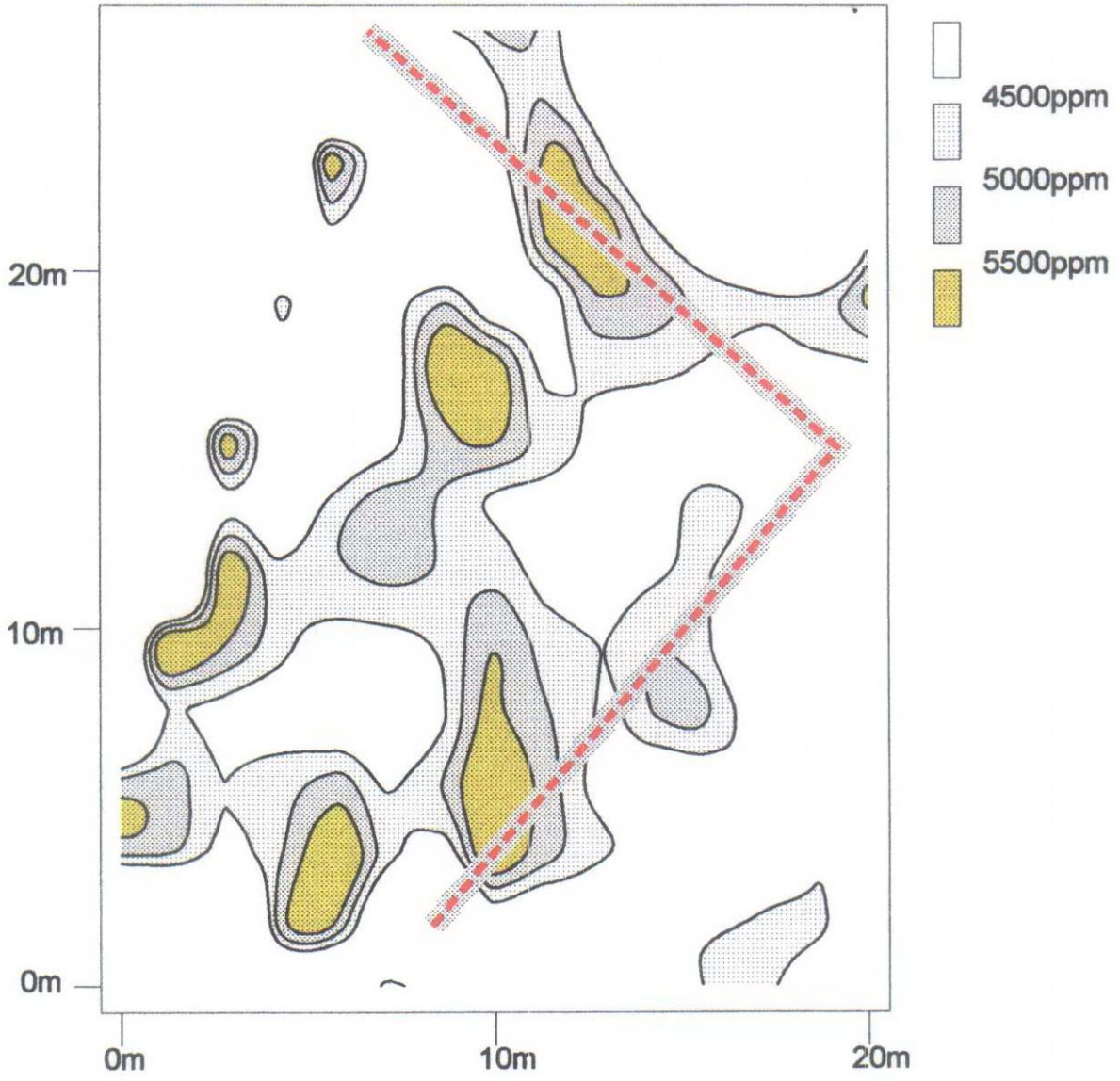
Lower Woods "Crew's Coppice"
Magnetic Susceptibility



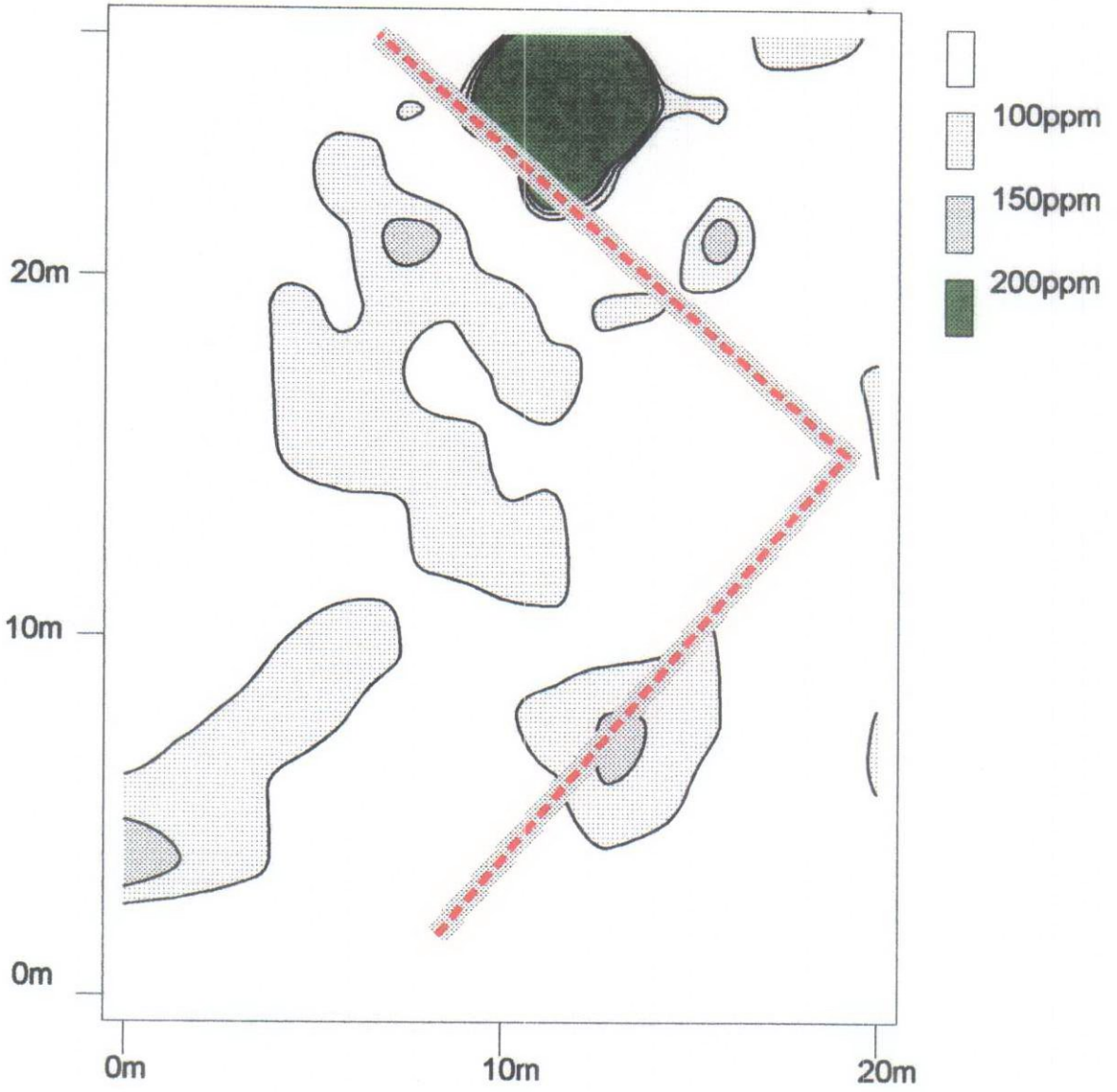
Lower Woods "Crew's Coppice"
Loss on Ignition



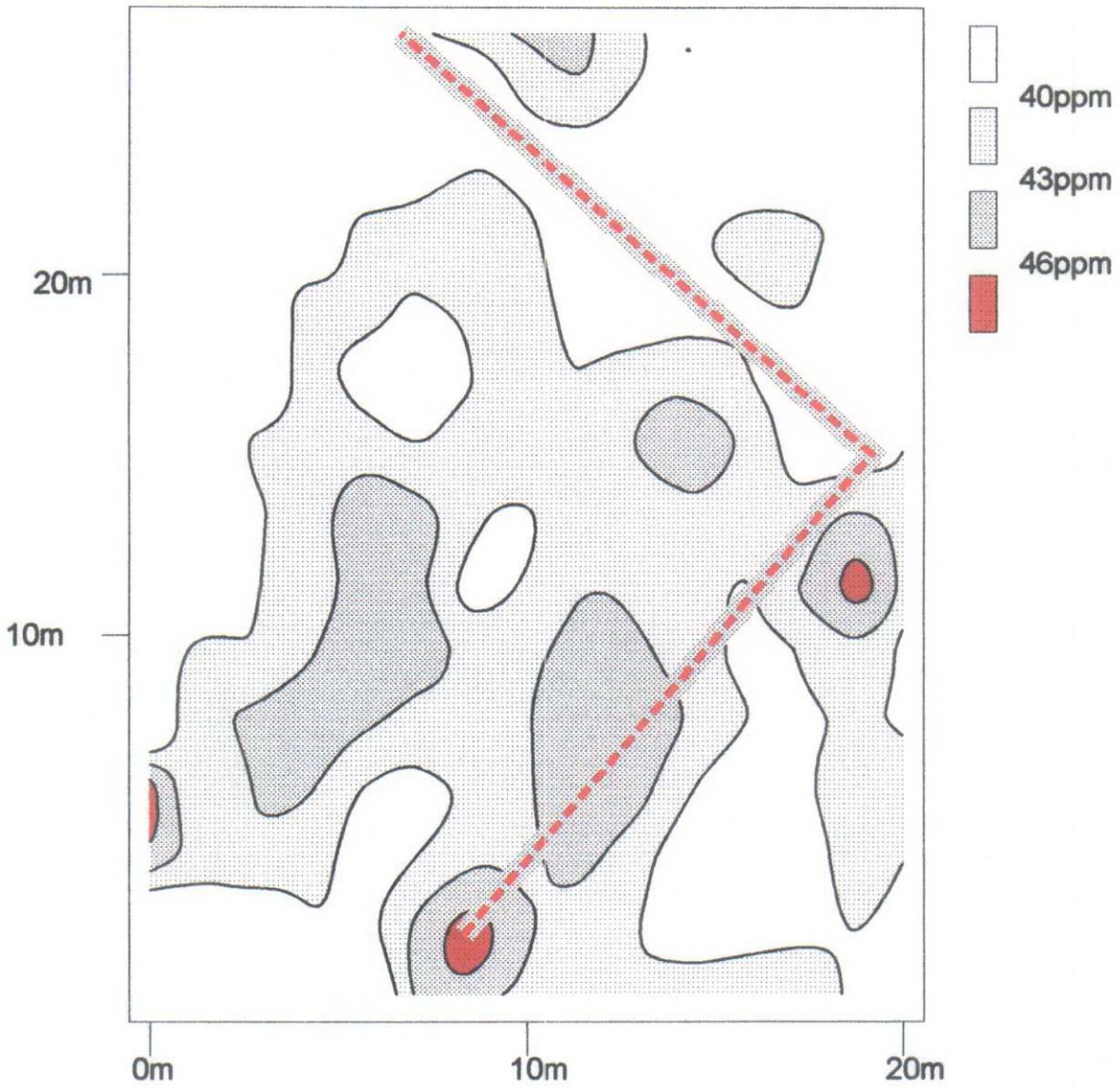
Lower Woods "Crew's Coppice"
Phosphorus



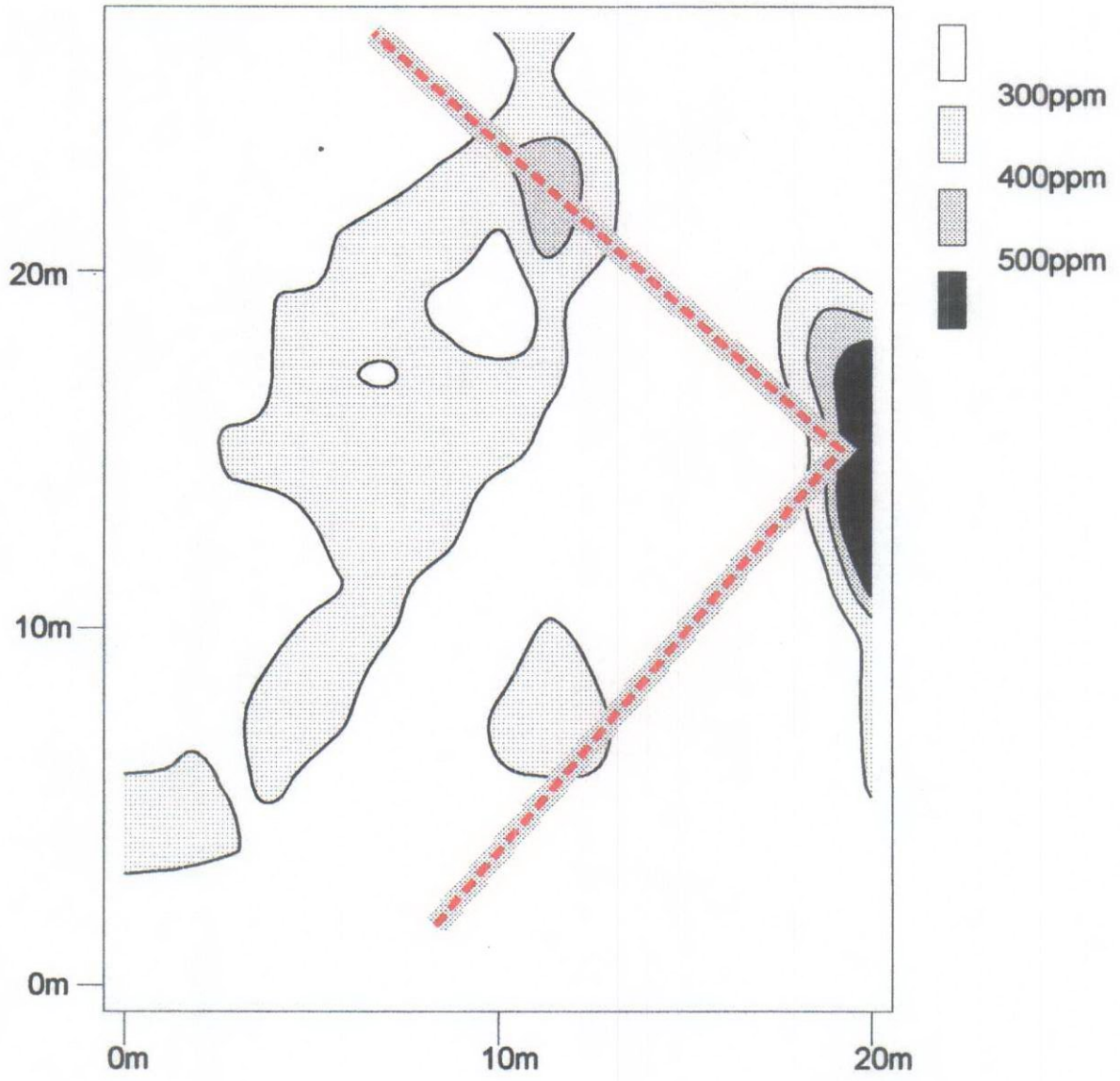
Lower Woods "Crew's Coppice" Lead



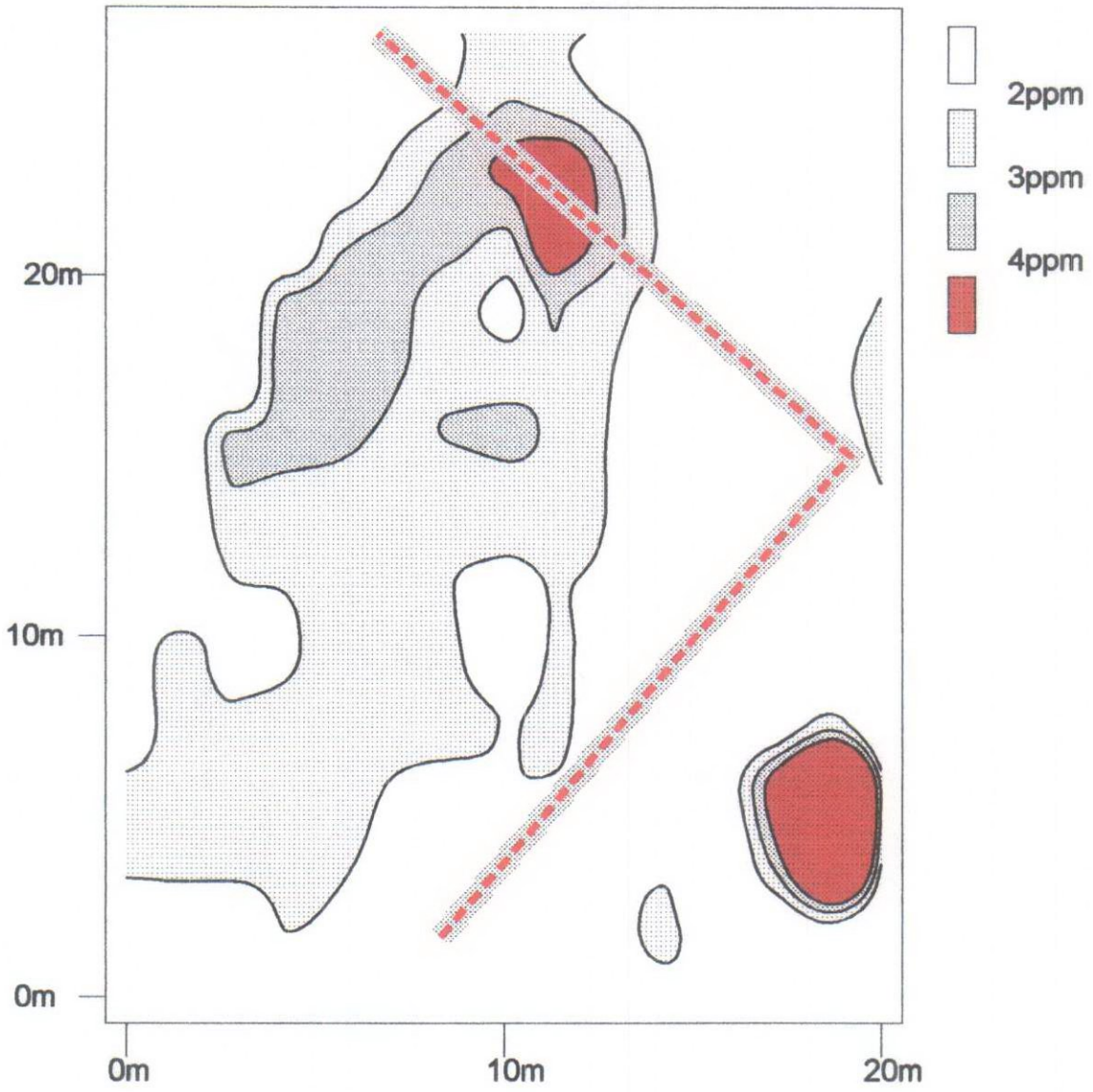
Lower Woods "Crew's Coppice"
Copper



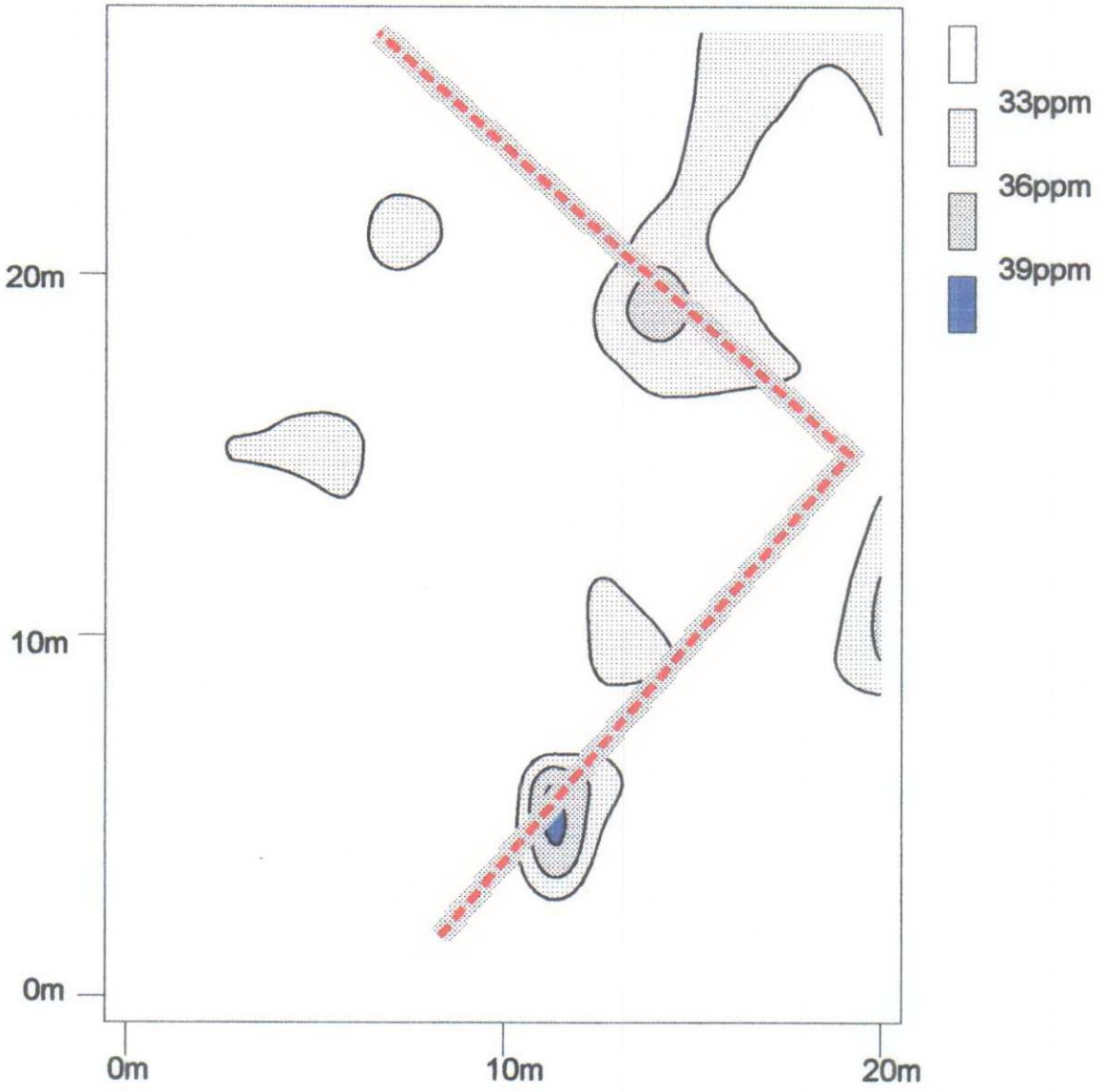
Lower Woods "Crew's Coppice"
Zinc



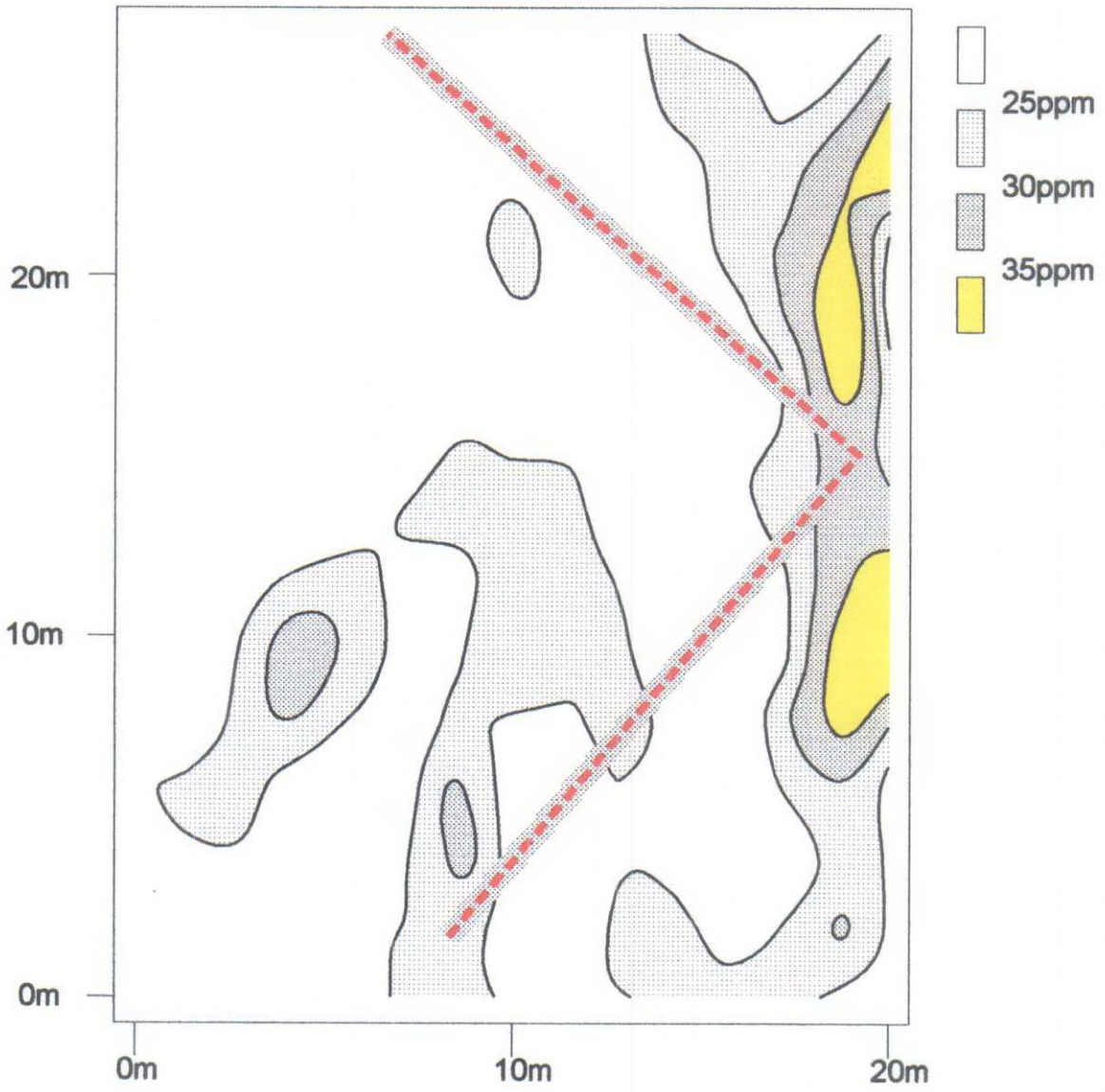
Lower Woods "Crew's Coppice"
Cadmium



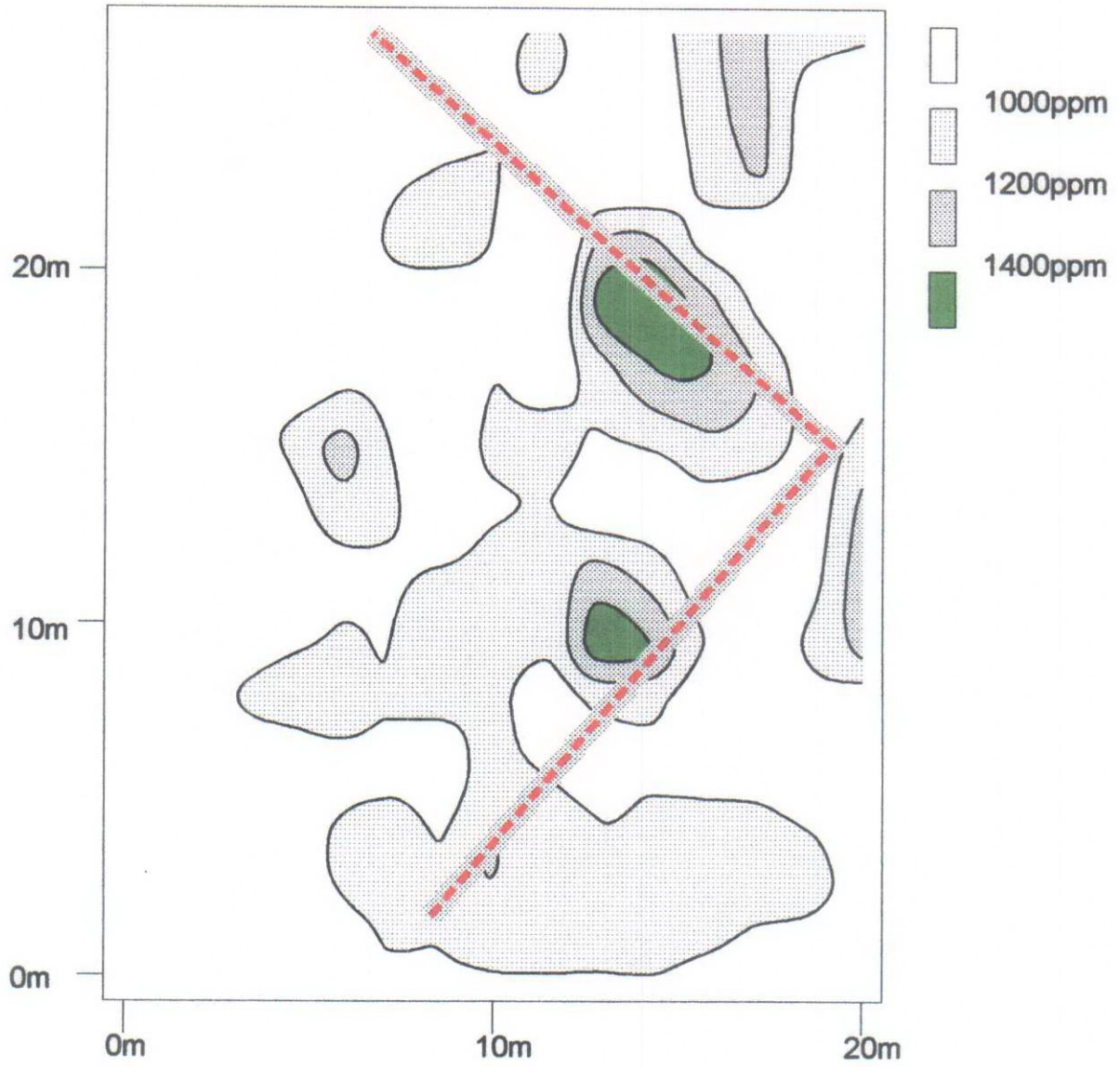
Lower Woods "Crew's Coppice"
Nickel



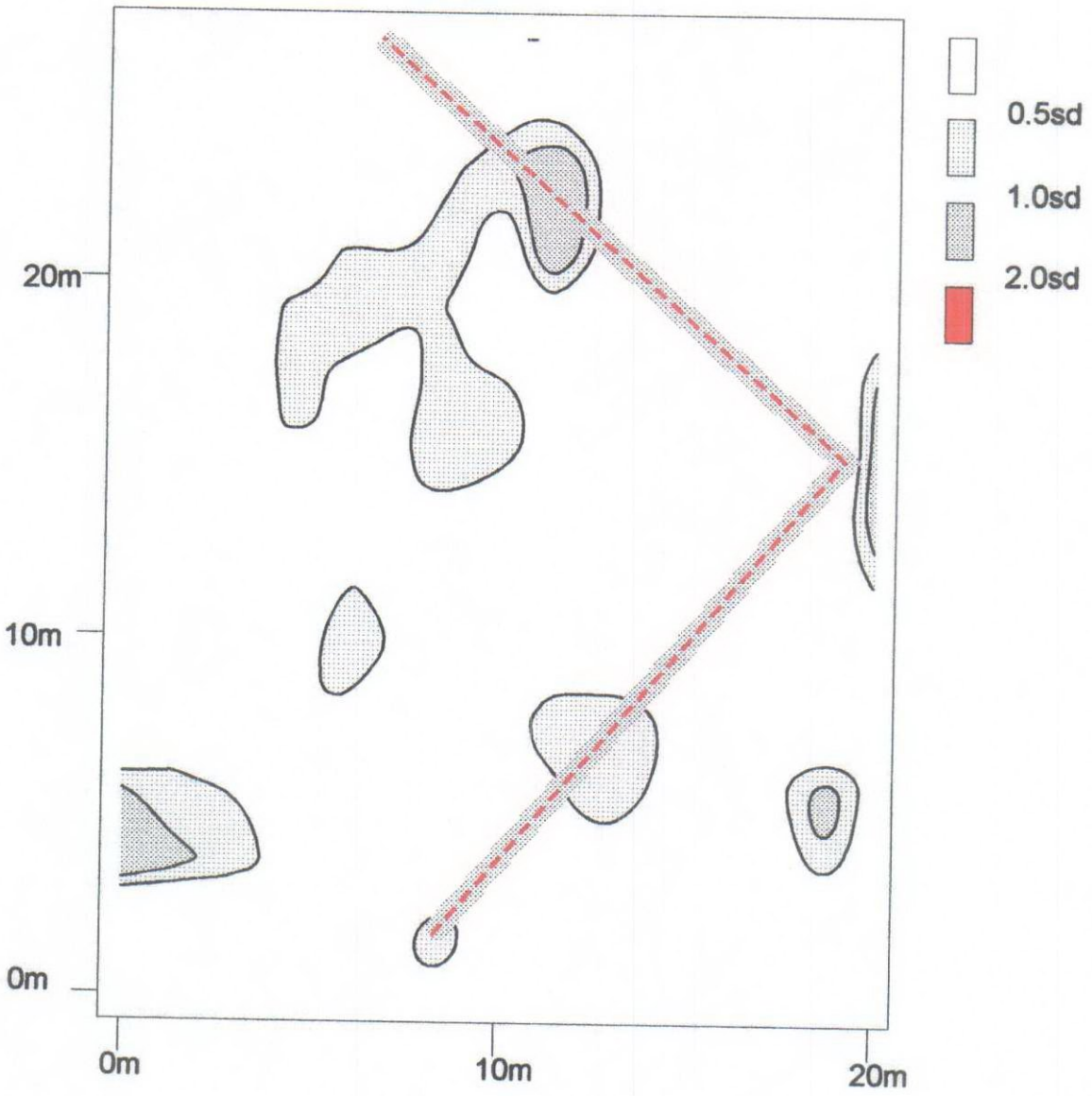
Lower Woods "Crew's Coppice Chromium



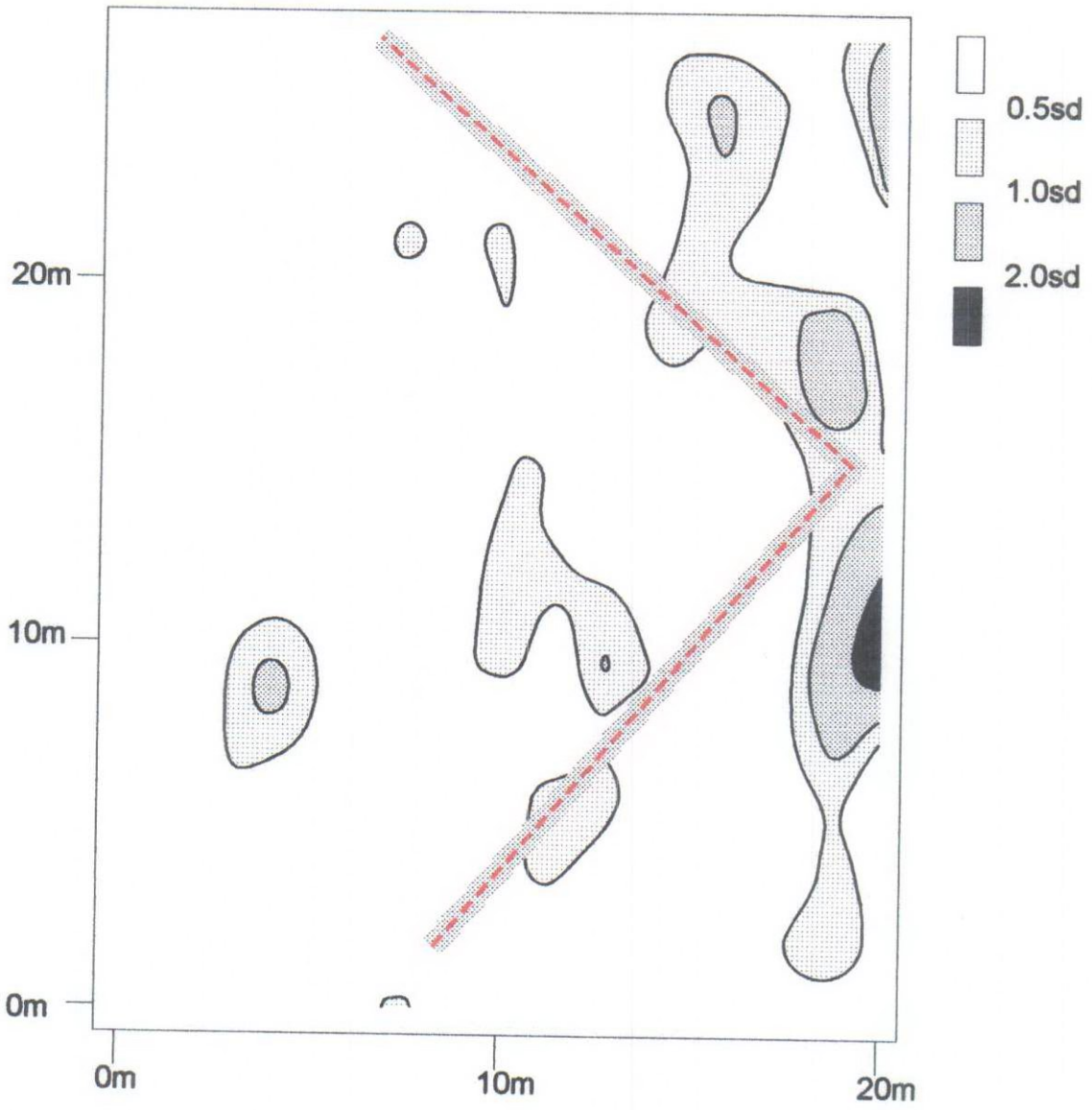
Lower Woods "Crew's Coppice"
Manganese



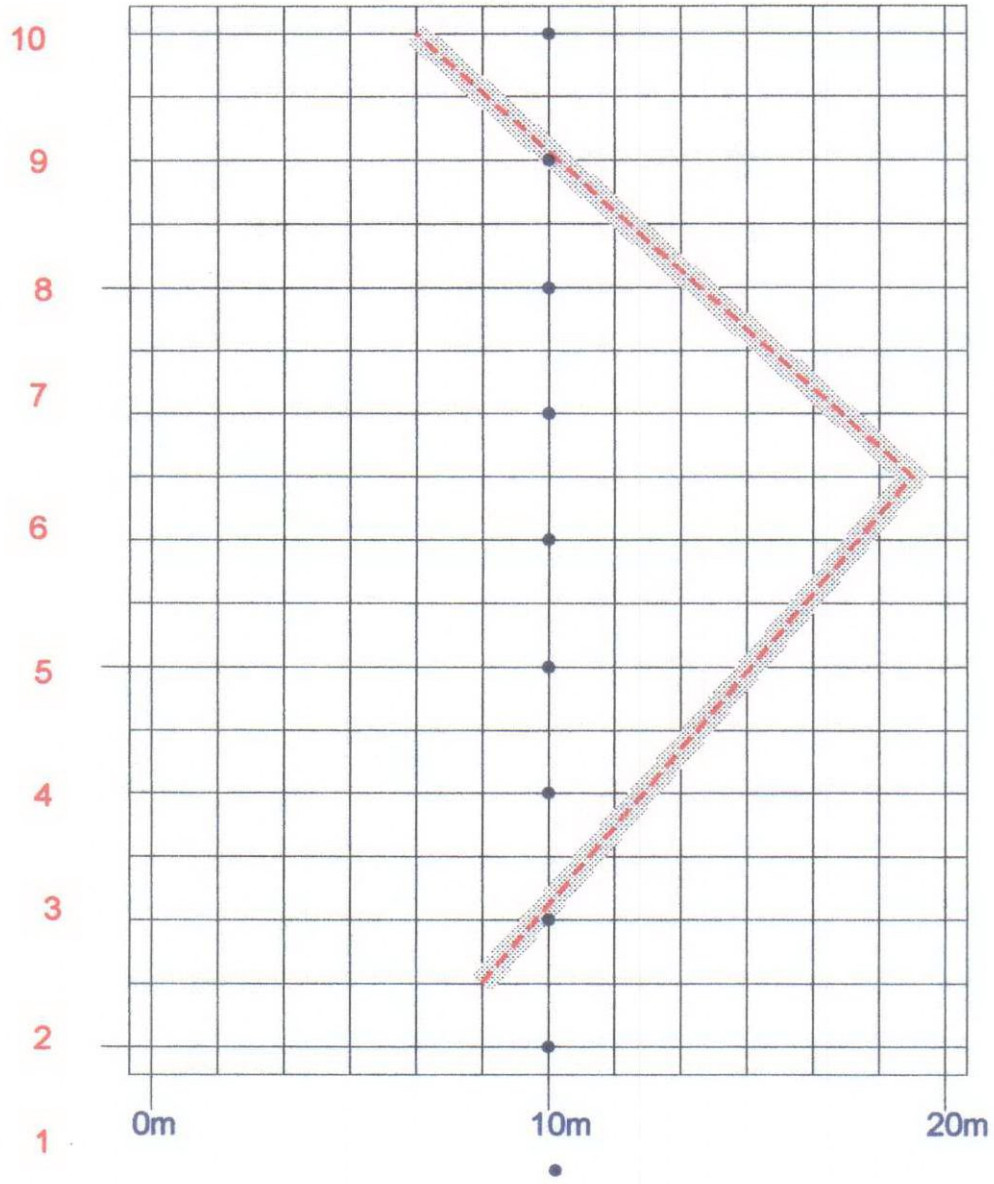
Lower Woods "Crew's Coppice"
Anthropogenic



Lower Woods "Crew's Coppice"
Non-Anthropogenic

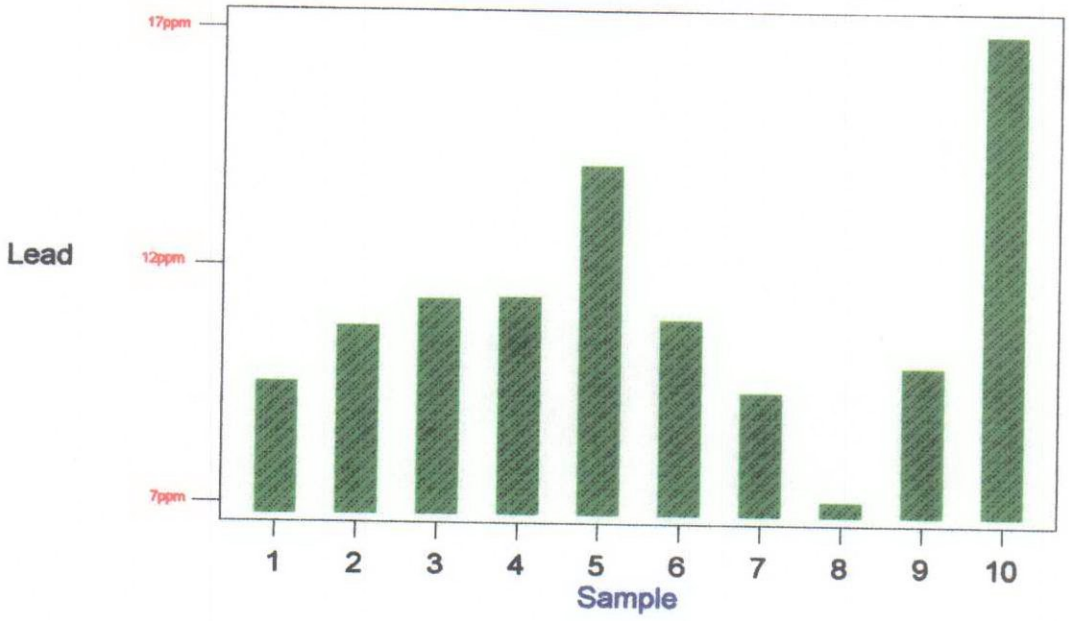


Lower Woods "Crew's Coppice"
Dog's Mercury Transect



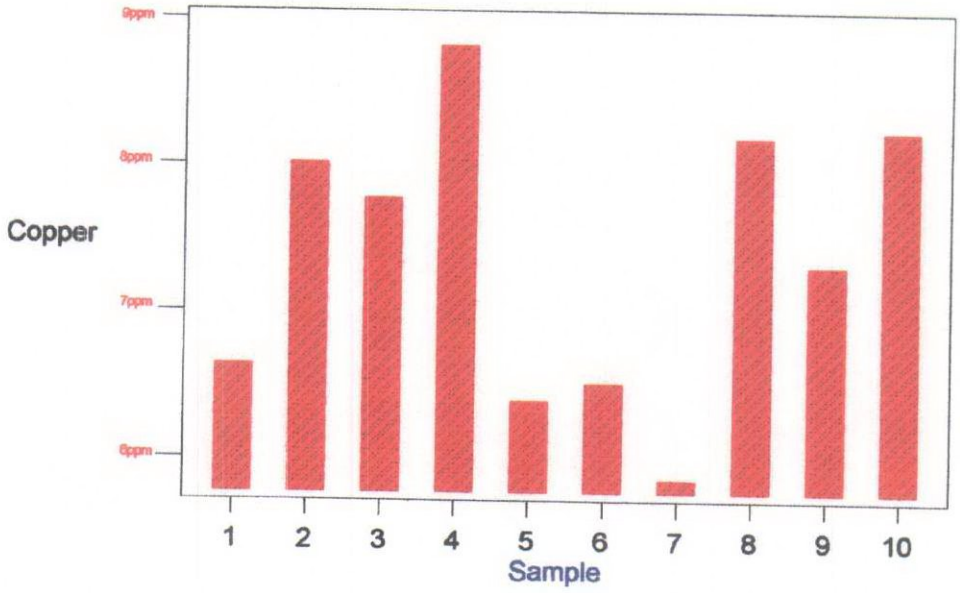
Lower Woods "Crew's Coppice"

Dog's MercuryTransect - Lead



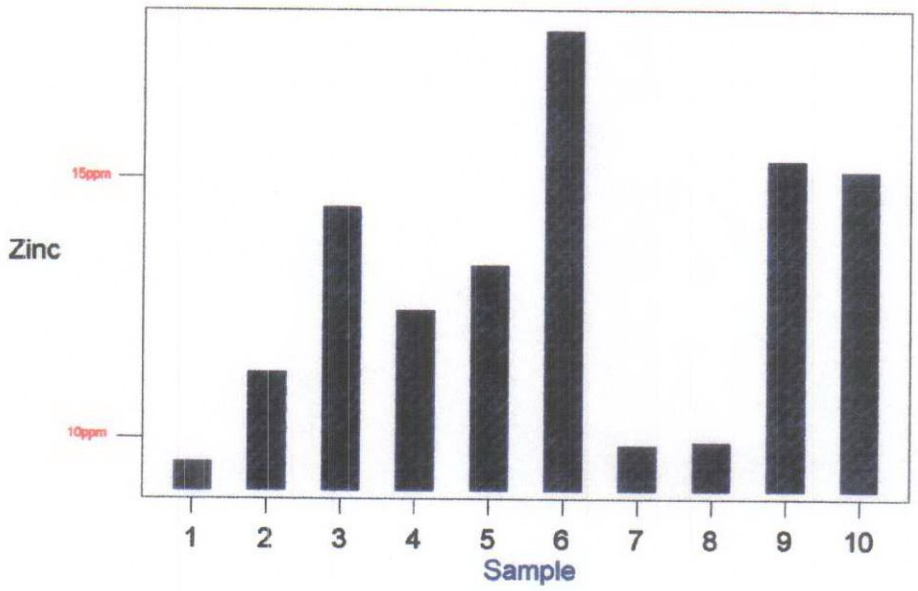
Lower Woods "Crew's Coppice"

Dog's Mercury Transect - Copper



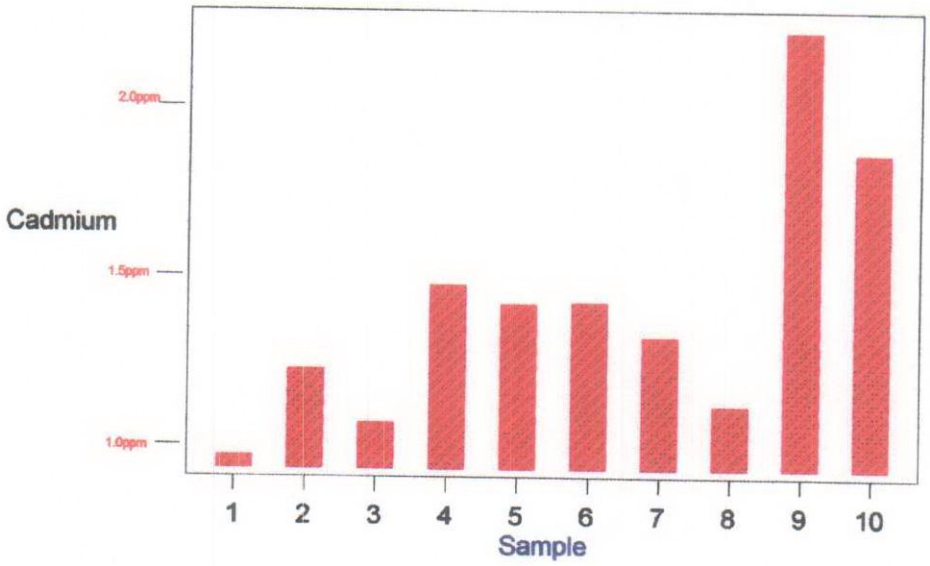
Lower Woods "Crew's Coppice"

Dog's Mercury Transect - Zinc

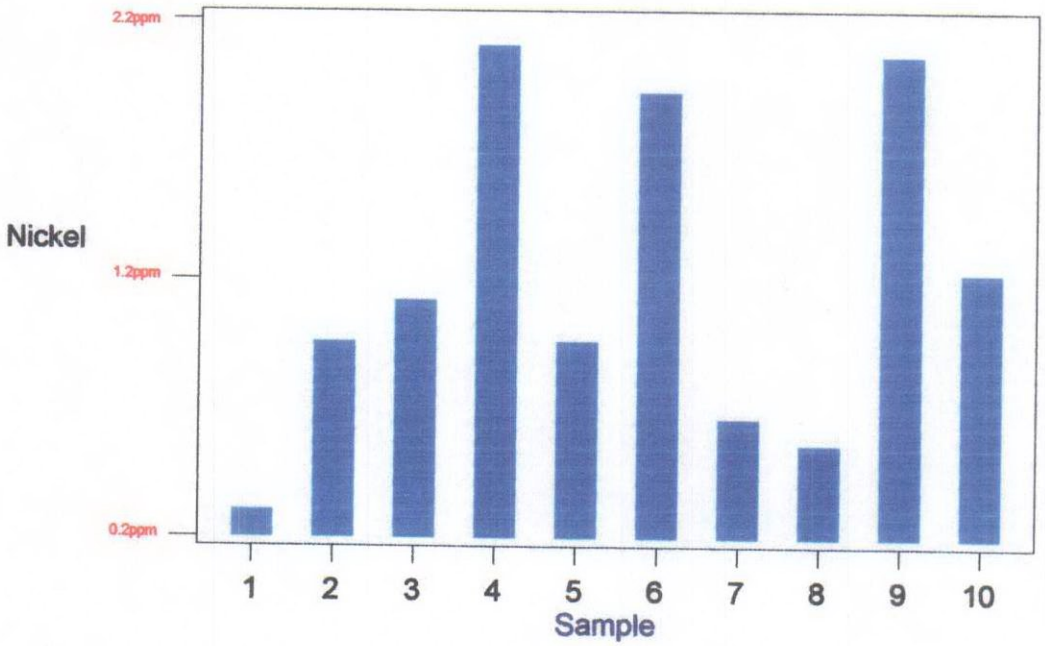


Lower Woods "Crew's Coppice"

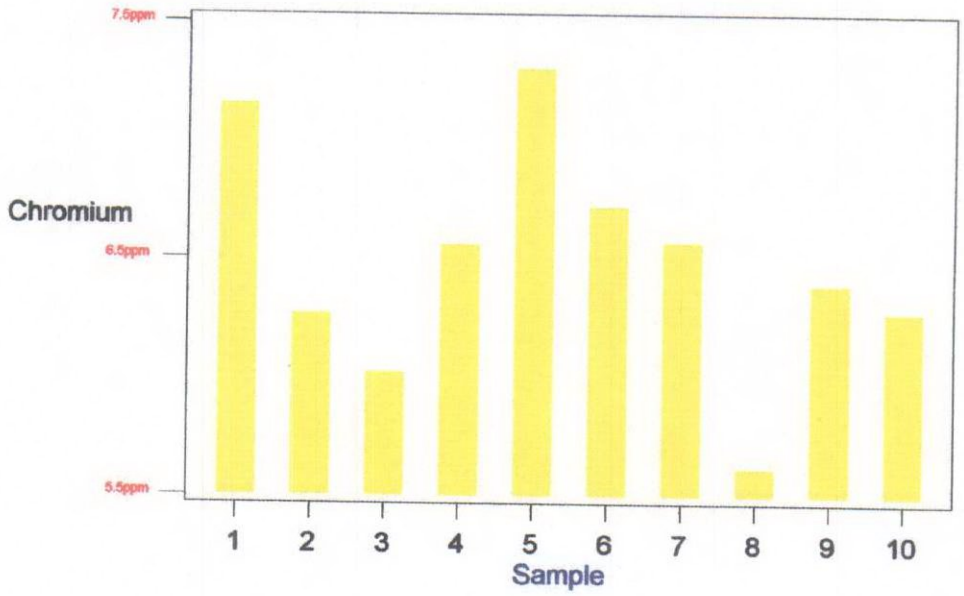
Dog's Mercury Transect - Cadmium



Lower Woods "Crew's Coppice"
Dog's Mercury Transect - Nickel



Lower Woods "Crew's Coppice"
Dog's Mercury Transect - Chromium



Stanley Meadow

Descriptive Statistics Grass Samples from Stanley Meadow – mg / kg (villa site)

Variable	N	N*	Mean	Median	TrMean	StDev
Phosphorus	79	9	4971	4894	4925	2022
Lead	79	9	0.5089	0.4967	0.4999	0.2659
Copper	79	9	7.032	6.839	6.984	1.699
Zinc	79	9	28.116	27.984	28.020	3.833
Cadmium	79	9	0.13339	0.14433	0.13105	0.07784
Nickel	79	9	2.133	2.007	2.079	0.960
Manganese	79	9	468.4	416.8	453.7	240.2

Variable	SE Mean	Minimum	Maximum	Q1	Q3
Phosphorus	227	1842	9276	3184	6497
Lead	0.0299	0.0000	1.1702	0.3135	0.6734
Copper	0.191	3.987	12.556	5.944	7.981
Zinc	0.431	21.356	37.336	24.655	30.341
Cadmium	0.00876	0.00000	0.33169	0.09290	0.19503
Nickel	0.108	0.465	5.167	1.395	2.821
Manganese	27.0	133.6	1162.3	271.5	616.3

Correlations (Pearson) Grass Samples from Stanley Meadow

	Phosphorus	Lead	Copper	Zinc	Cadmium	Nickel
Lead	-0.127					
Copper	-0.354	0.096				
Zinc	0.232	-0.094	0.472			
Cadmium	-0.133	-0.082	-0.135	0.027		
Nickel	0.007	-0.009	0.318	0.351	-0.053	
Manganese	-0.252	0.124	0.399	0.282	-0.236	0.511

Crew's Coppice

Descriptive Statistics Crew's Coppice – Soil Samples

Variable	N	N*	Mean	Median	TrMean	StDev
Phosphorus	93	1	4240	4245	4259	1089
LOI	93	1	24.662	24.293	24.291	4.490
Lead	93	1	118.0	90.4	91.5	242.0
Copper	93	1	40.778	40.536	40.714	2.510
Zinc	93	1	287.74	274.03	276.30	93.66
Cadmium	93	1	2.090	1.806	1.956	1.205
Nickel	93	1	30.662	30.740	30.652	2.744
Chromium	93	1	23.509	24.242	23.316	5.907
Manganese	93	1	962.8	953.3	958.7	194.2

Variable	SE Mean	Minimum	Maximum	Q1	Q3
Phosphorus	113	1052	8510	3603	5000
LOI	0.466	17.075	49.241	21.724	26.823
Lead	25.1	61.0	2418.8	82.0	101.1
Copper	0.260	35.236	48.030	39.212	42.293
Zinc	9.71	117.76	939.62	240.02	300.47
Cadmium	0.125	0.633	10.894	1.472	2.411
Nickel	0.285	21.440	40.010	28.994	32.171
Chromium	0.613	12.031	40.621	19.692	26.754
Manganese	20.1	399.2	1609.6	862.6	1042.4

Correlations (Pearson) Crew's Coppice – Soil Samples

	Phosphorus	LOI	Lead	Copper	Zinc	Nickel	Chromium
LOI	0.260						
Lead	0.076	0.008					
Copper	0.163	-0.001	0.084				
Zinc	0.091	0.220	0.043	0.114			
Nickel	-0.058	-0.573	-0.044	0.055	0.011		
Chromium	-0.248	-0.316	-0.050	0.075	0.120	0.088	
Manganese	0.004	-0.400	-0.012	0.024	0.011	0.621	0.131

Descriptive Statistics Crew's Coppice – "Dog's Mercury"

Variable	N	Mean	Median	TrMean	StDev	SE Mean
Lead	10	11.104	10.789	10.882	2.711	0.857
Copper	10	7.375	7.542	7.385	0.976	0.308
Zinc	10	12.886	12.862	12.694	2.777	0.878
Cadmium	10	1.353	1.311	1.306	0.381	0.120
Nickel	10	1.185	1.037	1.181	0.641	0.203
Chromium	10	6.484	6.472	6.491	0.502	0.159
Manganese	10	1.2530	1.2830	1.2695	0.1966	0.0622

Variable	Minimum	Maximum	Q1	Q3
Lead	7.078	16.902	9.487	12.022
Copper	5.860	8.811	6.486	8.202
Zinc	9.533	17.780	9.895	15.147
Cadmium	0.913	2.164	1.049	1.514
Nickel	0.304	2.098	0.632	1.955
Chromium	5.612	7.302	6.199	6.826
Manganese	0.8588	1.5153	1.1153	1.3971

Correlations (Pearson) Crew's Coppice – "Dog's Mercury"

	Lead	Copper	Zinc	Cadmium	Nickel	Chromium
Copper	0.127					
Zinc	0.492	0.028				
Cadmium	0.400	0.116	0.566			
Nickel	0.219	0.292	0.748	0.671		
Chromium	0.296	-0.619	0.040	-0.003	-0.014	
Manganes	0.263	0.215	0.716	0.490	0.523	-0.059

Lower Wetmoor

Descriptive Statistics Lower Wetmoor – Soil Samples

Variable	N	N*	Mean	Median	TrMean	StDev
Phosphorus	9	1	1661	1262	1661	758
LOI	10	0	19.25	18.19	19.05	5.22
Lead	10	0	77.42	81.21	77.72	9.34
Copper	10	0	18.368	18.538	18.505	0.838
Zinc	10	0	141.66	141.05	142.18	11.68
Cadmium	10	0	1.200	1.174	1.207	0.347
Nickel	10	0	21.21	20.10	20.71	3.53
Chromium	10	0	8.642	8.508	8.730	1.728
Manganese	10	0	1580	1447	1532	756

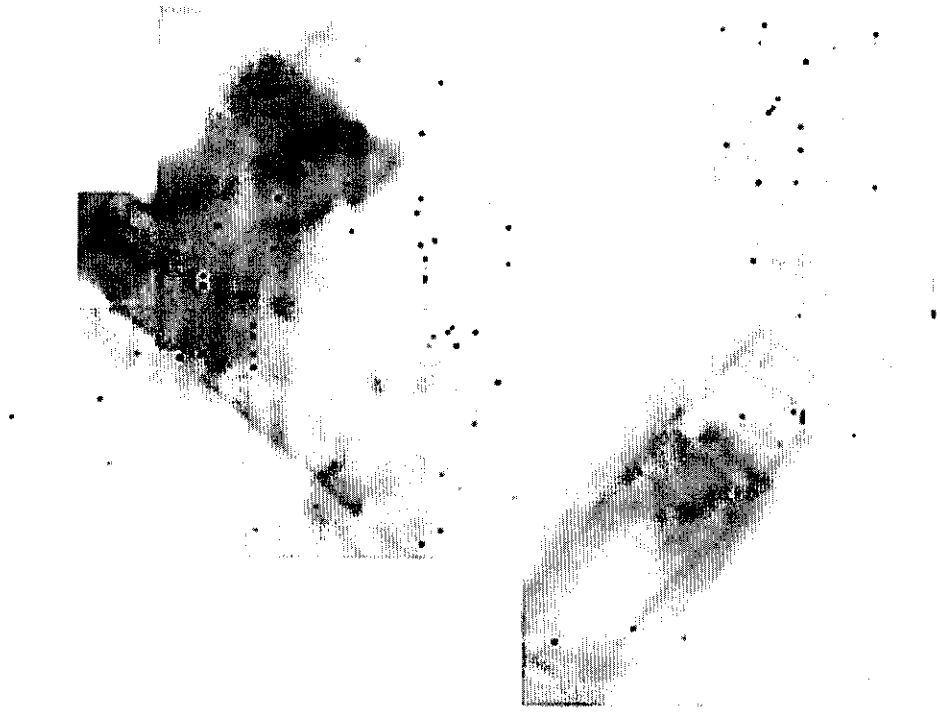
Variable	SE Mean	Minimum	Maximum	Q1	Q3
Phosphorus	253	645	2805	1072	2335
LOI	1.65	12.05	28.03	15.62	22.99
Lead	2.95	63.53	88.93	66.33	84.51
Copper	0.265	16.443	19.195	17.841	19.076
Zinc	3.69	124.03	155.13	130.21	153.83
Cadmium	0.110	0.629	1.710	0.938	1.570
Nickel	1.12	16.55	29.84	19.43	22.63
Chromium	0.546	5.952	10.634	7.054	10.601
Manganese	239	656	2887	1060	2007

Correlations (Pearson) Lower Wetmoor – Soil Samples

	Phosphorus	LOI	Lead	Copper	Zinc	Cadmium	Nickel	Chromium
LOI	0.793							
Lead	0.574	0.694						
Copper	-0.300	-0.381	-0.180					
Zinc	0.204	0.536	0.704	0.005				
Cadmium	0.614	0.775	0.296	-0.373	0.260			
Nickel	-0.406	-0.481	-0.516	0.472	-0.426	-0.000		
Chromium	0.098	-0.368	-0.235	-0.026	-0.557	-0.077	0.435	
Manganese	0.019	-0.401	-0.386	0.042	-0.668	-0.126	0.609	0.730

Interim Report

LOWER WOODS, HAWKESBURY 2002



Richard Osgood
SOUTH GLOUCESTERSHIRE COUNCIL

South Gloucestershire Council

The Wildlife Trusts

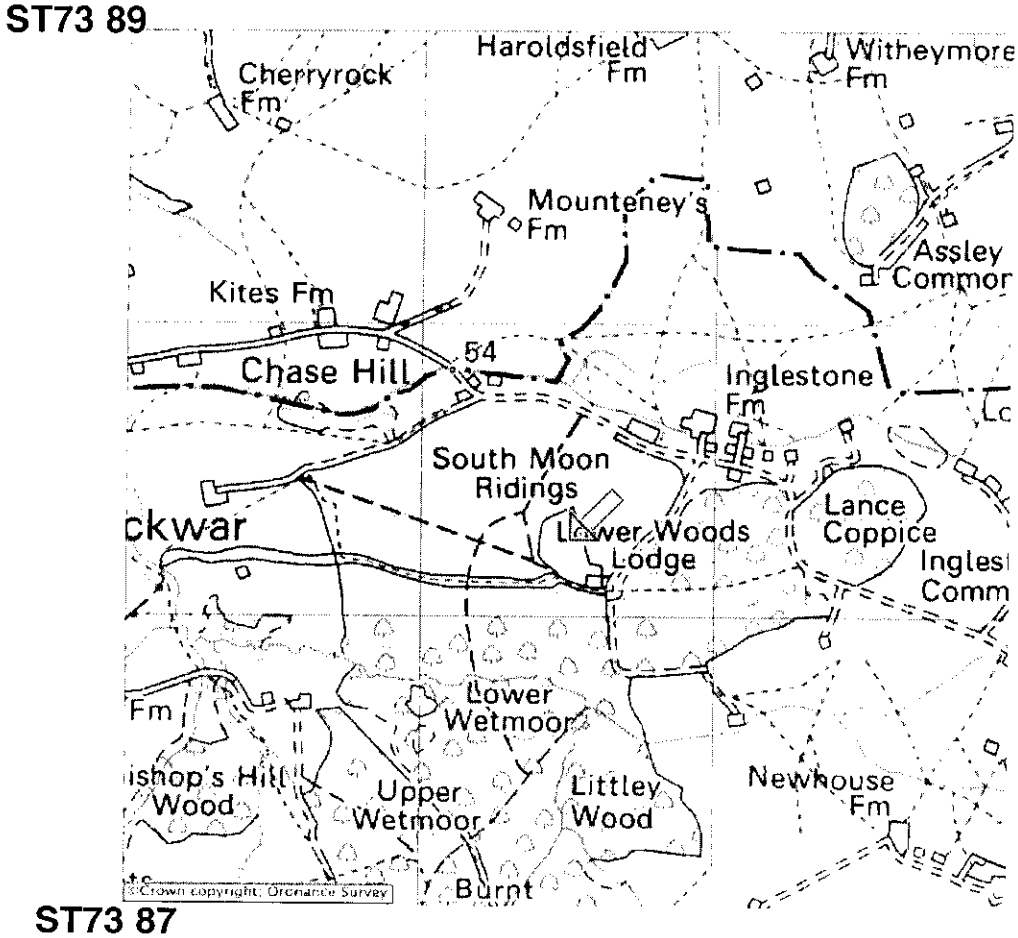
Supported by the
Heritage Lottery Fund

The excavations of a Roman Building at Lower Woods, Hawkesbury 2002

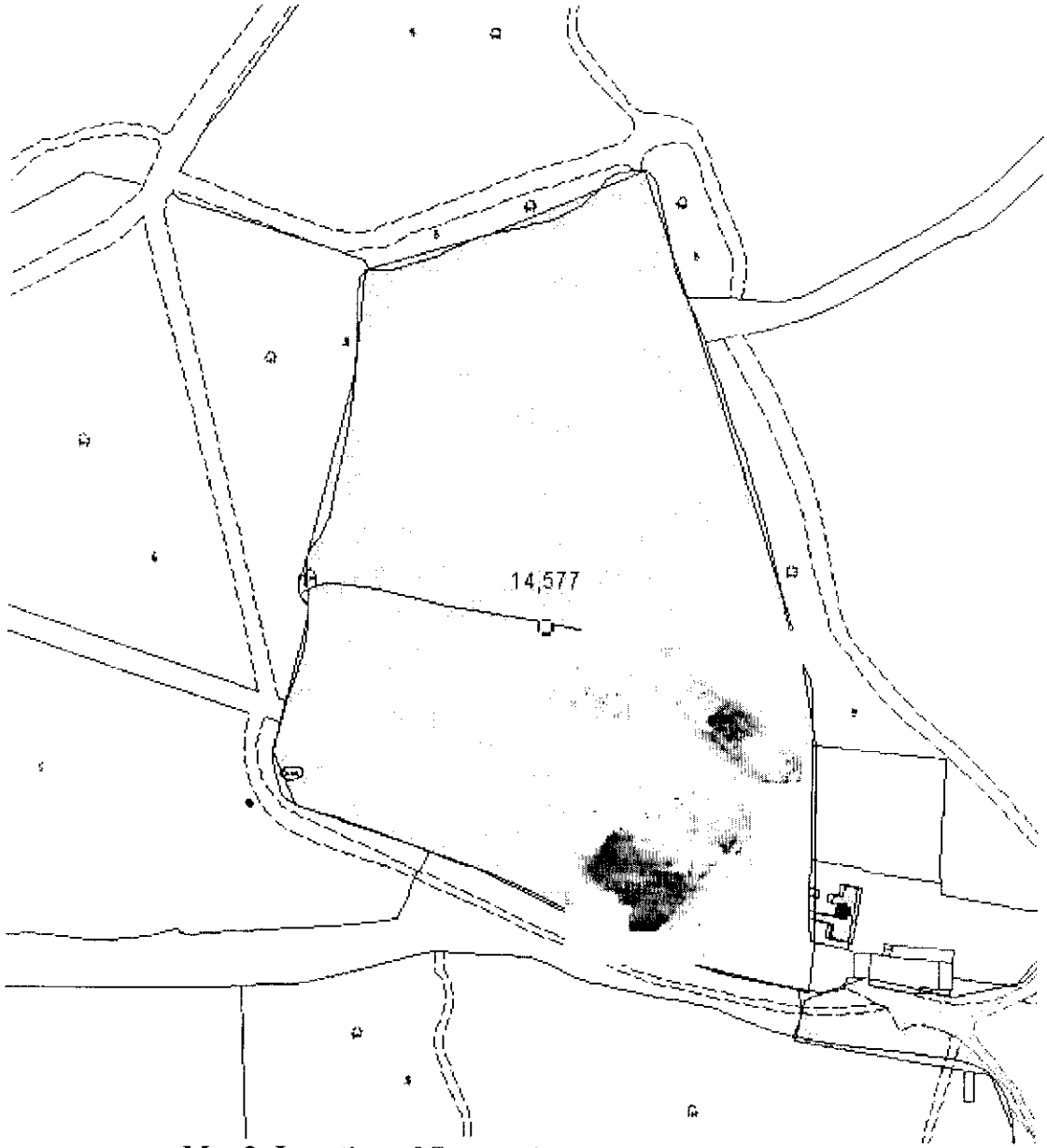
Background

The Parish of Hawkesbury lies along and below the western edge of the Cotswold scarp in the unitary authority area of South Gloucestershire. Lower Woods is a nature reserve managed by the Avon Wildlife trust with 288 hectare of managed woodland. Stanley meadow, the location for the work in this report, lies to the northern end of Lower Woods and appears to have been clear of trees for at least 500 years (Jackson, 1991, 1).

Within Hawkesbury, the Sites and Monuments Record (SMR) for South Gloucestershire Council notes the presence of strip lynchets of indeterminate date on Inglestone common (ST76458775) SMR 6063. Roman deposits included the presence of building materials from a villa on the Badminton Estate (ST81028584) SMR 12658 and Roman pottery and tile finds at Fieldgrove SMR 4921. The ever-watchful head-forester of the Badminton Estate, Mr Don Watts, has also pointed out several other Roman occupation sites – indicated by finds of oyster shell, tegulae, pottery and coins.



Map1: Location of Lower Woods Site



Map2: Location of Survey Area within Lower Woods

A geophysical (resistivity) survey in Stanley Meadow, behind the 18th Century lodge at Lower Woods nature reserve, Hawkesbury (ST74478822) undertaken by Andrew Jackson, Mike and Jill Martin and Rebecca Ireland produced astonishing results (Figure1). Although the above individuals had noted the presence of fragments of pottery and large quantities of metalworking debris when postholes for fences were being cut, and further test-pitting was carried out, no building of antiquity was known in the immediate vicinity. Almost all the finds that were uncovered from this work were of Roman origin with little or nothing from later or earlier periods

As mentioned, the geophysical work took place in a meadow called "Stanley" which perhaps indicates the presence of a stony out crop (or standing stone) in a clearing or "ley" in the wood (Jackson 1991,1). Following this work, an analysis of the soil and plant chemical residues were produced by Jackson (Jackson 1991).

The survey seemed to indicate the presence of several large structures surrounding a courtyard. Later refinements of the resistivity work demonstrated the presence of possible courtyard walls and, perhaps, even an entrance gate.

Project Aims 2002

One small trench was excavated, uncovering the longer structure to the right of the "courtyard", in the summer of 2002 to answer the following questions:

- The geophysical survey results indicate the presence of substantial structures. Although the finds from nearby test pits have been almost exclusively Roman in date, excavation is intended to test the hypothesis that the structures are Roman (this seemed likely as nothing later was noted on tithe maps and that this land had been cleared for c500 years).

- If the deposits ARE Roman, are they of 3rd and 4th Century date as per many of the other Roman elements that have been excavated in South Gloucestershire so far?

- Are the structures domicile in nature?

- How close to the surface are the remains and what is the level of their preservation?

- What is the scope for future work, on-site interpretation, and educational opportunities?

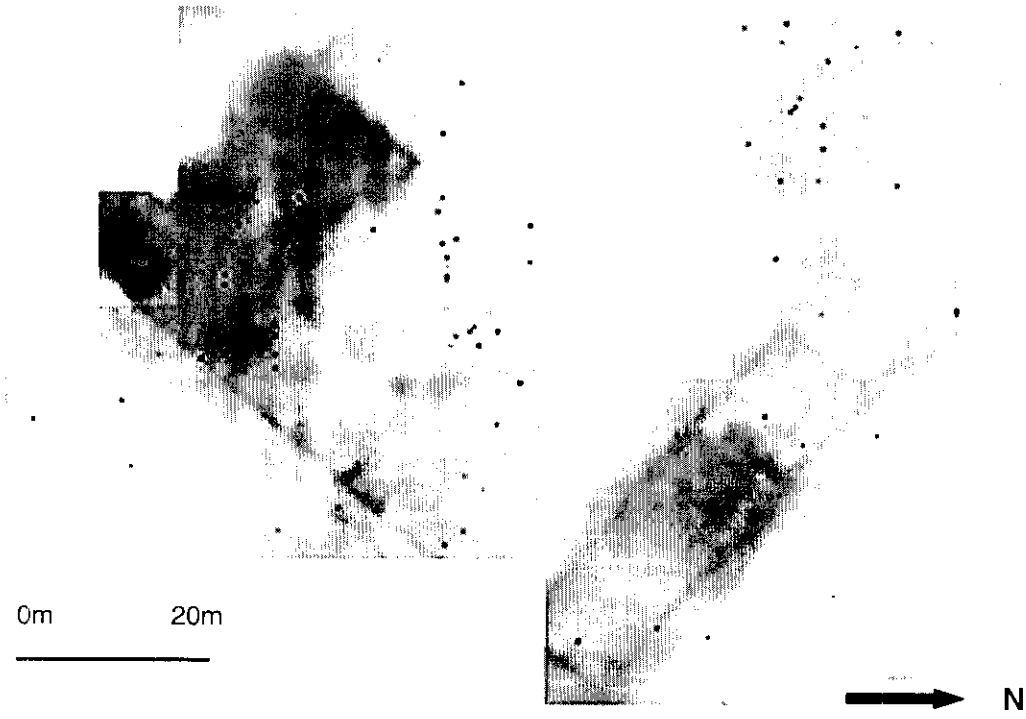


Figure1: Trench location 2002 (see Plan below)
Geophysical Survey at Lower Woods (Sagascan)

Results:

Trench 1

Local volunteers and Professional archaeologists from South Gloucestershire Council uncovered substantial walls of a structure. These lay only a short distance below the surface, just below the level of the turf. The walls were c800mmthick and were constructed of lias limestone in much the same fashion as those of the nearby villa at Horton.

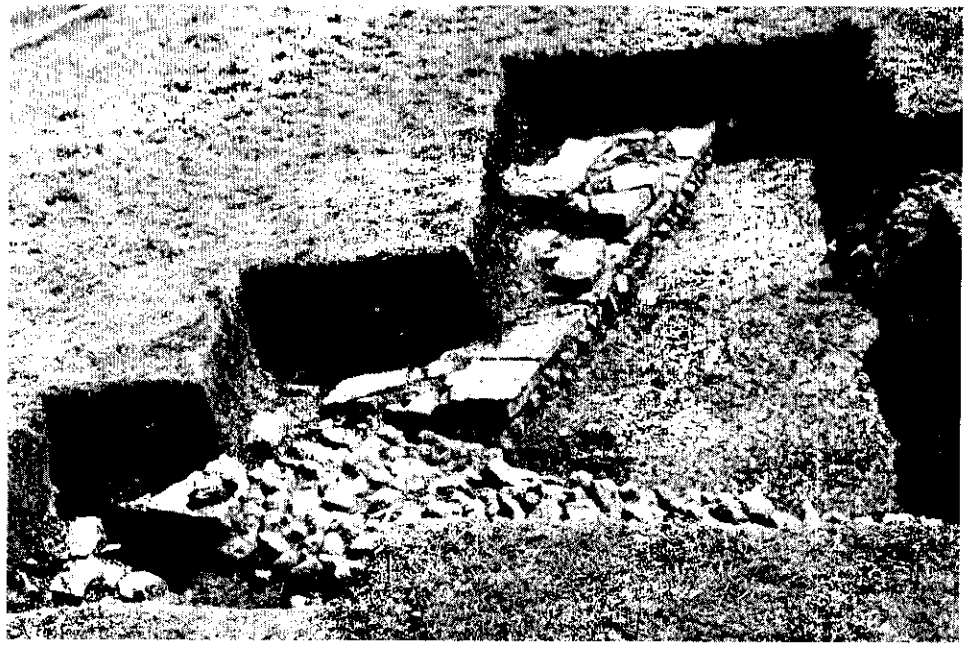
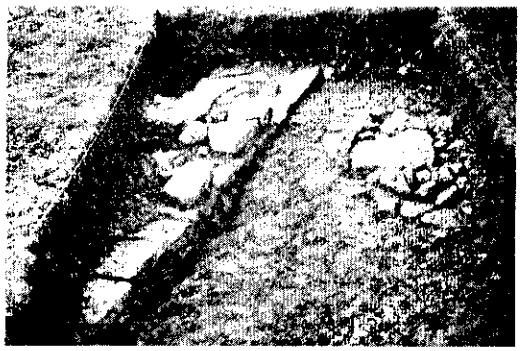
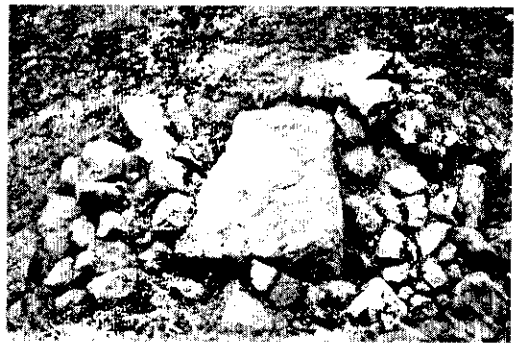


Figure 2: The walls of the Lower Woods Building

These walls were altogether wider and sat on a bedding of cobbles as a foundation (Figure 2). The walls exposed were built in one phase as the junction of internal and external walls were on the same foundation level. Little by way of domestic finds were recovered. An unidentifiable coin was found in the topsoil and much pottery of 2nd and 3rd Century date was found. A substantial quantity of metalworking debris was found throughout the interior of the building which might point to an industrial raison d'être for the structure.

A substantial squared limestone block sat on top of a 'nest' of rough cobbled stones within the building (Figures 2 and 3). Initially it was thought that this was a possible post-pad of a Roman aisled building. However, excavation showed no stratified dating material for this feature although sherds of broken Roman pottery lay within the cobbled on which the block sat. The location of the pad so close to the walls would also make little sense and its setting in a loose heap of stones would also point against its use as a post pad for the main building. It is possible that it represents a later re-use of a Roman block (Cunliffe, pers.comm.).





Figures 2 and 3 The Roman walls and "Pier base"

Features

Feature 1

Well-constructed internal wall of large building. Built from large squared limestone blocks of average size c410 x 80mm. This wall was around 80cm wide and was mortared together with a gritty yellow matrix. The outer and inner faces of the wall were nicely squared whilst the interior stones of the wall were smaller and more angular. Only one wall course survives over cobble foundations layer

Feature 2

Very large squared limestone slab some 490 x 350 x 210mm in size. Sat on top of and was surrounded by large angular rubble stones of which a soil matrix was only a small component. This sat on Roman material which was also within the cobbling and thus seems to be part of a later re-use of the site or building as opposed to a 2^{nd}-3^{rd} century integral first phase component

Feature 3

The remnants of the external wall of the building (Figure 4). The proper stone courses have been robbed out leaving only the cobble foundation layer. These stones were close packed and were angular in nature, on average 100 –150 mm in size. These had been placed in a construction pit and then had a sandy (?mortar) layer on top (layer 5) some 100mm thick. This cobble layer of foundations was also present below the other excavated (internal) wall, Feature 1.

Figure 4: The Foundation stones, Feature 3

Feature 4
The foundation trench for the cobbles of the foundation (f3) and the overlying walls.

Conclusions:

Although much of the building material appears to have been robbed out – enough of this structure is preserved to provide valuable information. It is altogether more massive than the structure at Horton (subject of ongoing excavations by South Gloucestershire Council) the walls being some 80cm wide. The presence of pottery of the 2nd and 3rd Centuries AD (Evans, D. Pers.comm.) would indicate that this is also an early site. The finds are also of interest; although perhaps relating solely to the particular structure we were excavating, much by way of industrial waste (metalworking debris) was recovered. This fits the general pattern for the overall site and might indicate that the complex was dedicated to industrial activities. This is something that can be tested with further excavations of the buildings at the South of the complex.

The deposits lie close to the surface of the field but are not under threat as this area is carefully managed as part of the nature reserve. The structure has been heavily robbed but the elements which remain are relatively well preserved and will certainly provide valuable archaeological information.

Site Potential:

In terms of its potential as a resource for local communities, the site is clearly most important. Site visits were attended by local people in 2002 (and are planned for 2003) and we have had school parties on site as well to see the archaeology first hand. The results of the excavations have also been used in a series of local talks about the nature of Roman archaeology in the region.

The site has certainly got an industrial element to its history. Further excavation work is planned which will consider the nature of the deposits to the south of the site (and perhaps a domestic element) alongside the courtyard itself, its walls and a structure which might be a gate.

The fact that the pottery is comparatively early in date 2nd – 3rd Centuries (as opposed to 3rd – 4th Centuries AD) is also significant. Our understanding of Roman South Gloucestershire might be considerably enhanced by further excavation. The theory that the area was part of a Roman Imperial mining estate or *Pagus* in this period can be partially tested with our results.

Small Finds:

Iron: The vast majority of finds from the excavations of 2002 were of iron timber nails. 52 nails were recovered – these of varying lengths. Many of these were clinched over.

Copper Alloy: Only one object of copper alloy was uncovered. This, SF001, was a small copper alloy disc, probably a coin, from the topsoil. The object was so worn that, if it was a coin, neither the obverse, nor the reverse or legend was visible.

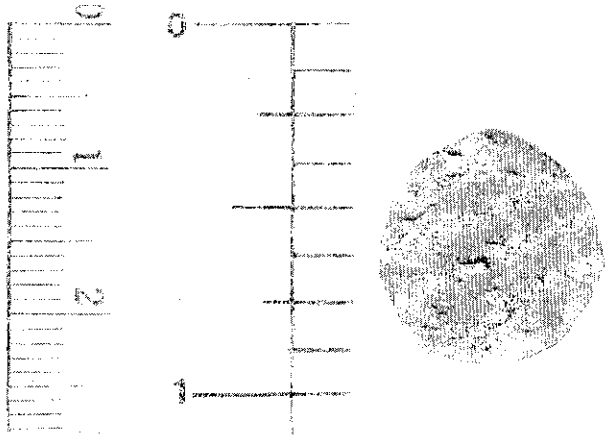


Figure 5: the copper alloy object
(Photo: Mike Martin)

Misc: Other finds recorded include glass splinters and metal-working debris. This occurred within the building.

Animal Bone:

Many animal bones were excavated in 2002 though it has been decided to wait for further excavation results before this material is sent to a specialist for identification.

Some of these bones seem to show butchery marks, and the presence of a pig's tusk was also noted (Figure 6)

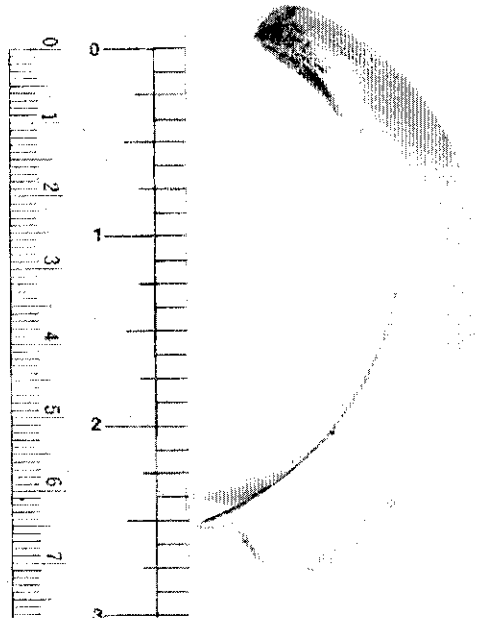


Figure 6: The Pig Tusk
(Photo: Mike Martin)

Human Bone:

No human remains were found

Pot Report:

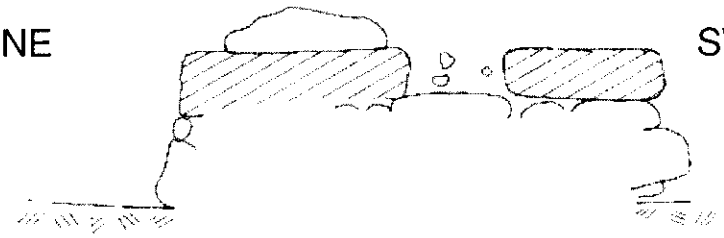
Acknowledgements:

My thanks are owing to the Avon Wildlife Trust for permissions to excavate, The Heritage Lottery Fund for placement funding, to Sagascan for the geophysical survey, and to the following for all the hard work, insight and suggestions on the excavations:

My Co-Director David Evans (Sites and Monuments Record Officer, South Gloucestershire Council), Maggie White, Don Watts, Sarah Rowlatt, Dave Rowley, Rebecca Ireland, Mike Martin, Jill Martin, and Andrew Jackson

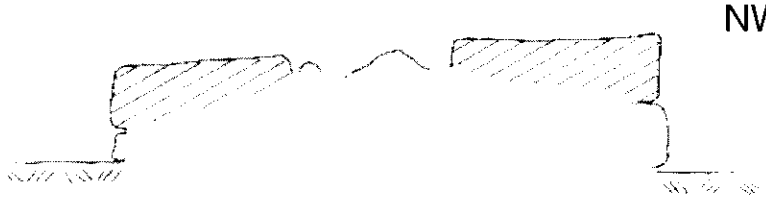
Plan of Lower Woods Site 2002
Scale 1:40

NE SW



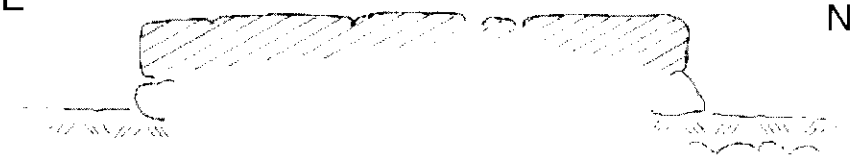
PROFILE A

SE NW



PROFILE B

SE NW



PROFILE C

SW NE

PROFILE D

Limestone walls blocks

Cobble

Scale 1:10